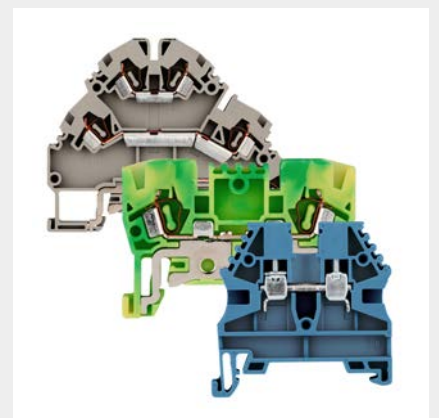


Power Distribution & Control



Part 5/5 Transformers, switches, measuring instruments



ONLINE SHOPPING!

In the office or on the road with the Live Phone App

INCL. AVAILABILITY INFORMATION



Ex stock

General Information

TOP WAREHOUSE MANAGEMENT IN OUR DISTRIBUTION CENTRE NEAR VIENNA

The new Schrack distribution centres is located just outside Vienna. The prominent appearance of the building with its unmistakable Schrack design highlights all product characteristics which are handled logistically in its interior. We consider availability the number 1 factor for your economic and business success!

- Over 12,000m² indoor storage space and an outdoor cable storage space of 2,500m²
- More than 15,000 items are stored ready for shipping
- Professional warehouse management by our top-trained staff



Look out for the icon signalling prompt availability for delivery

GENERAL INFORMATION

- All **dimensioned drawings** are displayed within the confines of available space on the page and are only intended as a guide.
- All **circuit diagrams** are schematic wiring diagrams which are intended to allow better understanding of the function, and will need to be edited/added to during the course of project planning.
- All **images** represent samples of the product and are intended for information purposes only.

Unless otherwise stipulated, the current version of the General Terms of Delivery issued by The Association of the Austrian Electrical and Electronics Industries "FEEL" shall apply. You can find a copy of these at the end of this catalogue.

No liability for errors in text, type or images; we reserve the right to make changes to technical specifications of the product range.

The user information contained in this catalogue reflect the opinion of the company at the time of writing. The information contained in it was assembled on the basis of published norms, specialist industry presentations, specialist literature and in-house expertise. The content is for informational purposes only and has no validity in law.

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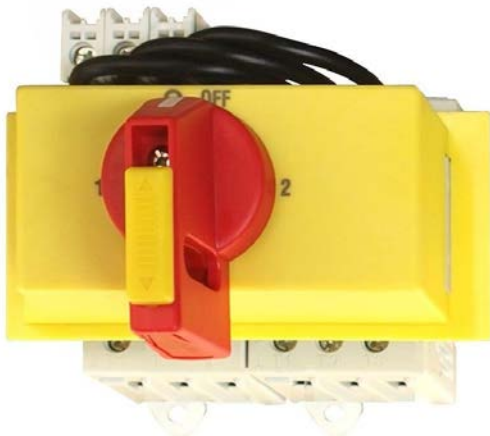
Series B - Main Switches Emergency Stop



Series B - Main Switches Emergency Stop



Series B - Changeover Switches



Series B - Repair Switches Enclosed



Series B - Main Switches



Series B - Main Switches Photovoltaic



Main, Emergency Stop and Repair Switches

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Series B - Main Switches Emergency Stop, 4 Hole Panel Mounting, Lockable, IP66

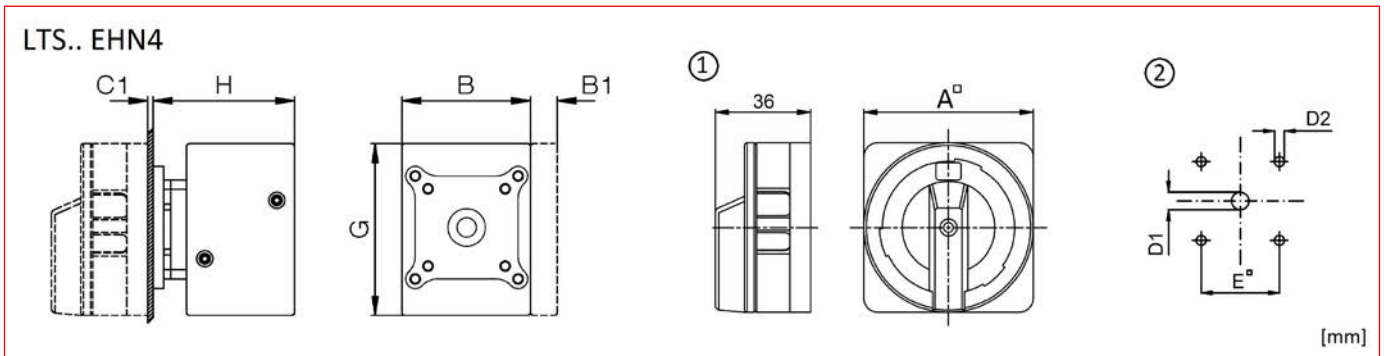


IN8E2332

Schrack-Info

- Handle red/yellow
- Amperage: AC21 / 690V
- Power rating: AC23 / 3x400V
- Protection degree frontside: IP66
- Protection degree: IP40
- Locking device for max. 3 padlocks

Dimensions



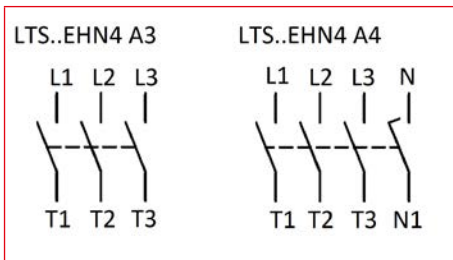
1) locking device SV4 (for 3 padlocks)

2) drilling plan

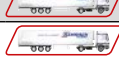

Type	A	3-pole B	4-pole B	B1*	C1	D1	D2	E	G	H
LTS20-80..	64	48	62.5	10	1 - 5	9	5	48	64	54
LTS85-125..	64	78	78	10	1 - 5	9	5	48	85	60

* optional or included auxiliary contacts

Wiring Diagram



Series B - Main Switches Emergency Stop, 4 Hole Panel Mounting, Lockable, IP66

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
3-Pole, Locking Device SV4			
Main switch emergency off 3-pole, front mounting, 20A, 7.5kW	LTS20 EHN4 A3		IN8E2332
Main switch emergency off 3-pole, front mounting, 25A, 10kW	LTS25 EHN4 A3		IN8E2333
Main switch emergency off 3-pole, front mounting, 32A, 12.5kW	LTS32 EHN4 A3		IN8E2334
Main switch emergency off 3-pole, front mounting, 40A, 16kW	LTS40 EHN4 A3		IN8E2335
Main switch emergency off 3-pole, front mounting, 63A, 22kW	LTS63 EHN4 A3		IN8E2337
Main switch emergency off 3-pole, front mounting, 80A, 22kW	LTS80 EHN4 A3		IN8E2338
Main switch emergency off 3-pole, front mounting, 85A, 30kW	LTS85 EHN4 A3		IN8E2339
Main switch emergency off 3-pole, front mounting, 100A, 37kW	LTS100 EHN4 A3		IN8E233A
Main switch emergency off 3-pole, front mounting, 125A, 45kW	LTS125 EHN4 A3		IN8E233B
4-Pole, Locking Device SV4			
Main switch emergency off 4-pole, front mounting, 20A, 7.5kW	LTS20 EHN4 A4		IN8E2432
Main switch emergency off 4-pole, front mounting, 25A, 10kW	LTS25 EHN4 A4		IN8E2433
Main switch emergency off 4-pole, front mounting, 32A, 12.5kW	LTS32 EHN4 A4		IN8E2434
Main switch emergency off 4-pole, front mounting, 40A, 16kW	LTS40 EHN4 A4		IN8E2435
Main switch emergency off 4-pole, front mounting, 63A, 22kW	LTS63 EHN4 A4		IN8E2437
Main switch emergency off 4-pole, front mounting, 80A, 22kW	LTS80 EHN4 A4		IN8E2438



Series B - Main Switches Emergency Stop, 4 Hole Panel Mounting, Door-Coupling, Lockable, IP66

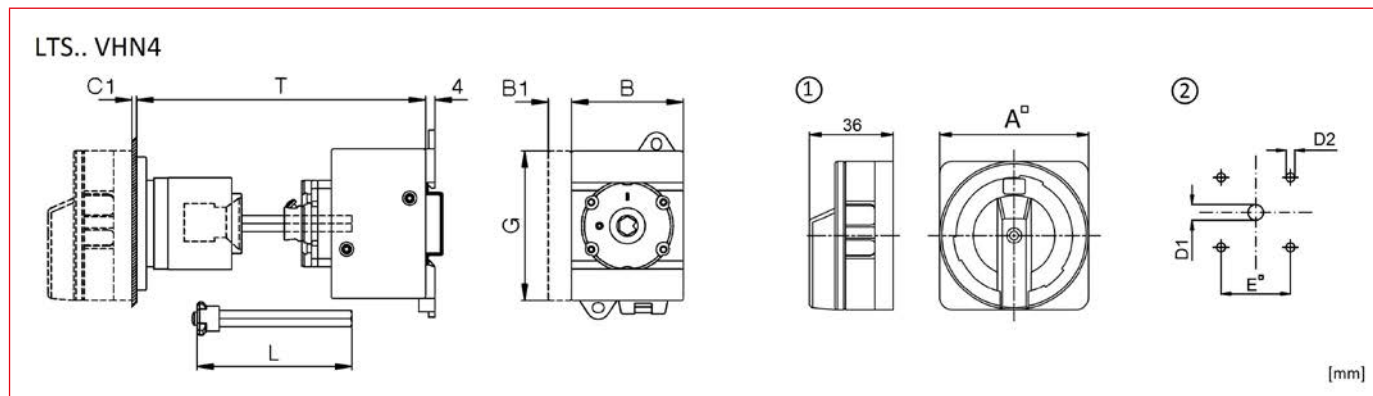


IN8A2432

Schrack-Info

- Handle red/yellow
- Installation depth adjustable
- Amperage: AC21 / 690V
- Power rating: AC23 / 3x400V
- Protection degree frontside: IP66
- Protection degree: IP40
- Locking device for max. 3 padlocks

Dimensions

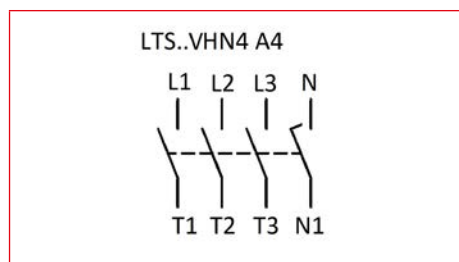


- 1) locking device SV4 (for 3 padlocks)
2) drilling plan

Type	A	4-pole B	B1*	C1	D1	D2	E	G	T min - T max	L
LTS20-40	64	48	10	1 - 5	9	5	48	64	111 - 190	T - 60±3
LTS63, 80	64	62.5	10	1 - 5	9	5	48	64	111 - 190	T - 60±3

*optional or included auxiliary contacts

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
4-Pole, Locking Device SV4			
Main switch emergency off 4-pole, base mounting, 20A, 7.5kW	LTS20 VHN4 A4		IN8A2432
Main switch emergency off 4-pole, base mounting, 25A, 10kW	LTS25 VHN4 A4		IN8A2433
Main switch emergency off 4-pole, base mounting, 32A, 12.5kW	LTS32 VHN4 A4		IN8A2434
Main switch emergency off 4-pole, base mounting, 40A, 16kW	LTS40 VHN4 A4		IN8A2435
Main switch emergency off 4-pole, base mounting, 63A, 22kW	LTS63 VHN4 A4		IN8A2437
Main switch emergency off 4-pole, base mounting, 80A, 22kW	LTS80 VHN4 A4		IN8A2438

Series B - Main Switches Emergency Stop, floor-mounted, IP40

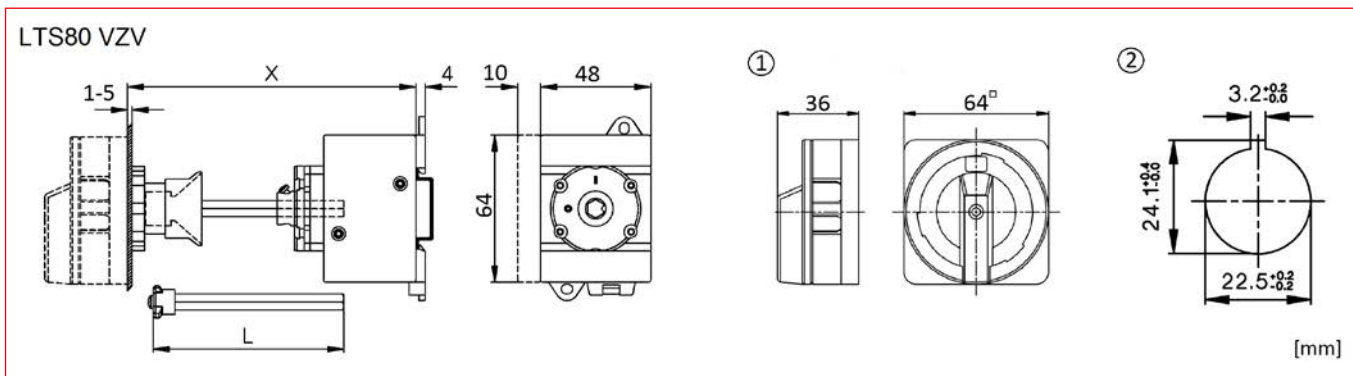


IN9B2000

Schrack-Info

- Handle red/yellow
- Installation depth adjustable
- Amperage: AC21 / 690V
- Power rating: AC23 / 3x400V
- Protection degree frontside: IP66
- Protection degree: IP40
- Locking device for max. 3 padlocks

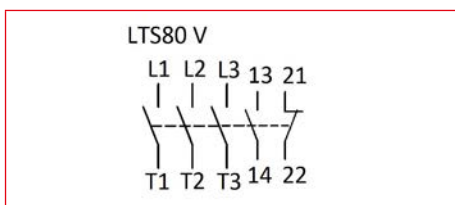
Dimensions



- 1) locking device SV4 (for 3 padlocks)
2) drilling plan

Type	Xmin	Xmax	L
LTS80 V	91	190	X - 40±3

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
3-Pole Main switch emergency off 3-pole, base mounting, 80A, 22kW	LTS80 VZV		IN9B2000



Series B - Main Switches Emergency Stop, Modular, Lockable, IP40

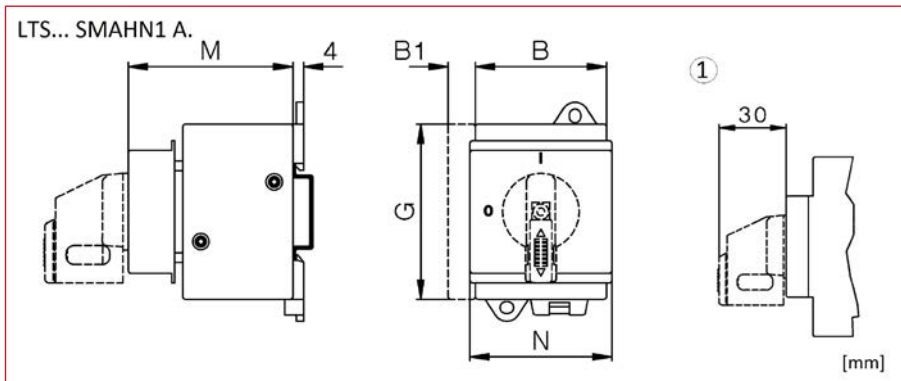


IN8R2425

Schrack-Info

- Handle red/yellow
- Amperage: ≤ LTS80: AC21 / 690V
- Amperage: ≥ LTS85: AC21 / 1000V
- Power rating: AC23 / 3x400V
- Protection degree: IP40
- Locking device for max. 2 padlocks

Dimensions

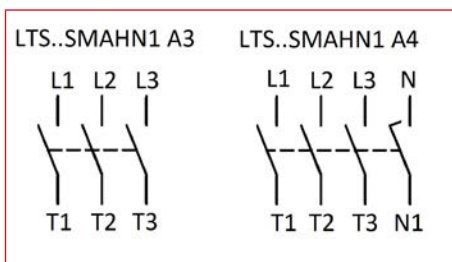


1) locking device SV1 (for 2 padlocks)








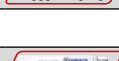



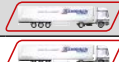


Type	3-pole B	4-pole B	B1*	G	M	N
LTS20 - 40	48	48	10	64	60	52
LTS63, 80	48	62.5	10	64	60	52
LTS85-125	78	78	10	85	60	78

*optional or included auxiliary contacts

Wiring Diagram

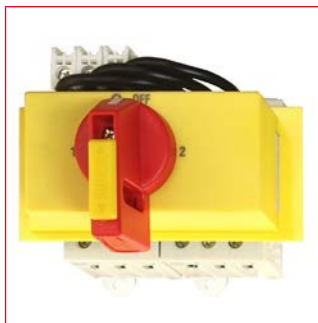


Series B - Main Switches Emergency Stop, Modular, Lockable, IP40

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
3-Pole, Locking Device SV1			
Main switch emergency off 3-pole, DIN-rail mounting, 20A, 7.5kW	LTS20 SMAHN1 A3		IN8R2322
Main switch emergency off 3-pole, DIN-rail mounting, 25A, 10kW	LTS25 SMAHN1 A3		IN8R2323
Main switch emergency off 3-pole, DIN-rail mounting, 32A, 12.5kW	LTS32 SMAHN1 A3		IN8R2324
Main switch emergency off 3-pole, DIN-rail mounting, 40A, 16kW	LTS40 SMAHN1 A3		IN8R2325
Main switch emergency off 3-pole, DIN-rail mounting, 63A, 22kW	LTS63 SMAHN1 A3		IN8R2327
Main switch emergency off 3-pole, DIN-rail mounting, 80A, 22kW	LTS80 SMAHN1 A3		IN8R2328
Main switch emergency off 3-pole, DIN-rail mounting, 85A, 30kW	LTS85 SMAHN1 A3		IN8R2329
Main switch emergency off 3-pole, DIN-rail mounting, 100A, 37kW	LTS100 SMAHN1 A3		IN8R232A
Main switch emergency off 3-pole, DIN-rail mounting, 125A, 45kW	LTS125 SMAHN1 A3		IN8R232B
4-Pole, Locking Device SV1			
Main switch emergency off 4-pole, DIN-rail mounting, 20A, 7.5kW	LTS20 SMAHN1 A4		IN8R2422
Main switch emergency off 4-pole, DIN-rail mounting, 25A, 10kW	LTS25 SMAHN1 A4		IN8R2423
Main switch emergency off 4-pole, DIN-rail mounting, 32A, 12.5kW	LTS32 SMAHN1 A4		IN8R2424
Main switch emergency off 4-pole, DIN-rail mounting, 40A, 16kW	LTS40 SMAHN1 A4		IN8R2425
Main switch emergency off 4-pole, DIN-rail mounting, 63A, 22kW	LTS63 SMAHN1 A4		IN8R2427
Main switch emergency off 4-pole, DIN-rail mounting, 80A, 22kW	LTS80 SMAHN1 A4		IN8R2428



Series B - Changeover Switches, Modular, Lockable, IP40

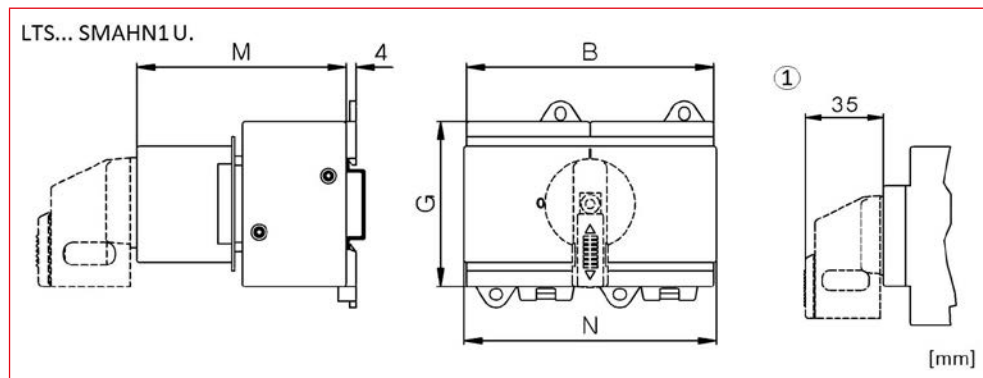


IN8R5324

Schrack-Info

- Handle red/yellow
- Amperage: AC21 / 690V
- Power rating: AC23 / 3x400V
- Protection degree: IP40
- Locking device for max. 2 padlocks

Dimensions



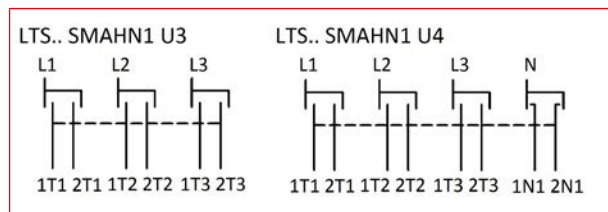
1) locking device SV164 (for 2 padlocks)

Type	B	G	M	N
LTS20 - 40	96	64	74	126/97 ^{a)}
LTS63	125	64	74	126

a) N=126 including side flaps of the cover

N=97 with remote (break-off) side tabs of the cover

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
3-Pole, Locking Device SV164			
Changeover switch 3-pole, DIN-rail mounting, 20A, 7.5kW, 1-0-2	LTS20 SMAHN1 U3		IN8R5322
Changeover switch 3-pole, DIN-rail mounting, 25A, 10kW, 1-0-2	LTS25 SMAHN1 U3		IN8R5323
Changeover switch 3-pole, DIN-rail mounting, 32A, 12.5kW, 1-0-2	LTS32 SMAHN1 U3		IN8R5324
Changeover switch 3-pole, DIN-rail mounting, 40A, 16kW, 1-0-2	LTS40 SMAHN1 U3		IN8R5325
Changeover switch 3-pole, DIN-rail mounting, 63A, 22kW, 1-0-2	LTS63 SMAHN1 U3		IN8R5327
4-Pole, Locking Device SV164			
Changeover switch 4-pole, DIN-rail mounting, 20A, 7.5kW, 1-0-2	LTS20 SMAHN1 U4		IN8R5422
Changeover switch 4-pole, DIN-rail mounting, 25A, 10kW, 1-0-2	LTS25 SMAHN1 U4		IN8R5423
Changeover switch 4-pole, DIN-rail mounting, 32A, 12.5kW, 1-0-2	LTS32 SMAHN1 U4		IN8R5424
Changeover switch 4-pole, DIN-rail mounting, 40A, 16kW, 1-0-2	LTS40 SMAHN1 U4		IN8R5425
Changeover switch 4-pole, DIN-rail mounting, 63A, 22kW, 1-0-2	LTS63 SMAHN1 U4		IN8R5427

Series B - Repair Switches Enclosed, Lockable, IP65

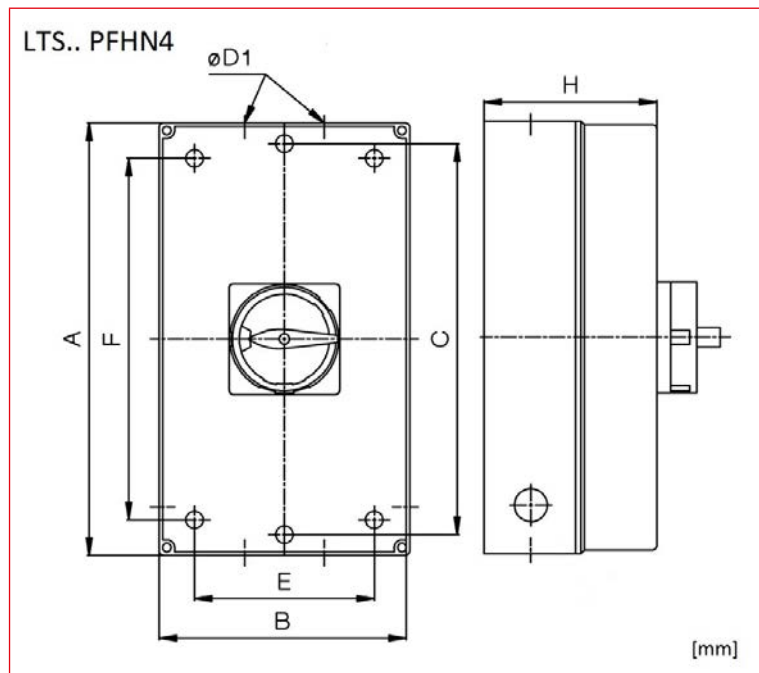


IN8P2332

Schrack-Info

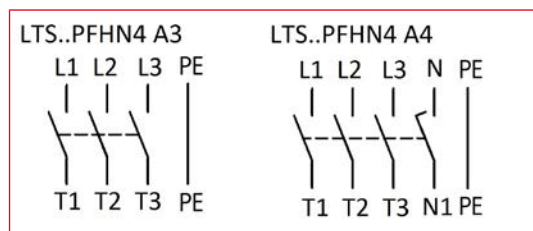
- Handle red/yellow
- Amperage: AC21 / 690V
- Power rating: AC23 / 3x400V
- Including PE-terminal
- Protection degree: IP65
- Locking device for max. 3 padlocks

Dimensions



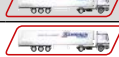











Type	A	B	C	D1	E	F	H
LTS20 PFH.. A. - LTS40 PFH.. A.	130	98	121	25.5/20.5	75	100	77
LTS63 PFH.. A. - LTS80 PFH.. A.	200	120	-	40.5/32.5+16.5	95	165	86

Wiring Diagram



Series B - Repair Switches Enclosed, Lockable, IP65

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
3-Pole, Locking Device SV4			
Repair switch emergency off 3-pole, 20A, 7.5kW	LTS20 PFHN4 A3		IN8P2332
Repair switch emergency off 3-pole, 25A, 10kW	LTS25 PFHN4 A3		IN8P2333
Repair switch emergency off 3-pole, 32A, 12.5kW	LTS32 PFHN4 A3		IN8P2334
Repair switch emergency off 3-pole, 40A, 16kW	LTS40 PFHN4 A3		IN8P2335
Repair switch emergency off 3-pole, 63A, 22kW	LTS63 PFHN4 A3		IN8P2337
Repair switch emergency off 3-pole, 80A, 22kW	LTS80 PFHN4 A3		IN8P2338
4-Pole, Locking Device SV4			
Repair switch emergency off 4-pole, 20A, 7.5kW	LTS20 PFHN4 A4		IN8P2432
Repair switch emergency off 4-pole, 25A, 10kW	LTS25 PFHN4 A4		IN8P2433
Repair switch emergency off 4-pole, 32A, 12.5kW	LTS32 PFHN4 A4		IN8P2434
Repair switch emergency off 4-pole, 40A, 16kW	LTS40 PFHN4 A4		IN8P2435
Repair switch emergency off 4-pole, 63A, 22kW	LTS63 PFHN4 A4		IN8P2437
Repair switch emergency off 4-pole, 80A, 22kW	LTS80 PFHN4 A4		IN8P2438

Series B - Main Switches, 4 Hole Panel Mounting

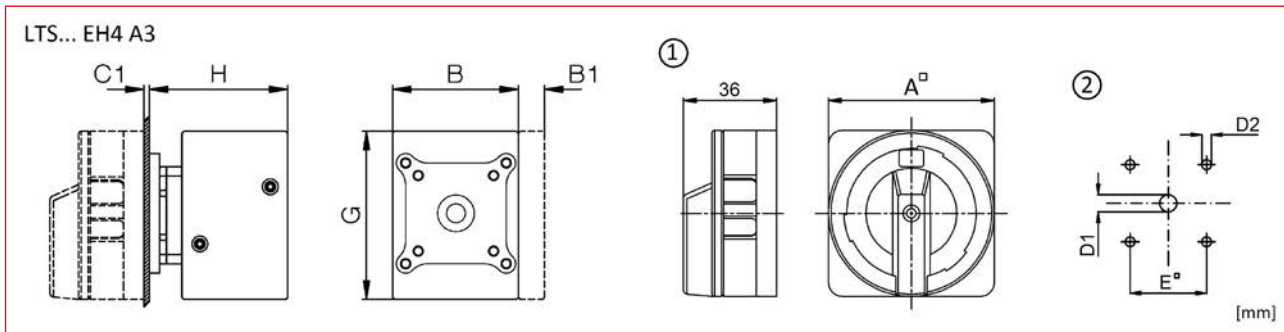


IN8E1332

Schrack-Info

- Handle black/grey
- Amperage: ≤ LTS80: AC21 / 690V
- Amperage: ≥ LTS85: AC21 / 1000V
- Power rating: AC23 / 3x400V
- Protection degree frontside: IP65
- Protection degree: IP40
- Locking device for max. 3 padlocks

Dimensions

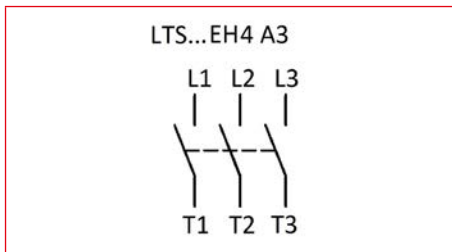


- 1) locking device SV4 (for 3 padlocks)
2) drilling plan

Type	A	B	B1*	C1	D1	D2	E	G	H
LTS20-80..	64	48	10	1 - 5	9	5	48	64	54
LTS85-125..	64	78	10	1 - 5	9	5	48	85	60

*optional or included auxiliary contacts

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
3-Pole, Locking Device SV4			
Main switch 3-pole, front mounting, 20A, 7.5kW	LTS20 EH4 A3		IN8E1332
Main switch 3-pole, front mounting, 25A, 10kW	LTS25 EH4 A3		IN8E1333
Main switch 3-pole, front mounting, 32A, 12.5kW	LTS32 EH4 A3		IN8E1334
Main switch 3-pole, front mounting, 40A, 16kW	LTS40 EH4 A3		IN8E1335
Main switch 3-pole, front mounting, 63A, 22kW	LTS63 EH4 A3		IN8E1337
Main switch 3-pole, front mounting, 80A, 22kW	LTS80 EH4 A3		IN8E1338
Main switch 3-pole, front mounting, 85A, 30kW	LTS85 EH4 A3		IN8E1339
Main switch 3-pole, front mounting, 100A, 37kW	LTS100 EH4 A3		IN8E133A
Main switch 3-pole, front mounting, 125A, 45kW	LTS125 EH4 A3		IN8E133B

Series B - Main Switches, Modular, Lockable, IP40

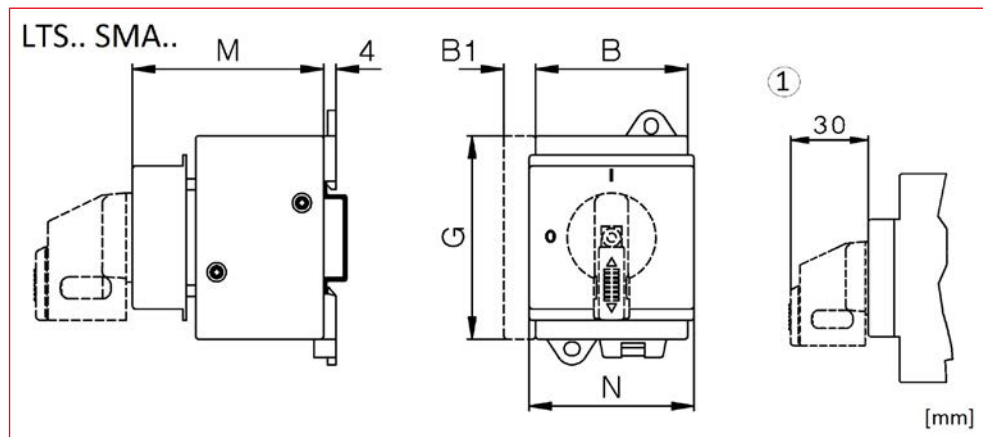


IN8R1322

Schrack-Info

- Handle black/grey
- Amperage: ≤ LTS80: AC21 / 690V
- Amperage: ≥ LTS85: AC21 / 1000V
- Power rating: AC23 / 3x400V
- Protection degree: IP40
- Locking device for max. 2 padlocks

Dimensions

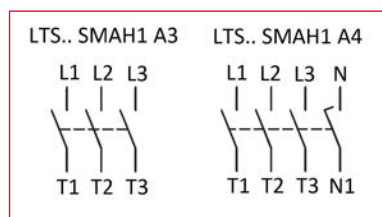


1) locking device SV1 (for 2 padlocks)














Type	3-pole B	4-pole B	B1*	G	M	N
LTS20 - 40	48	48	10	64	60	52
LTS63, 80	48	62.5	10	64	60	52
LTS85-125	78	78	10	85	60	78

*optional or included auxiliary contacts

Wiring Diagram



Series B - Main Switches, Modular, Lockable, IP40

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
3-Pole, Locking Device SV1			
Main switch 3-pole, DIN-rail mounting, 20A, 7.5kW	LTS20 SMAH1 A3		IN8R1322
Main switch 3-pole, DIN-rail mounting, 25A, 10kW	LTS25 SMAH1 A3		IN8R1323
Main switch 3-pole, DIN-rail mounting, 32A, 12.5kW	LTS32 SMAH1 A3		IN8R1324
Main switch 3-pole, DIN-rail mounting, 40A, 16kW	LTS40 SMAH1 A3		IN8R1325
Main switch 3-pole, DIN-rail mounting, 63A, 22kW	LTS63 SMAH1 A3		IN8R1327
Main switch 3-pole, DIN-rail mounting, 80A, 22kW	LTS80 SMAH1 A3		IN8R1328
Main switch 3-pole, DIN-rail mounting, 85A, 30kW	LTS85 SMAH1 A3		IN8R1329
Main switch 3-pole, DIN-rail mounting, 100A, 37kW	LTS100 SMAH1 A3		IN8R132A
Main switch 3-pole, DIN-rail mounting, 125A, 45kW	LTS125 SMAH1 A3		IN8R132B
4-Pole, Locking Device SV1			
Main switch 4-pole, DIN-rail mounting, 20A, 7.5kW	LTS20 SMAH1 A4		IN8R1422
Main switch 4-pole, DIN-rail mounting, 25A, 10kW	LTS25 SMAH1 A4		IN8R1423
Main switch 4-pole, DIN-rail mounting, 32A, 12.5kW	LTS32 SMAH1 A4		IN8R1424
Main switch 4-pole, DIN-rail mounting, 40A, 16kW	LTS40 SMAH1 A4		IN8R1425
Main switch 4-pole, DIN-rail mounting, 63A, 22kW	LTS63 SMAH1 A4		IN8R1427
Main switch 4-pole, DIN-rail mounting, 80A, 22kW	LTS80 SMAH1 A4		IN8R1428



Series B - Accessories for Main and Load Switches



IN809001

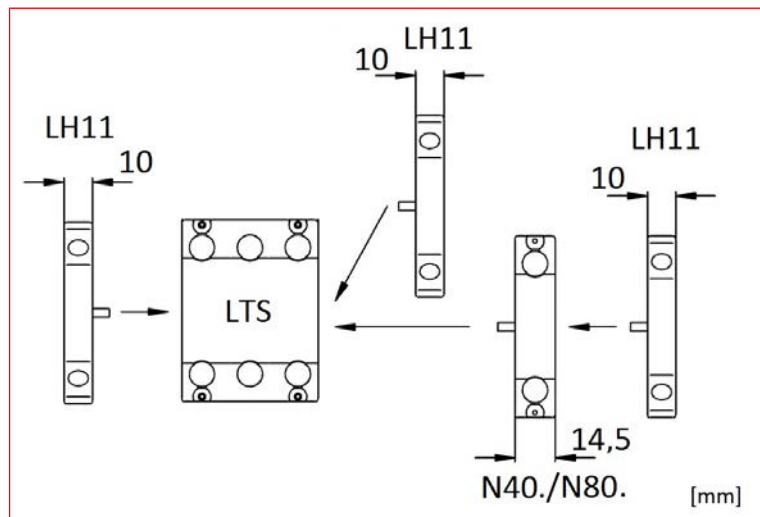


IN809003

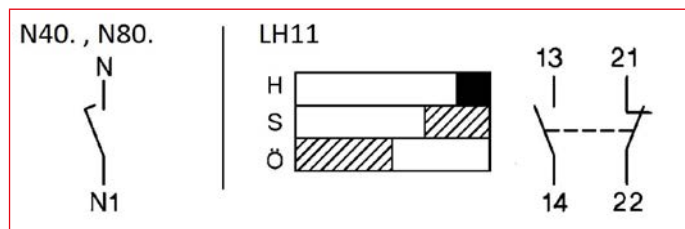
Schrack-Info

- 4th pole (early make) for LTS20 ... LTS80
- 3- or 4-pole terminal cover

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
4th Pole for 3-Pole Switches			
4th pole LTS 20 – LTS 40 mounting	N40E		IN809002
4th pole LTS 63 – LTS 80 mounting	N80E		IN809003
4th pole LTS 20 – LTS 40 DIN-rail mounting/floor mounting	N40V		IN809004
4th pole LTS 63 – LTS 80 DIN-rail mounting/floor mounting	N80V		IN809005
Auxiliary Contact Block 1NO + 1NC			
Auxiliary contact block 1NO+1NC	LH11		IN809001
Terminal Cover 3-Pole			
Terminal cover 3 and 4-pole LTS20-40 DIN-rail mounting/floor mounting	KLAD40		IN809012
Terminal cover 3-pole for LTS20-40 mounting + all LTS63-80	KLAD70		IN809013
Terminal cover 3- and 4-poles for LTS85-125	KLAD125		IN809014
Terminal Cover for 4th Pole			
Terminal cover for 4th pole LTS63/85 for supply side	KLAD70N		IN809015
Terminal cover for 4th pole LTS63/85 for load side	KLAD70NI		IN809016
Terminal Cover 4-Pole			
Terminal cover 3 and 4-pole LTS20-40 DIN-rail mounting/floor mounting	KLAD40		IN809012
Terminal cover 3- and 4-poles for LTS85-125	KLAD125		IN809014

Series B - Main Switches Photovoltaic, Door-Coupling, Base Mounted, Central Fixing, IP66

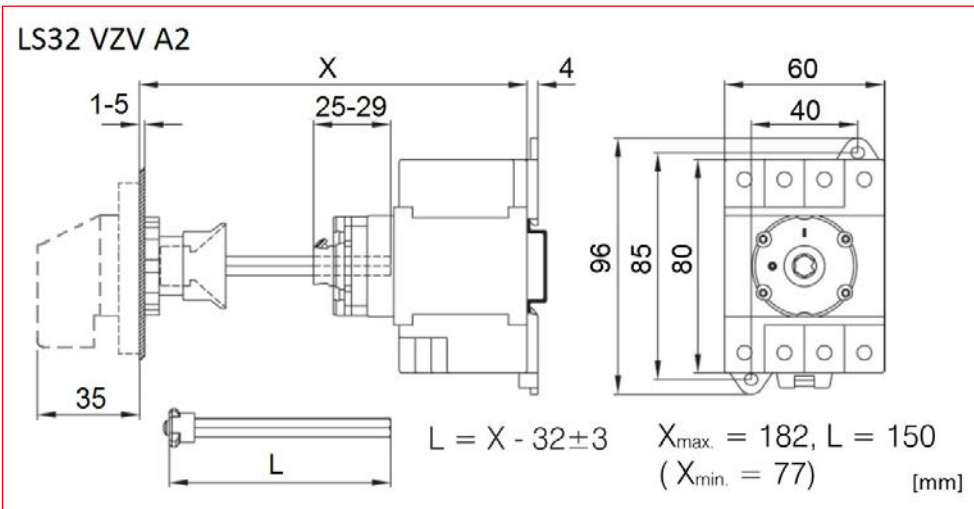


IN7C0204

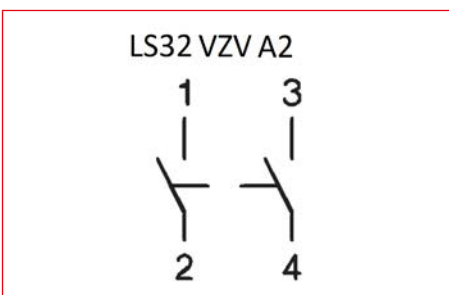
Schrack-Info

- Handle black/grey
- Front plate 64mm / 64mm
- Amperage: DC21B (DCPV1) / 700V
- For use as a DC-load break switch in PV-plants

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Main switch 2-pole, base mounting, 32A, 700VDC	LS32 VZV A2		IN7C0204

Series B - Main, Emergency Stop and Repair Switches

Technical Data According to IEC 947-3, IEC 947-5-1, VDE 0660, EN 60947-3, EN 60947-5-1

Type		LTS20	LTS25	LTS32	LTS40	LTS63	LTS80	LTS85	LTS100	LTS125	
Main contacts											
Thermal rated operational current I_{th}	open	A	20	25	32	40	63	80	85	100	125
Thermal rated operational current I_{the}	enclosed	A	20	25	32	40	63	80	85	100	110
Rated insulation voltage $U_i^{(1)}$		V	690	690	690	690	690	690	1000 ⁽⁵⁾	1000 ⁽⁵⁾	1000 ⁽⁵⁾
Rated operational current I_o AC21A		A	20	25	32	40	63	80	85	100	125
Making capacity I_{eff}	3x380-440V	A	160	190	220	300	370	440	600	725	850
Breaking capacity	3x220-240V	A	160	180	200	250	330	380	480	580	680
	3x380-440V	A	160	180	200	250	330	380	480	580	680
	3x660-690V	A	80	110	140	170	190	220	250	330	420
Separator conditions fulfilled up to		V	690	690	690	690	690	690	1000	1000	1000
Motor switch AC3	3x400V	A	12	16	23	30	37	37	45	60	72
Motor switch AC3	3x220-240V	kW	3	4	5.5	7.5	11	11	15	18,5	22
For operational switching	3x380-440V	kW	5.5	7.5	11	15	18.5	18.5	22	30	37
	3x660-690V	kW	5.5	7.5	11	15	18.5	18.5	22	30	37
Main switch	3x400V	A	16	20	25	32	45	45	60	72	85
Motor switch AC23A	3x220-240V	kW	4	5.5	7.5	9	15	15	18,5	22	30
Main switch AC23B	3x380-440V	kW	7.5	10	12.5	16	22	22	30	37	45
Repair switch	3x660-690V	kW	5.5	7.5	11	15	18.5	18.5	22	30	37
Rated conditional short-circuit current		kA _{eff}	10	10	10	10	10	10	10	10	5
Maximum pre-fuse	gl. (gG)	A	25	35	40	40	63	80	100	100	125
Mechanical lifetime		x10 ⁵	200	200	200	200	100	100	100	100	100
Rated short-time withstand current (1 s-current)		A	250	300	400	500	600	850	1000	1200	1500
Power loss per pole at AC21 = I_{th}											
P/Pol [W]	E, Z		0.322	0.503	0.824	1,288	2,739	4,416	3,851	5,33	8,328
	V, SMA, PF		0.364	0.569	0.933	1,458	2,739	4,416	3,851	5,33	8,328
R/Pol [mOhm]	E, Z		0.805	0.805	0.805	0.805	0.69	0.69	0.533	0.533	0.533
	V, SMA, PF		0.911	0.911	0.911	0.911	0.69	0.69	0.533	0.533	0.533
Permitted ambient temperature											
Operation	open		-40°C up to +60°C								
	enclosed		-40°C up to +40°C								
Warehousing			-50°C up to +90°C								
Conductor cross-sections											
Solid or stranded	mm ²	0.5 - 10	1 - 25 ⁽⁶⁾	4-50	max.95						
	AWG	20 - 8 (10)				16 - 3 (10)		10 - 0 (10)			
Finely stranded	mm ²	0.5 - 6				4 - 16 ⁽⁶⁾		10 - 35			
	AWG	20 - 10				16 - 6		8 - 2			
Finely stranded with end sleeve	mm ²	0.5 - 6				0.75 - 16 ⁽⁶⁾		12936			
	AWG	20 - 10				16 - 6		8 - 2			
Terminal screw		M3,5				M5		M6			
Tightening torque	Nm	0.8 - 1.4				2.5 - 4		3.5 - 4.5			
Auxiliary contacts											
Rated insulation voltage $U^{(1)}$		V	690				690		690		
Thermal rated operational current I_{th} , I_{the}		A	10				10		10		
Switching capacity	AC15 220-240V	A	2.5				2.5		2.5		
	AC15 380-440V	A	1.5				1.5		1.5		
Rated conditional short-circuit current		kA _{eff}	3				3		3		
Maximum pre-fuse	gl. (gG)	A	10				10		10		
Conductor cross-sections	mm ²	0.75 - 2.5				0.75 - 2.5		0.75 - 2.5			
Solid or stranded	AWG	14 - 12				14 - 12		14 - 12			
Finely stranded (+ end sleeve)	mm ²	0.75 - 2.5 (1.5)				0.75 - 2.5 (1.5)		0.75 - 2.5 (1.5)			
	AWG	18 - 14				18 - 14		18 - 14			

1) Applies to: networks with earthed neutral point, overvoltage category I up to III, degree of pollution 3 (standard-Industry): $U_{mp} = 6kV$. Values for other conditions on request.

3) At voltages above 690V ~ only switching without load (AC20A)

5) $U_{mp} = 8kV$

6) LTS63..U. stranded 16mm², finely stranded 10mm²

Technical Data According to UL and cUL

Type		LTS20	LTS25	LTS32	LTS40	LTS63	LTS80	LTS85	LTS100	LTS125	
Rated operational voltage	V	600	600	600	600	600	600	600	600	600	
Ampere-Rating "General use"	A	20	25	32	40	63	80	85	100	125	
DOL-Rating 3-phase	110-120V	HP	1	1,5	2	2	3	5	7,5	10	15
	220-240V	HP	3	5	5	5	10	10	20	25	30
	440-480V	HP	7,5	10	10	10	20	20	40	50	60
	550-600V	HP	10	10	15	15	25	25	50	60	60
DOL-Rating 1-phase	110-120V	HP	1	1	1	1	2	3	5	7,5	
	200-208V	HP	1	2	2	2	3	3	7,5	10	10
	220-240V	HP	2	2	3	3	5	5	10	15	15
Fuse size (RK5)	Manual Motor Controller	A	40	50	50	70	90	110	125	125	125
5kA / 600V	Motor Disconnect	A	40	50	50	50	70	70	125	125	125
Tightening torque	Nm	1.7-2.3	1.7-2.3	1.7-2.3	1.7-2.3	2.8-4	2.8-4	1.7-4.5	1.7-4.5	1.7-4.5	
	lb.inch	11-20	11-20	11-20	11-20	24-35	24-35	15-40	15-40	15-40	

4) Fuse RK1 / 10kA / 600V

Series B - Main Switches Photovoltaic

Technical Data According to IEC 60947-3, VDE 0660, GB14048.3

Main contacts			Type	LS32
Thermal rated operational current I_{th}			A	32
Rated insulation voltage U_i ¹⁾			V	1000
Rated insulation voltage U_i ²⁾			V	1500
Contact clearance (pro pole)			mm	8
Rated operational current I_e AC21B				
DC21A and DC21B				
L/R = 1 ms	2 poles in series	500V	A	32
		A2	A	32
	A2	600V	A	32
		700V	A	27
		800V	A	23
		850V	A	25 (only DC21B)
		900V	A	20
		1000V	A	13
		1200V	A	10
1500V	A	5		
Rated operational current I_e AC21B				
A2	U _e max. 440V		A	32
Rated operational current I_e DC22B				
L/R = 2.5 ms	2 poles in series	500V	A	9
		A2	A	6,5
	A2	800V	A	3
		1000V	A	2
		1200V	A	-
		1500V	A	-
Rated conditional short-circuit current				
Maximum pre-fuse		gL (gG)	kA _{eff}	5
			A	80
Mechanical lifetime			x10 ³	
Rated short-time withstand current(1 s)			I _{cw}	A
Rated short-circuit making capacity			I _{cm}	A
Conductor cross-sections (including connector)				
Solid or stranded			mm ²	LSV-B1
Finely stranded			mm ²	4 - 16
Finely stranded (+ end sleeve)			mm ²	4 - 10
Terminal screw				M4 Pz2
Tightening torque			Nm	1.7 - 1.8
2 Conductor per terminal without connector LSV-B1 / LSV-B2				
Solid or stranded			mm ²	16+(1.5-2.5) / 10+(1.5-6) / 6+(1.5-10) / 4+(1.5-10)
Finely stranded / finely stranded + end sleeve			mm ²	16+(1.5-2.5) / 10+(1.5-4) / 6+(1.5-6)
Stranded			AWG	8+(16-12) / 10+(16-10) / 12+(16-8) 14+(16-8)
Solid			AWG	10+(16-12) / 12+(16-10) 14+(16-10)
Permitted ambient temperature				
Operation		open	°C	-40 up to +65
		enclosed	°C	-40 up to +45
Warehousing			°C	-50 up to +90
Power loss per switch at I_e max. DC21B/AC21B				3

1) Applies to: overvoltage category I up to III, degree of pollution 3 (Norm-Industry): U_{imp} = 8kV.

2) Applies to: overvoltage category I up to III, degree of pollution 2 (min. IP55): U_{imp} = 8kV.

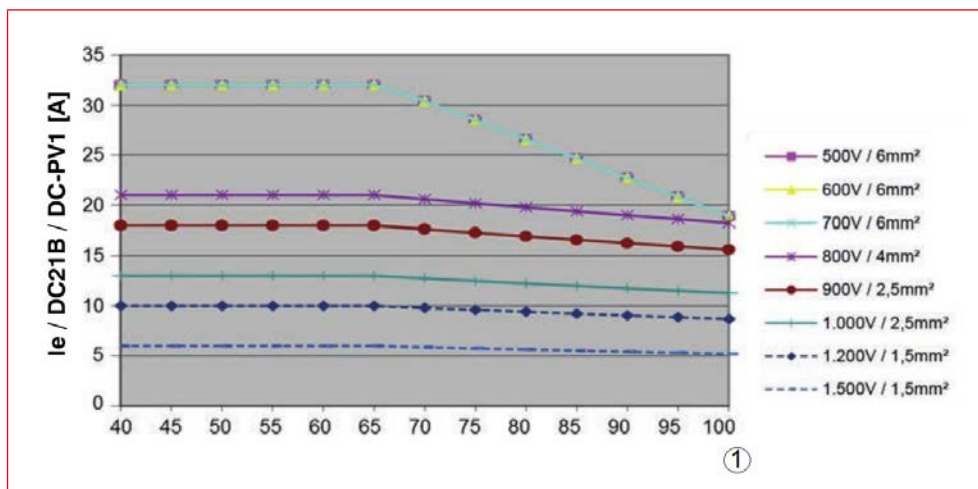
Series B - Main Switches Photovoltaic

Technical Data According to UL508I file E359344 Category No.: NMSJ, and UL508 File E332938, Category no.: NRNT2, NRNT8

Type			LS32
Ampere-Rating "General use"			
2 Pole in Serie	350V	A	25
A2	500V	A	25
	600V	A	25
Fuse size (RK5) industrial control switch			
5kA / 600V	A		80
Conductor cross-sections (included connector LSV-B1)			
Solid or stranded	AWG		12 - 10
Finely stranded	AWG		12 - 6
Finely stranded (+ end sleeve)	AWG		12 - 6
Terminal screw			M4 Pz2
Tightening torque	lb.inch		11 - 16
Protection degree of connection terminals ¹⁾			IP20

1) Protection degree of connection terminals with connected, insulated conductor

Maximum Permissible Current, Depending on Ambient Temperature and Connection Cross Sections



1) Ambient temperature at the switch (°C)

Series KN - Main, Emergency Stop and Repair Switches

Technical Data According to IEC 947-3, IEC 947-5-1, VDE 0660, EN 60947-3, EN 60947-5-1

The switches described in this chapter comply with the regulations IEC 60947-3, EN 60947-3, VDE 0660 part 107, IEC 60204, EN 60204 and VDE 0113. They thus meet all the requirements for disconnectors, load-break switches, main switches and repair switches.

Rated data			Type	KG10 KG10A	KG20 KG20A KG20B	KG32 KG32A KG32B	KG41 KG41B	KG64 KG64B	KG80	KG100	KG125	KG160	KG250
Insulation voltage U_i	IEC/VDE ¹⁾	Isolator conditions ¹⁾	V	690	690	690	690	690	690	690	1000 ²⁾	1000 ²⁾	1000 ²⁾
	USA/Canada		V	300	600	600	600	600	600	600	600	600	600
	CEE/NEMKO		V	400	500	500	500	500	500	500	-	-	-
Impulse withstand voltage U_{imp} ¹⁾			kV	4	6	6	6	6	6	6	8	8	8
Uninterrupted current	IEC/VDE	I_n open = I_n , I_n Enclosed	A	20	25	32	40	63	80	100	125	160	250
			A	20	25	32	40	63	80	100	125	160	250
	USA/Canada	ON/OFF function	A	20	25	32	40	60	80 ³⁾	100 ³⁾	150 ³⁾	200 ³⁾	250 ³⁾
Breaking capacity	3-phase, 3-pole	220V/240V 380V/440V 660V/690V	A	20	25	32	40	60	80 ³⁾	100 ³⁾	125 ³⁾	160 ³⁾	-
			A	120	180	220	300	350	560	700	800	900	1600
			A	120	180	220	300	350	560	650	750	850	1380
AC-21A	IEC/VDE	circuit breaker operational current I_n	1-phase, 2-pole	A	120								
			A	20	25	32	40	63	80	100	125	160	250
Rated switching capacity													
Motor switch for operational switching													
AC-3	3-phase, 3-pole	220V/240V	kW	2,2	4	5,5	7,5	11	15	18,5	22	30	37
		380V/440V	kW	3,7	5,5	7,5	11	18,5	22	30	37	45	55
	500V	kW	3,7	5,5	7,5	15	22	30	37	45	55	75	
	690V	kW	3,7	5,5	7,5	11	15	18,5	22	30	37	40	
	1-phase, 2-pole	220V/240V 380V/440V	kW	1,1 1,5	- -	- -	- -	- -	- -	- -	- -	- -	- -
Motor switch, main switch, repair switch													
AC-23A, AC-23B	3-phase, 3-pole	220V/240V	kW	3	5,5	5,5	7,5	11	18,5	22	30	30	37
		380V/440V	kW	5,5	7,5	11	15	22	30	37	45	55	90
	500V	kW	5,5	7,5	11	18,5	30	37	45	55	75	110	
	690V	kW	5,5	7,5	11	15	18,5	22	30	37	37	45	
	1-phase, 2-pole	220V/240V 380V/440V	kW	1,5 2,2	- -	- -	- -	- -	- -	- -	- -	- -	- -
Power loss per pole at I_n			W	0,9	0,7	1,1	1	2,2	1,7	2,4	3,1	5	8
Vibration resistance ⁷⁾			C	A	A	A	A	A	A	A	C	C	C
Shock resistance ⁷⁾			C	B	B	B	B	B	B	B	C	C	C
Short-circuit resistance													
Maximum pre-fuse (gL-characteristic)			A	20	35	35	50	63	80	100	125	160	250
Rated short-time withstand [1 s current]			A	130	350	430	500	580	1600	1850	2500	3000	4600
Max. conductor cross-sections (use only copper conductors)													
Solid or stranded			mm ²	2,5	6	6	16	16	50	50	95	95	185
			AWG	12	10	10	6	6	1/0	1/1	3/0	3/1	-
			MCM	-	-	-	-	-	-	-	-	-	350
Finely stranded without end sleeve			mm ²	2,5	4	4	10	10	35	35	70	70	150
			AWG	12	10	10	6	6	2	2	2/0	2/0	-
			MCM	-	-	-	-	-	-	-	-	-	300
Finely stranded with end sleeve DIN 46228			mm ²	2,5	4	4	10	10	35	35	70	70	120
Connection with	terminal screw		mm	-	-	-	-	-	-	-	M10x20	M10x20	M12x20
Cable lug or busbar	max. width		mm	-	-	-	-	-	-	-	20	20	25
	max. width with terminal cover		mm	-	-	-	-	-	-	-	25	25	34

1) Applies to: networks with earthed neutral point, overvoltage category, overvoltage category III, degree of pollution 3. Values for other conditions on request.

2) At voltages above 690V ~ only switching without load (AC20A)

3) Valid for connection with wires at 75 °C.

5) The values after the forward slash apply to six-pole and multi-pole switches.

6) Storage temperature: -40 °C up to 85 °C (at temperatures below -5 °C is no surge load permissible).

7) A: min. 4g, 2-100Hz, 1,6mm. B: min. 6g, 6ms. C: on request

9) Connection with cable lug

Series KN - Main, Emergency Stop and Repair Switches

Electrical Data

The switches described in this chapter comply with the regulations IEC 60947-3, EN 60947-3, VDE 0660 part 107, IEC 60204, EN 60204 and VDE 0113. They thus meet all the requirements for disconnectors, load-break switches, main switches and repair switches.

Electrical data			KG10	KG20	KG32	KG41	KG64	KG80	KG100	KG160	KG250
			KG10A	KG20A KG20B	KG32A KG32B	KG41B	KG64B				
Type											
Rated data											
Insulation voltage U_i	IEC/VDE	V	690	500				690			
	USA/Canada	V	300	600				600			
Impulse withstand voltage U_{imp} ¹⁾		kV	4	6				6			
Uninterrupted current	IEC/VDE	I_o open = I_h	A	20	10			16			
	USA/Canada	I_{he} enclosed	A	20	10			10			
AC-21A	IEC/VDE	switching of resistive load with low overload	A	20	10			16			
AC-15	IEC/VDE	220V/240V	A	6	2.5			6			
	Betriebsstrom I_e	380V/440V	A	4	1.5			3			
		500V	A	-	1			1.5			
Pilot Duty Heavy	USA/Canada		A300	A600			A600				
Ampere Rating	USA/Canada	A	20 ⁸⁾	10			10				
Short-circuit resistance (maximum pre-fuse [gL-characteristic] rated short-time withstand current [1s current])											
Maximum pre-fuse (gL-characteristic)			A	20	10			16			
Max. conductor cross-section (use only copper conductors)											
Solid or stranded		mm ²	2.5	1.5			2.5				
		AWG	12	14			12				
Finely stranded without end sleeve		mm ²	2.5	1.5			2.5				
		AWG	12	16			14				
Finely stranded with end sleeve acc. to DIN 46228			mm ²	2.5	1		2.5				
Ambient temperature for switches and auxiliary contacts⁶⁾											
open at 100% I_o / I_h			50 °C over 24 hours with peak up to 55 °C								
enclosed at 100% I_{he}			35 °C over 24 hours with peak up to 40 °C								

1) Applies to: networks with earthed neutral point, overvoltage category III, degree of pollution 3. Values for other conditions on request.

2) Storage temperature: -40 °C up to 85 °C

8) Max. 277V

Series B - Cam Switches,
On-Off Switches with Key



Series B - Cam Switches,
Voltmeter-Selector Switches



Series B - Cam Switches,
Change over Switches



Series B - Cam Switches,
Heating emergency



Series B - Mini Cam Switches,
Change over Switches



Series B - Mini Cam Switches,
Gang Switches



Cam Switches

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Series B - Cam Switches, On-Off Switches, 4 Hole Panel Mounting, IP65 (IP40)

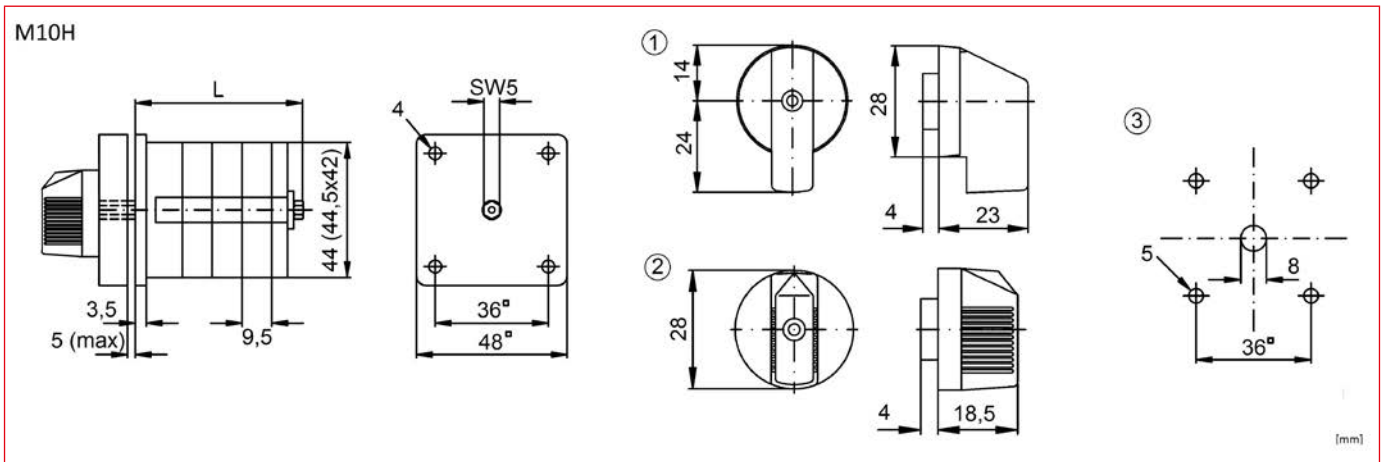


IN005120

Schrack-Info

- Instrument handle black or toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

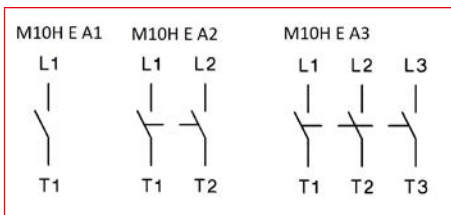
Dimensions



- 1) instrument handle
2) toggle handle
3) drilling plan

Type	number of cells	L
M10H E A1, M10H E A2	1	36.5
M10H E A3	2	46

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Off-switch 1-pole/instrument handle black/20A/0-1	M10H E A1		IN0E0102B
Off-switch 3-pole/instrument handle black/20A/0-1	M10H E A3		IN0E0302B
Off-switch 1-pole/toggle handle blue/20A/0-1	M10H E A1		IN005120
Off-switch 2-pole/toggle handle blue/20A/0-1	M10H E A2		IN005220
Off-switch 3-pole/toggle handle blue/20A/0-1	M10H E A3		IN005320
Off-switch 1-pole/toggle handle blue/20A/OFF-ON	M10H E A1		IN005121

Series B - Cam Switches, On-Off Switches with Key, 4 Hole Panel Mounting, IP65 (IP40)

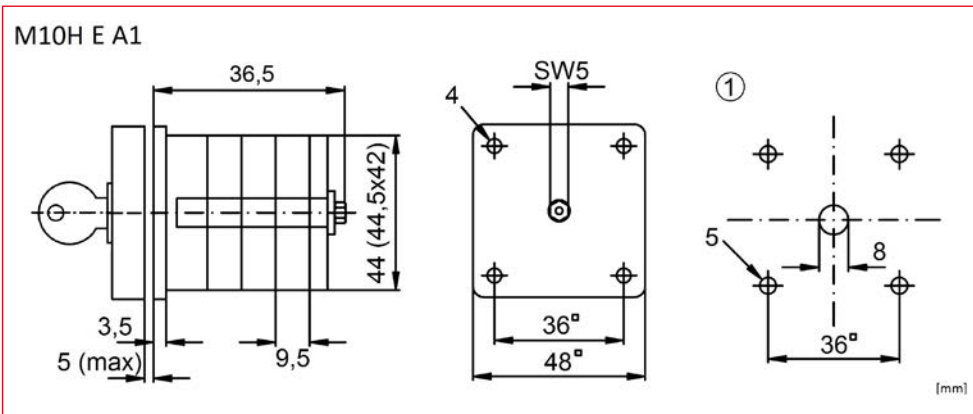


IN005122

Schrack-Info

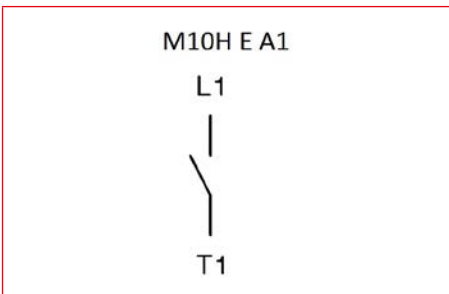
- Including Ronis 455 key, removable in all positions
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
On-Off switch with key 1-pole/20A/0-1	M10H E A1		IN005122

Series B - Cam Switches, Changeover Switches with 0 Position, 4 Hole Panel Mounting, IP65



IN0E31F2B

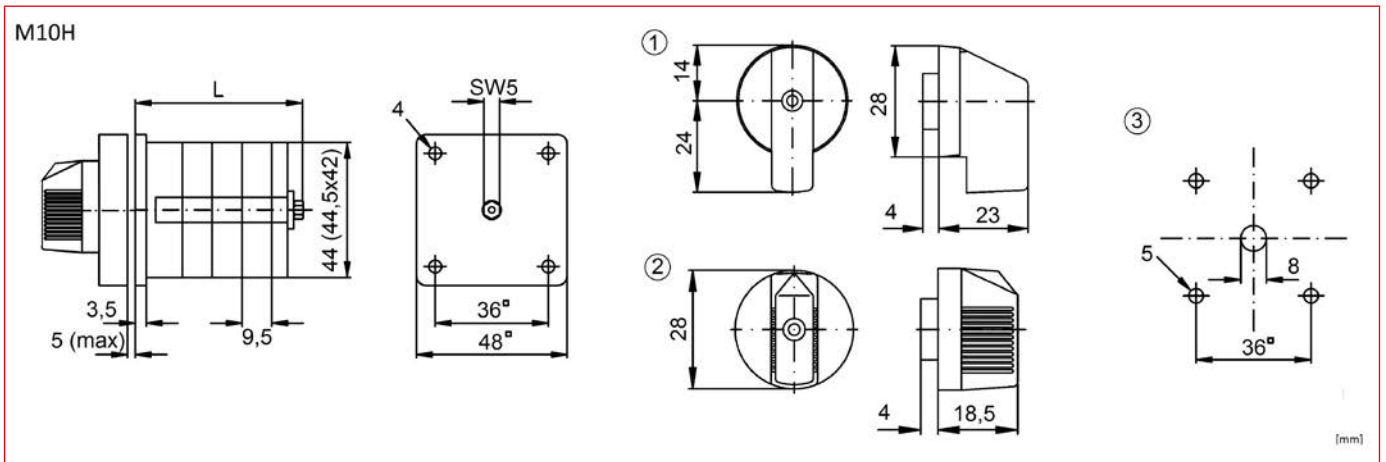


IN006120

Schrack-Info

- Instrument handle black or toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

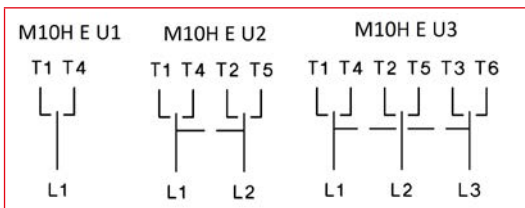
Dimensions



- 1) instrument handle
2) toggle handle
3) drilling plan

Type	number of cells	L
M10H E U1	1	36.5
M10H E U2	2	46
M10H E U3	3	55.5

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/instrument handle black/20A/HAND-0-AUTO	M10H E U1		IN0E31F2B
Changeover switch 2-pole/instrument handle black/20A/HAND-0-AUTO	M10H E U2		IN0E32F2B
Changeover switch 3-pole/instrument handle black/20A/HAND-0-AUTO	M10H E U3		IN0E3302B
Changeover switch 1-pole/toggle handle blue/20A/1-0-2	M10H E U1		IN006120
Changeover switch 2-pole/toggle handle blue/20A/1-0-2	M10H E U2		IN006220
Changeover switch 3-pole/toggle handle blue/20A/1-0-2	M10H E U3		IN006320
Changeover switch 1-pole/toggle handle blue/20A/MAN-0-AUTO	M10H E U1		IN006121
Changeover switch 1-pole/toggle handle blue/20A/HAND-0-AUTO	M10H E U1		IN006122
Changeover switch 2-pole/toggle handle blue/20A/MAN-0-AUTO	M10H E U2		IN006221

Series B - Cam Switches, Changeover Switches without 0 Position, 4 Hole Panel Mounting, IP65

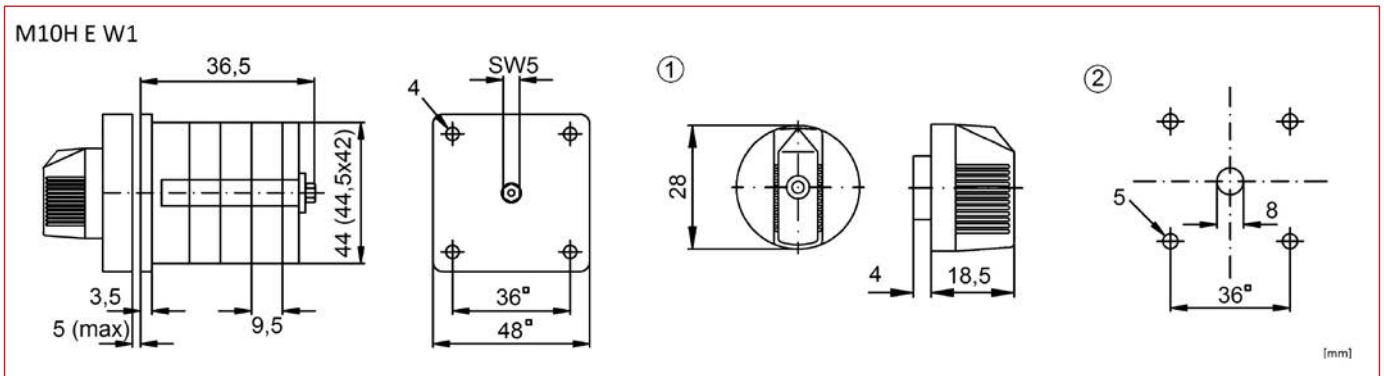


IN007122

Schrack-Info

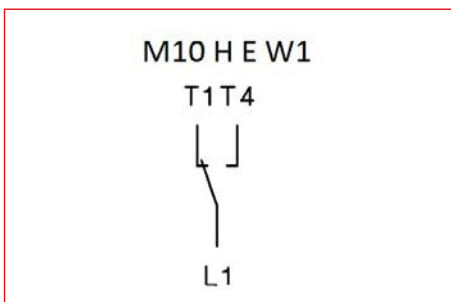
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions



- 1) toggle handle
2) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/20A/1-2	M10H E W1		IN007122
Changeover switch 1-pole/20A/MAN-AUTO	M10H E W1		IN007121

Series B - Cam Switches, Changeover Switches, Momentary, 4 Hole Panel Mounting, IP65

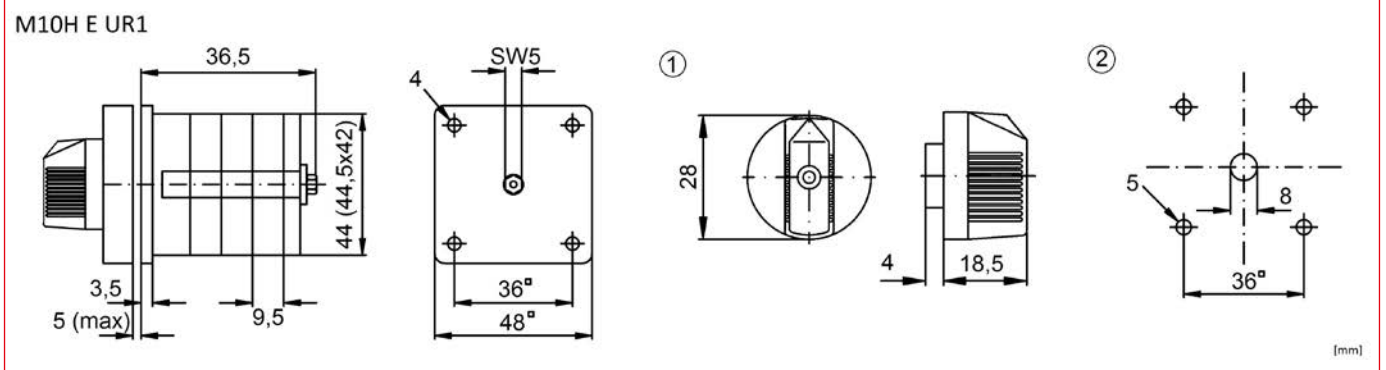


IN004120

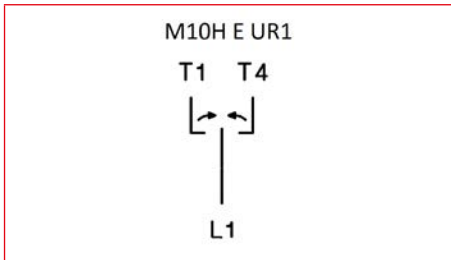
Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch momentary 1-pole/20A/1-0-2	M10H E UR1		IN004120

Series B - Cam Switches, Start Stop Switches, 4 Hole Panel Mounting, IP65

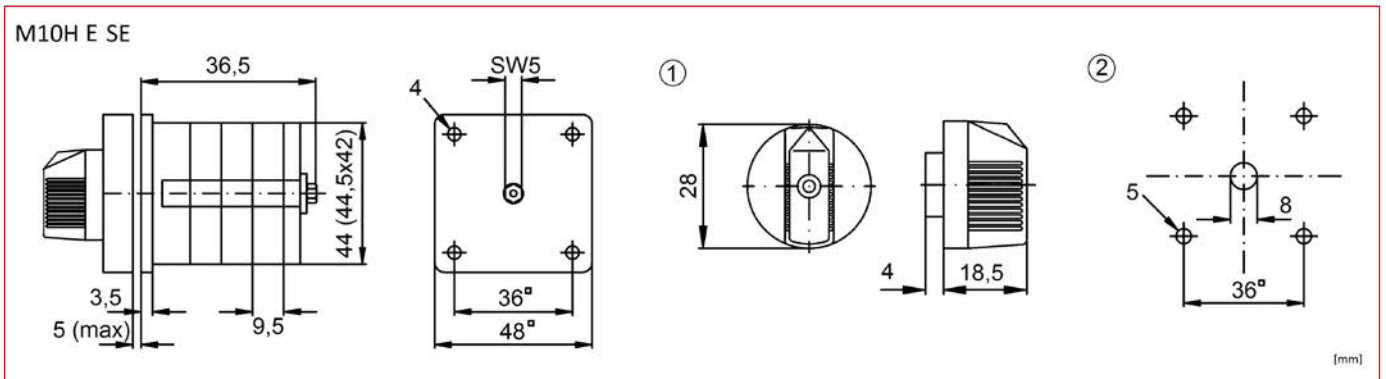


IN008120

Schrack-Info

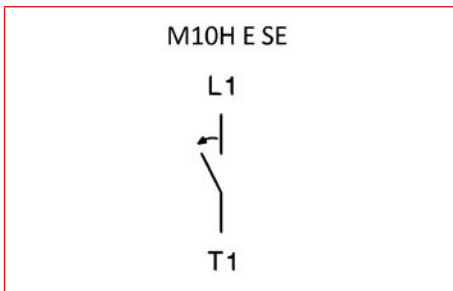
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions



- 1) toggle handle
2) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Switch momentary 1-pole/20A/START	M10H E SE		IN008120

Series B - Cam Switches, Step Selector Switches without 0 Position, 4 Hole Panel Mounting



IN003121

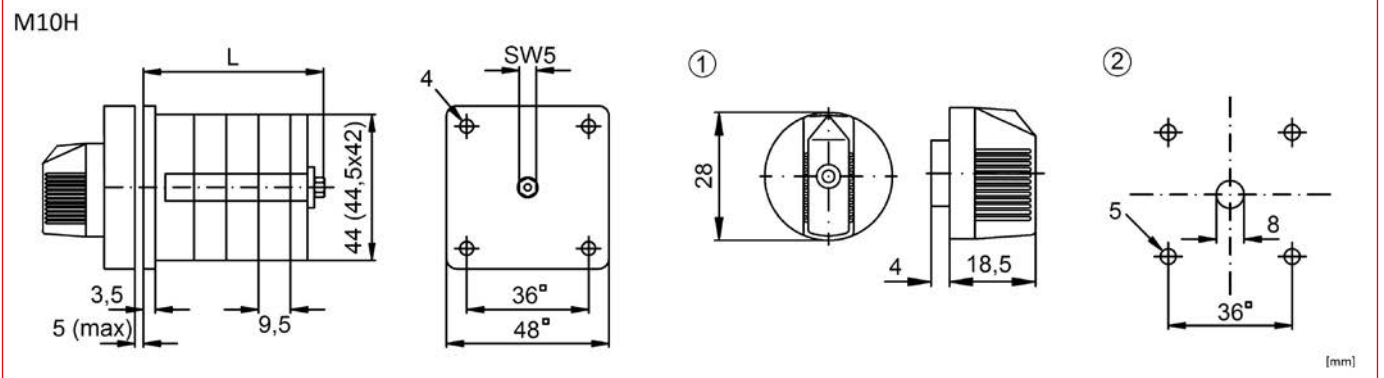


IN003122

Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

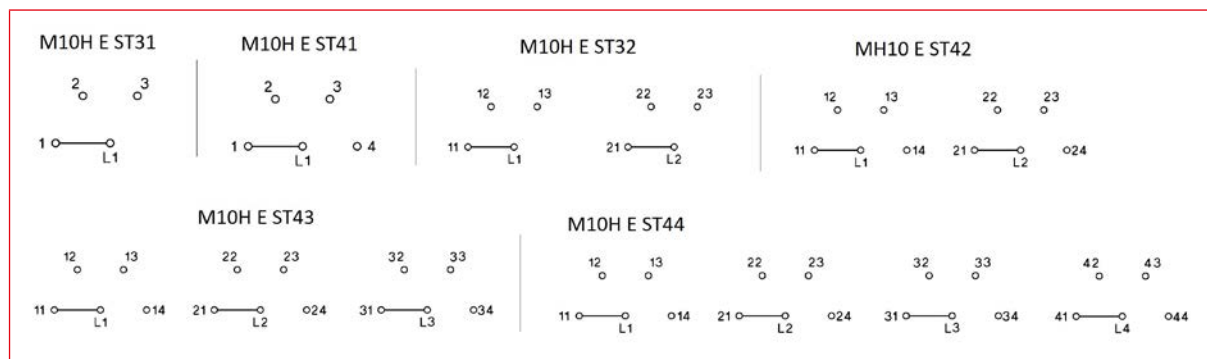
Dimensions



- 1) toggle handle
2) drilling plan

Type	number of cells	L
M10H E ST31, M10H E ST41	2	46
M10H E ST32	3	55.5
M10H E ST42	4	65
M10H E ST43	6	84
M10H E ST44	8	103

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Step switch 1-pole, 3 positions/20A/1-2-3	M10H E ST31		IN003121
Step switch 1-pole, 4 positions/20A/1-2-3-4	M10H E ST41		IN003122
Step switch 2-pole, 3 positions/20A/1-2-3	M10H E ST32		IN003123
Step switch 2-pole, 4 positions/20A/1-2-3-4	M10H E ST42		IN003124
Step switch 3-pole, 4 positions/20A/1-2-3-4	M10H E ST43		IN003125
Step switch 4-pole, 4 positions/20A/1-2-3-4	M10H E ST44		IN003126

Series B - Cam Switches, Star Delta switch, 4 Hole Panel Mounting, IP65

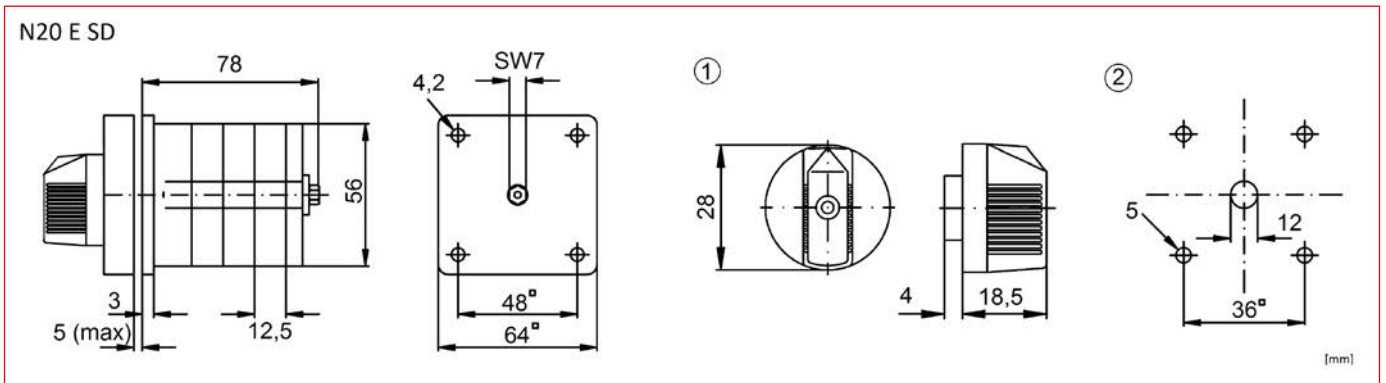


IN108900

Schrack-Info

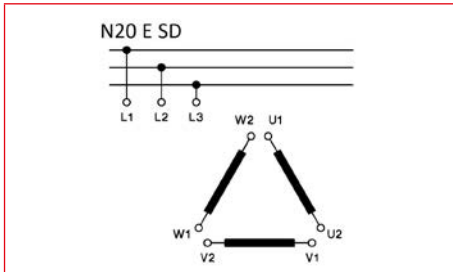
- Toggle handle blue
- Amperage: AC21 / 690V
- Power rating: AC23 / 3x400V
- Protection degree frontside: IP65
- Protection degree switch: IP40
- For starting motors up to 11kW

Dimensions



- 1) toggle handle
- 2) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Star delta switch, AC21 32A/AC3 11kW/0-Y-D	N20 E SD		IN108900

Series B - Cam Switches, Voltmeter Selector Switches, 4 Hole Panel Mounting, IP65

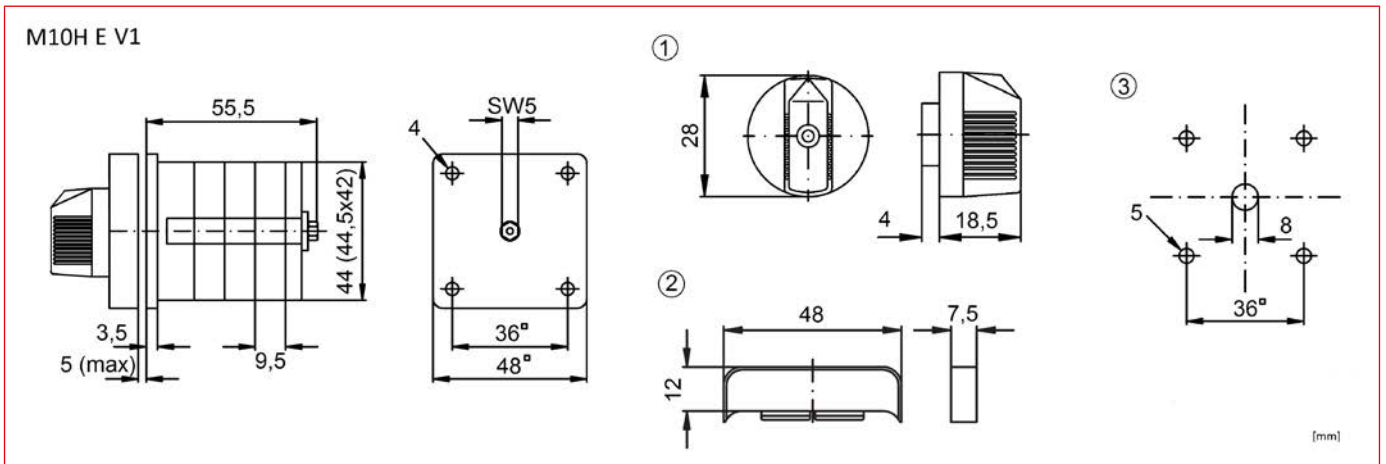


IN009V00

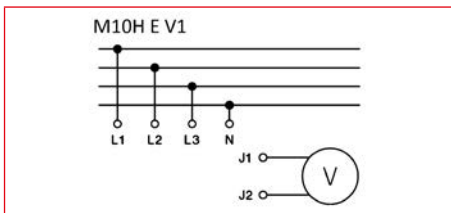
Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40
- 3 phase-to-phase, 3 phase voltages
- Including label with text

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Voltmeter changeover switch, 3 phase to phase + 3 phase to neutral/20A	M10H E V1		IN009V00

Series B - Cam Switches, A-meter Selector Switches, 4 Hole Panel Mounting, IP65

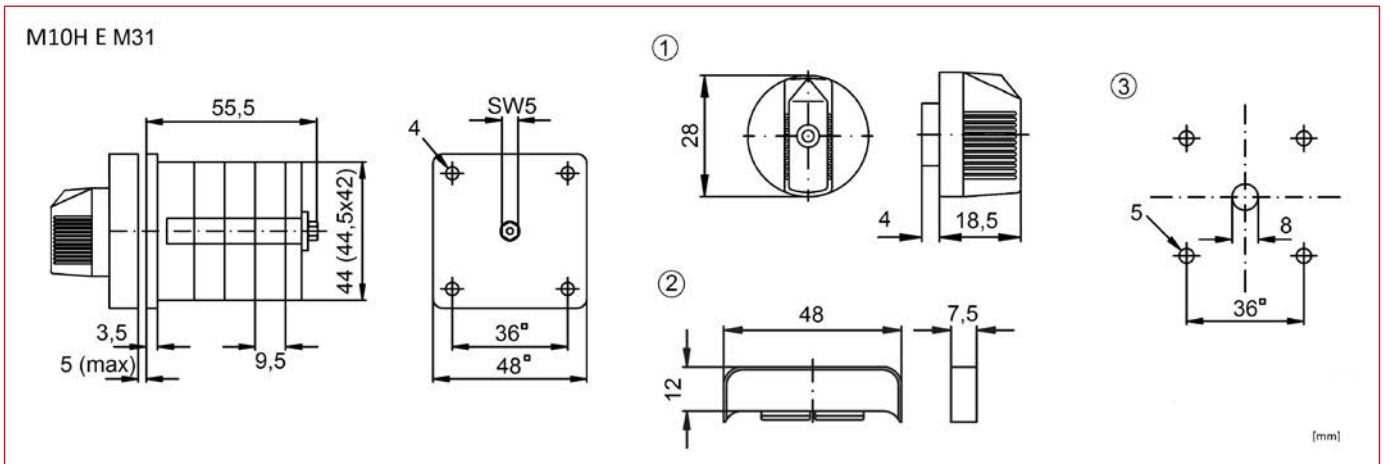


IN009A00

Schrack-Info

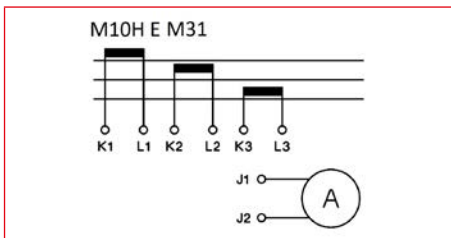
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40
- 3 current transformers
- Including label with text

Dimensions



- 1) toggle handle
- 2) additional plate
- 3) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Amperemeter changeover switch 1-pole, 3 current transformers/20A/0-1-2-3	M10H E M31		IN009A00

Series B - Cam Switches, On-Off Switches, Central Fixing D=22mm, IP65

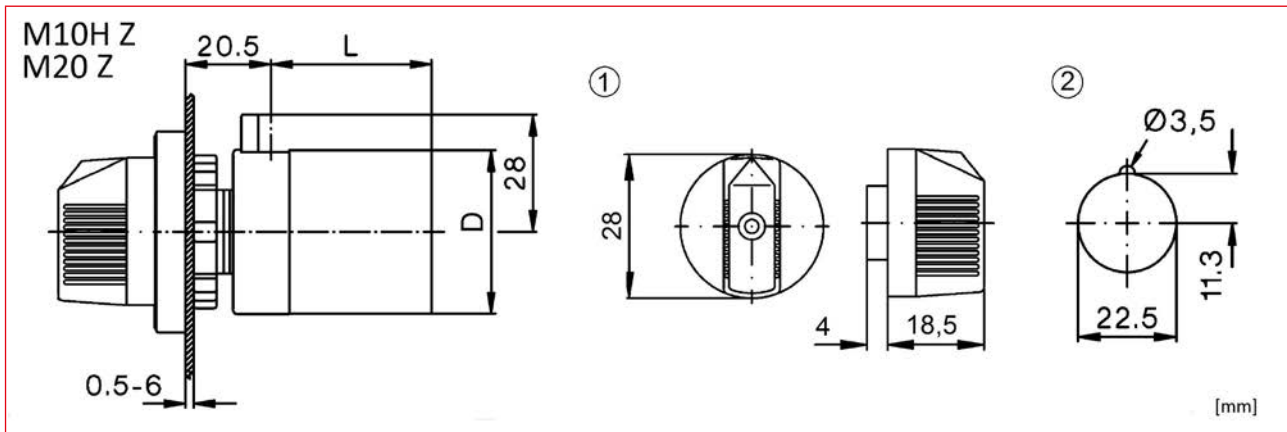


IN025120

Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

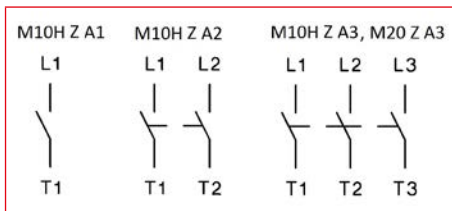
Dimensions



- 1) toggle handle
2) drilling plan

Type	number of cells	L	D
M10H Z A1, M10H Z A2	1	36.5	44 (44.5 x 42)
M10H Z A3	2	46	44 (44.5 x 42)
M20 Z A3	2	51	56

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Off-switch 1-pole/20A/0-1	M10H Z A1		IN025120
Off-switch 2-pole/20A/0-1	M10H Z A2		IN025220
Off-switch 3-pole/20A/0-1	M10H Z A3		IN025320
Off-switch 3-pole/32A/0-1	M20 Z A3		IN125325

Series B - Cam Switches, Changeover Switches with 0 Position, Central Fixing D=22mm, IP65

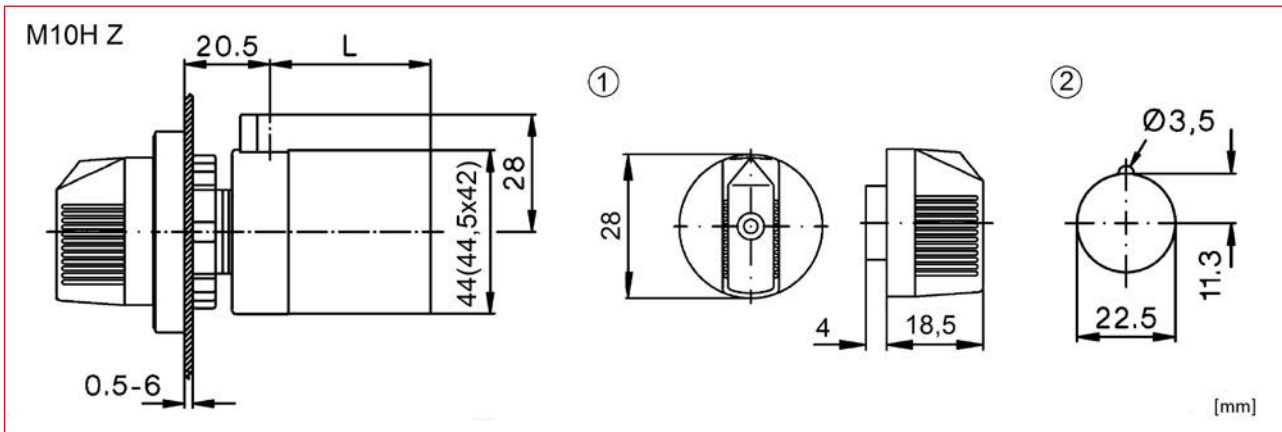


IN026120

Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

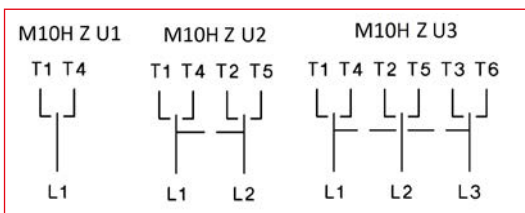
Dimensions



- 1) toggle handle
2) drilling plan

Type	number of cells	L
M10H Z U1	1	36.5
M10H Z U2	2	46
M10H Z U3	3	55.5

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/20A/1-0-2	M10H Z U1		IN026120
Changeover switch 2-pole/20A/1-0-2	M10H Z U2		IN026220
Changeover switch 3-pole/20A/1-0-2	M10H Z U3		IN026320

Series B - Cam Switches, Changeover Switches without 0 Position, Central Fixing D=22mm, IP65

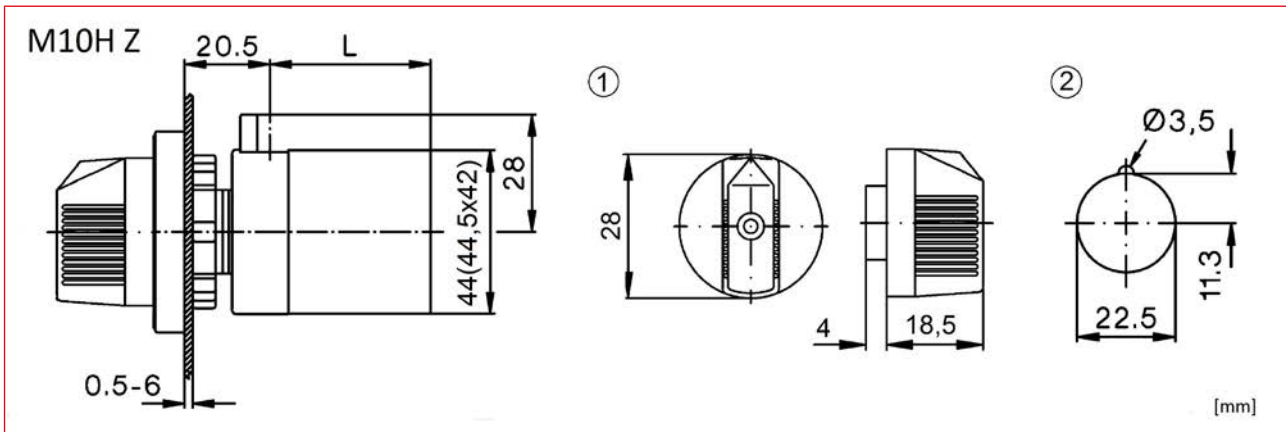


IN027120

Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions

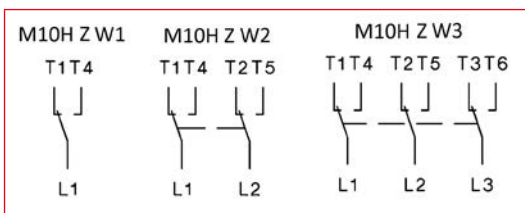


1) toggle handle

2) drilling plan

Type	number of cells	L
M10H Z W1	1	36.5
M10H Z W2	2	46
M10H Z W3	3	55.5

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/20A/1-2	M10H Z W1		IN027120
Changeover switch 2-pole/20A/1-2	M10H Z W2		IN027220
Changeover switch 3-pole/20A/1-2	M10H Z W3		IN027320

Series B - Cam Switches, Start Stop Switches, Central Fixing D=22mm, IP65

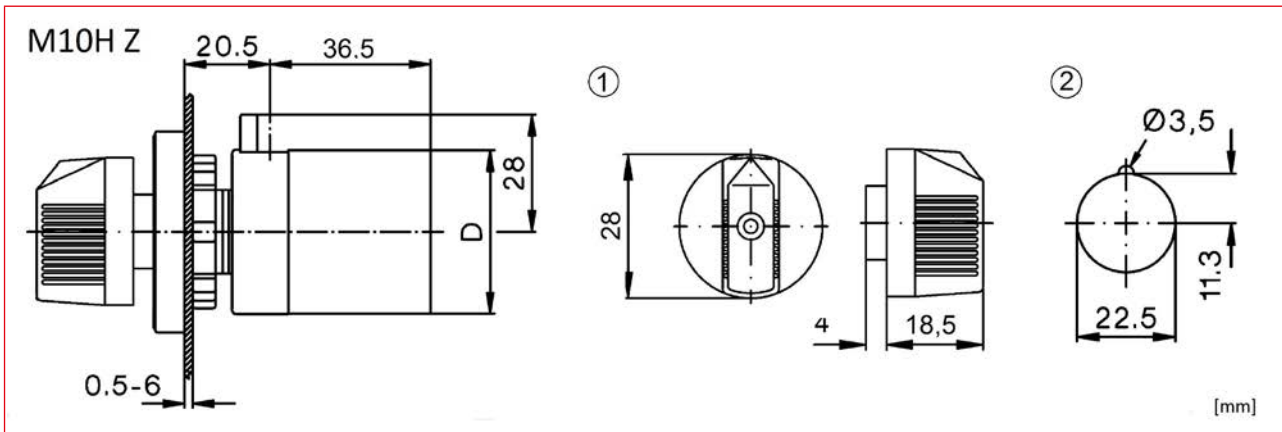


IN0ZC102

Schrack-Info

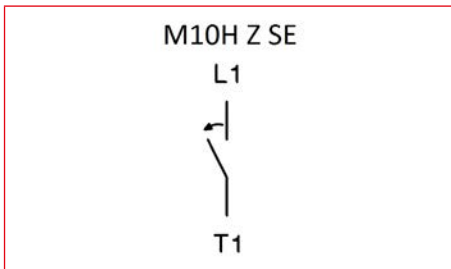
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions



- 1) toggle handle
- 2) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Switch momentary, 1-pole/20A/START	M10H Z SE014S		IN0ZC102

Series B - Cam Switches, Step Selector Switches with 0 Position, Central Fixing D=22mm, IP65

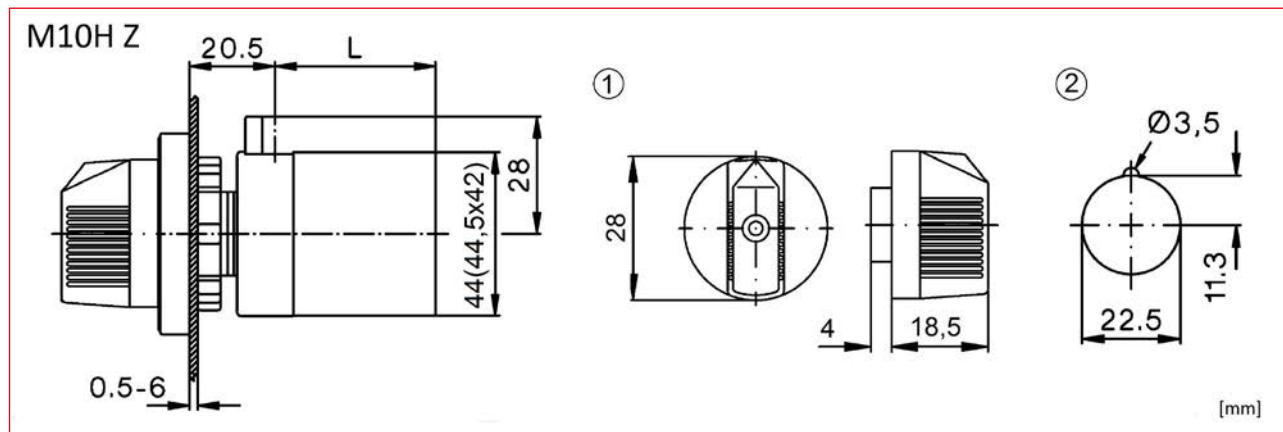


IN023903

Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

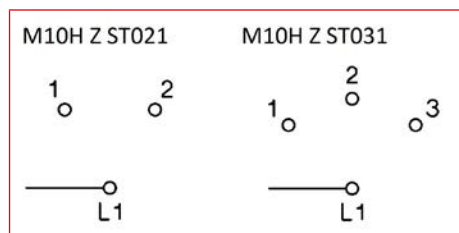
Dimensions



- 1) toggle handle
2) drilling plan

Type	number of cells	L
M10H Z ST021	1	36.5
M10H Z ST031	2	46

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Step switch 1-pole, 2 positions/20A/0-1-2	M10H Z ST021		IN023904
Step switch 1-pole, 3 positions/20A/0-1-2-3	M10H Z ST031		IN023903

Series B - Cam Switches, Step Selector Switches without 0 Position, Central Fixing D=22mm, IP65

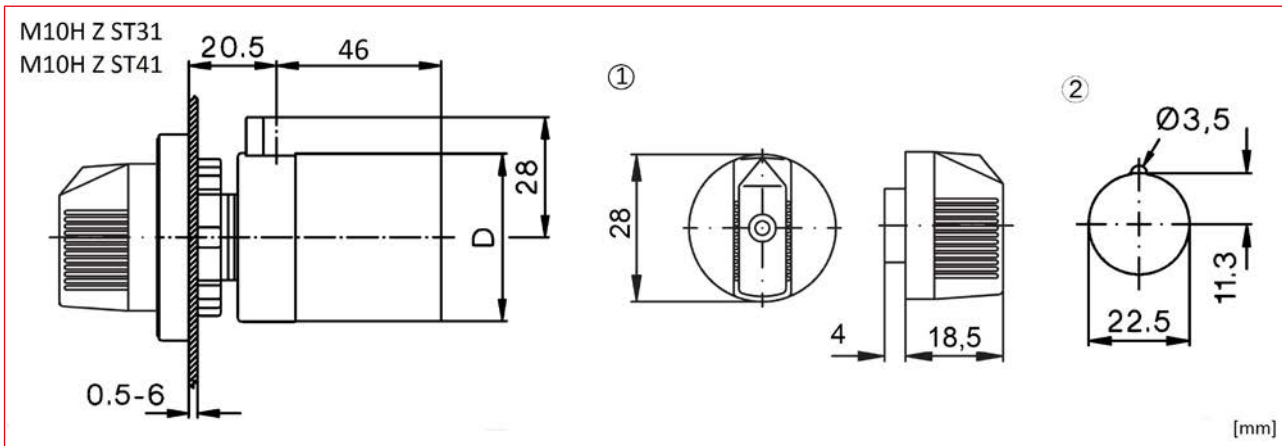


IN023902

Schrack-Info

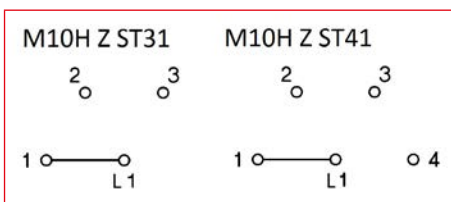
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions



- 1) toggle handle
2) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Step switch 1-pole, 3 positions/20A/1-2-3	M10H Z ST31		IN023901
Step switch 1-pole, 4 positions/20A/1-2-3-4	M10H Z ST41		IN023902

Series B - Cam Switches, Gang Switches, 2 Gangs, Central Fixing D=22mm, IP65

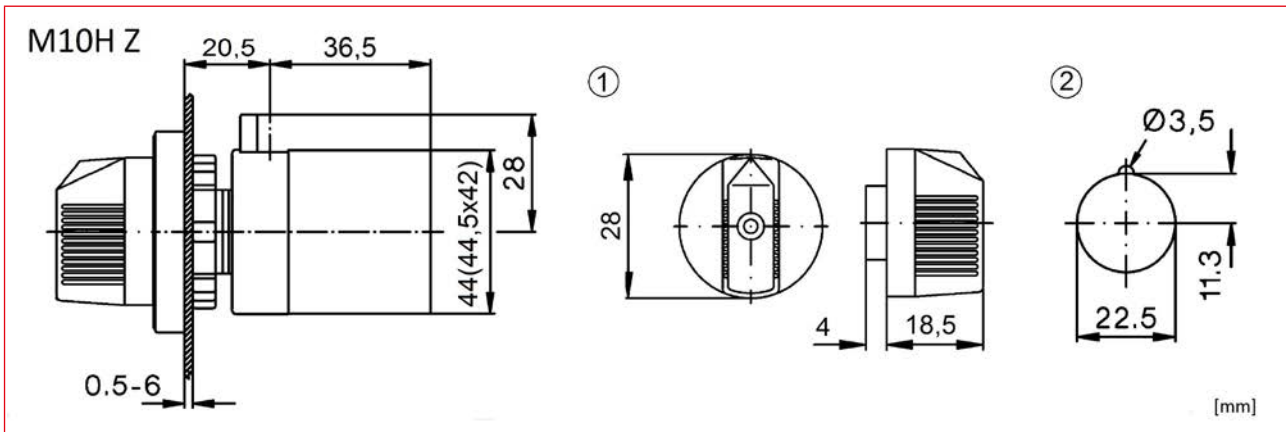


IN020901

Schrack-Info

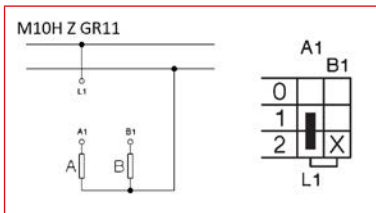
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40
- Switch program: 0 - A - A+B

Dimensions



- 1) toggle handle
2) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Gang switch 1-pole/20A/0-1-2	M10H Z GR11		IN020901

Series B - Cam Switches, Voltmeter-Selector Switches, Central Fixing D=22mm, IP65

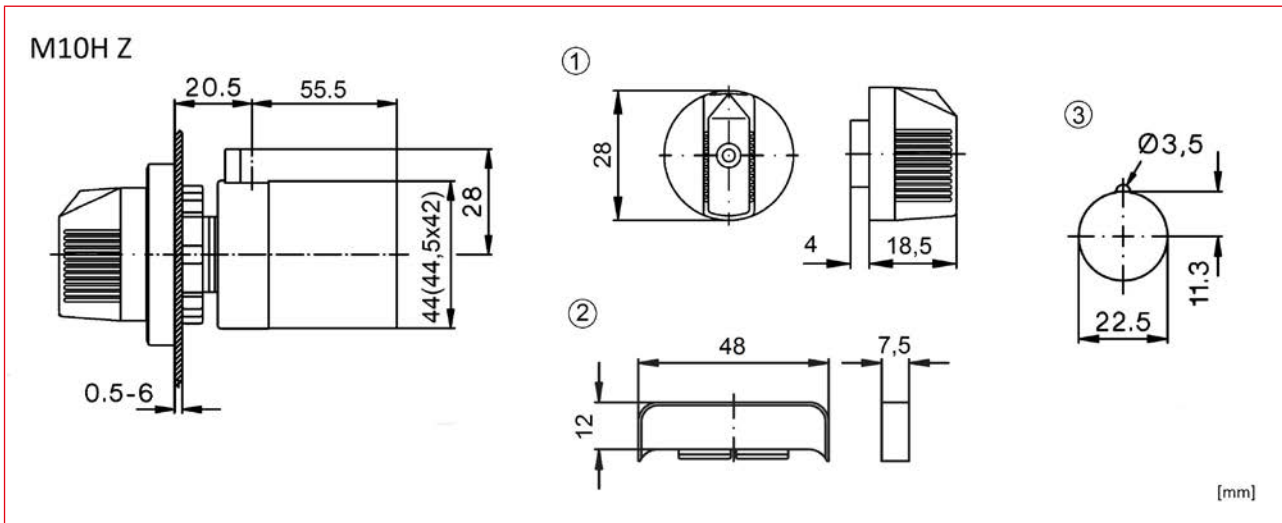


IN009V02

Schrack-Info

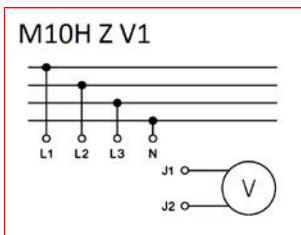
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40
- 3 phase-to-phase, 3 phase voltages
- Including label with text

Dimensions



- 1) toggle handle
- 2) additional plate
- 3) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Voltmeter changeover switch, 3 phase to phase + 3 phase to neutral/20A	M10H Z V1		IN009V02

Series B - Cam Switches, On-Off Switches, Modular, IP40

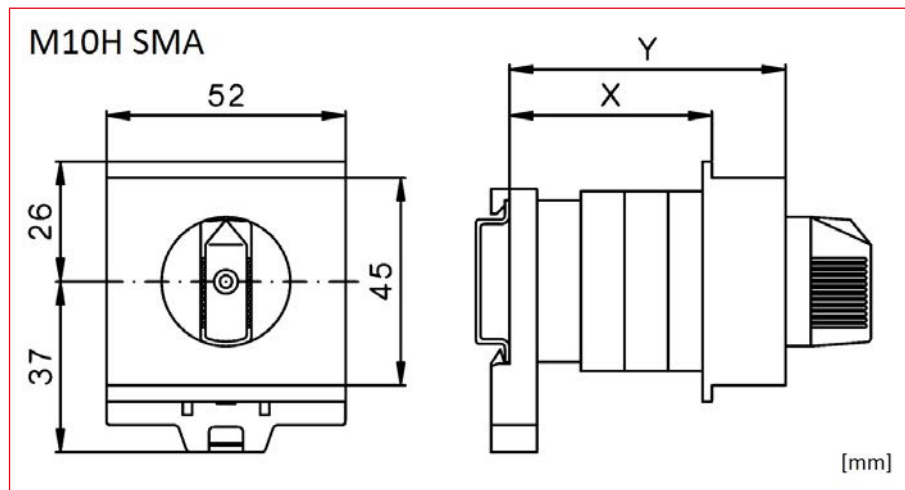


IN085120

Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree: IP40

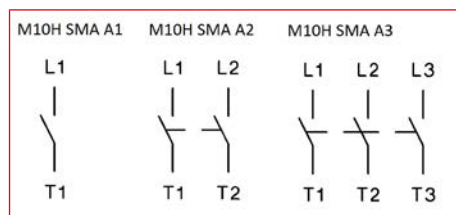
Dimensions



1) toggle handle

Type	number of cells	X	Y
M10H SMA A1, M10H SMA A2	1	44	60
M10H SMA A3	2	44	60

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Off-switch 1-pole/20A/0-1	M10H SMA A1		IN085120
Off-switch 2-pole/20A/0-1	M10H SMA A2		IN085220
Off-switch 3-pole/20A/0-1	M10H SMA A3		IN085320

Series B - Cam Switches, On-Off Key Switches, Modular, IP40

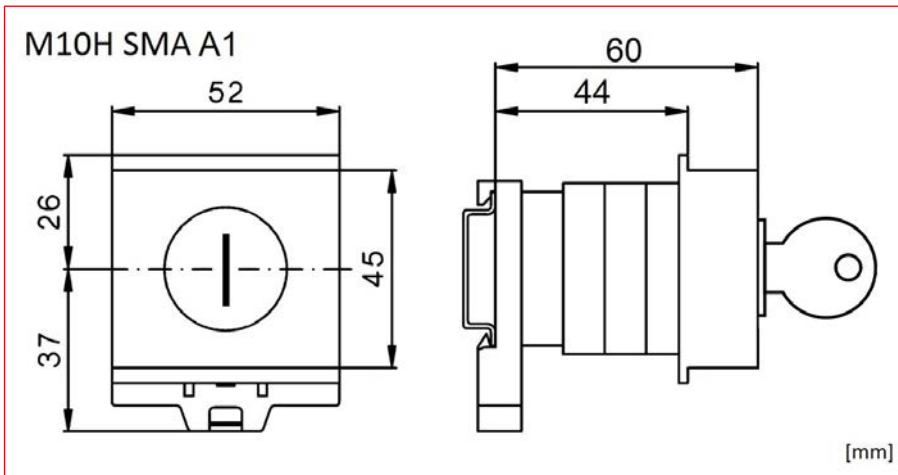


IN085121

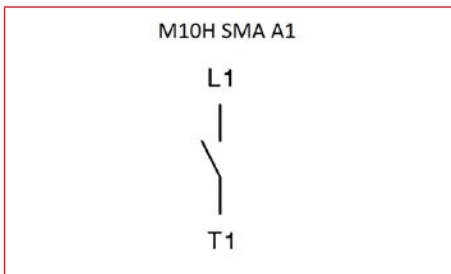
Schrack-Info

- Including Key Willenhal FT101, withdrawable in all positions
- Amperage: AC21 / 690V
- Protection degree: IP40

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Off-switch with key 1-pole/20A/0-1	M10H SMA A1		IN085121

Series B - Cam Switches, Changeover Switches with 0 Position, Modular, IP40

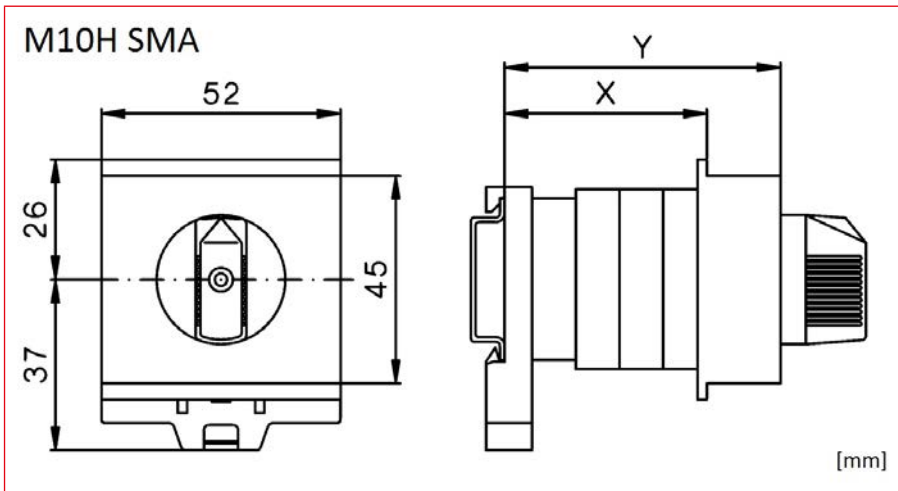


IN086120

Schrack-Info

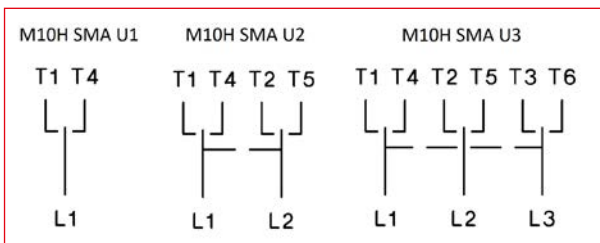
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree: IP40

Dimensions



Type	number of cells	X	Y
M10H SMA U1	1	44	60
M10H SMA U2	2	44	60
M10H SMA U3	3	44	60

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/20A/1-0-2	M10H SMA U1		IN086120
Changeover switch 2-pole/20A/1-0-2	M10H SMA U2		IN086220
Changeover switch 3-pole/20A/HAND-0-AUTO	M10H SMA U3		IN086320
Changeover switch 1-pole/20A/HAND-0-AUTO	M10H SMA U1		IN086121
Changeover switch 1-pole/20A/MAN-0-AUTO	M10H SMA U1		IN086122
Changeover switch 1-pole/20A/TAG-0-NACHT	M10H SMA U1		IN086123

Series B - Cam Switches, Changeover Switches without 0 Position, Modular, IP40

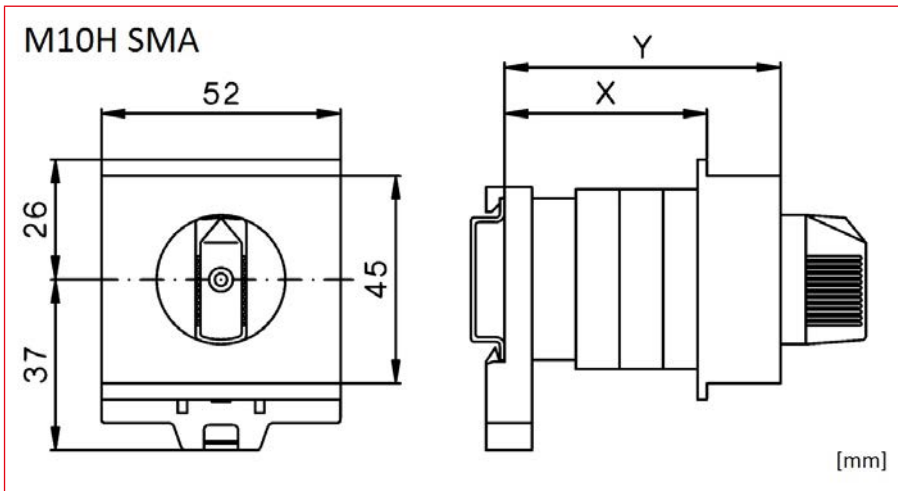


IN087320

Schrack-Info

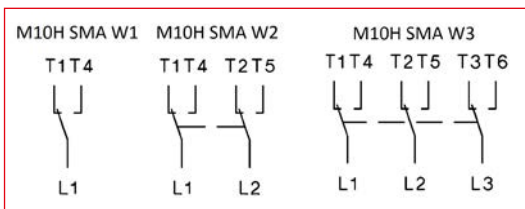
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree: IP40

Dimensions



Type	number of cells	X	Y
M10H SMA W1	1	44	60
M10H SMA W2	2	44	60
M10H SMA W3	3	44	60

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/20A/1-2	M10H SMA W1		IN087120
Changeover switch 2-pole/20A/1-2	M10H SMA W2		IN087220
Changeover switch 3-pole/20A/1-2	M10H SMA W3		IN087320

Series B - Cam Switches, Step Selector Switches without 0 Position, Modular, IP40

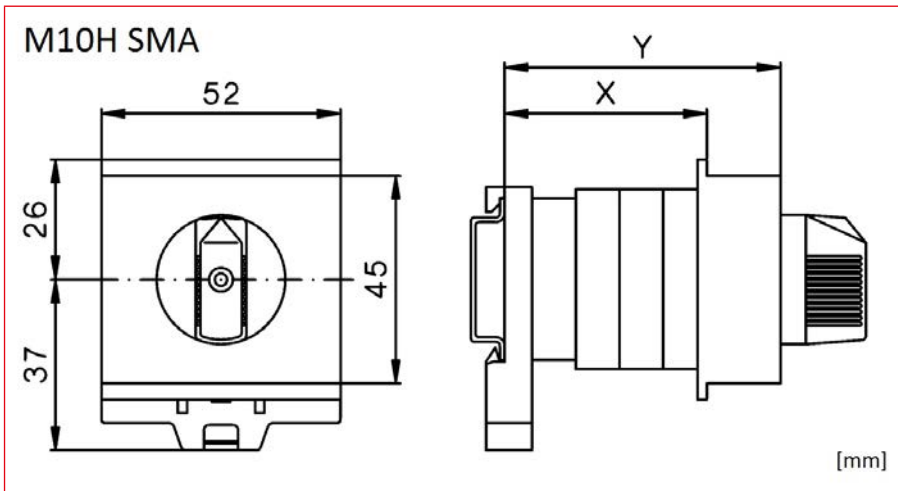


IN083221

Schrack-Info

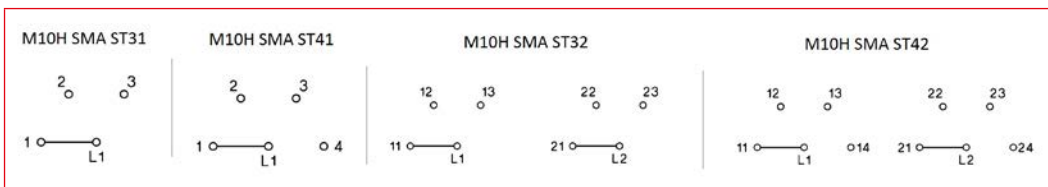
- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree: IP40

Dimensions



Type	number of cells	X	Y
M10H SMA ST31	2	44	60
M10H SMA ST41	2	44	60
M10H SMA ST32	3	44	60
M10H SMA ST42	4	61	75

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Step switch 1-pole, 3 positions/20A/1-2-3	M10H SMAST31		IN083120
Step switch 2-pole, 3 positions/20A/1-2-3	M10H SMAST32		IN083121
Step switch 1-pole, 4 positions/20A/1-2-3-4	M10H SMAST41		IN083220
Step switch 2-pole, 4 positions/20A/1-2-3-4	M10H SMAST42		IN083221

Series B - Cam Switches, Voltmeter Selector Switches, Modular, IP40

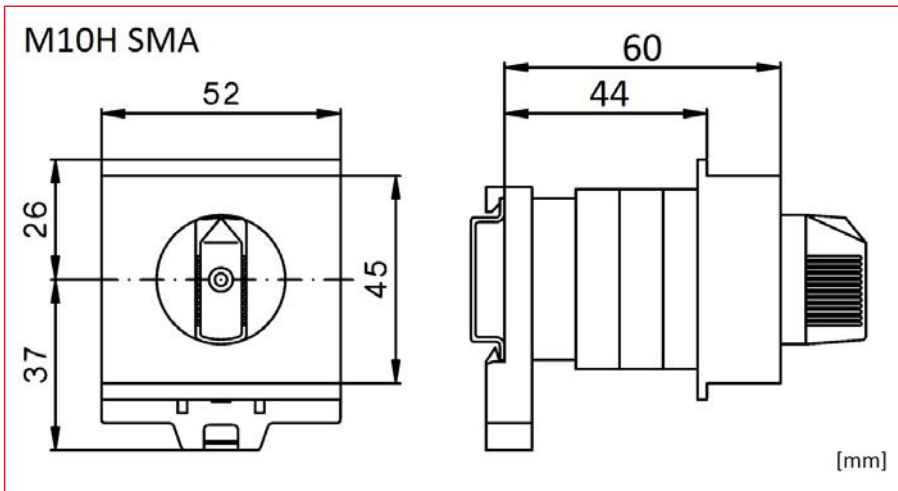


IN009V01

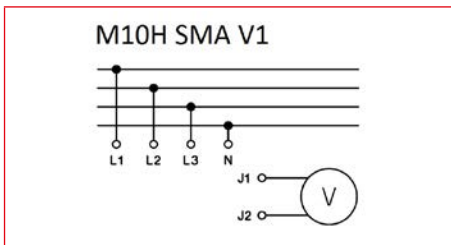
Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree: IP40
- 3 phase-to-phase, 3 phase voltages

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Voltmeter changeover switch, 3 phase to phase + 3 phase to neutral/20A	M10H SMA V1		IN009V01

Series B - Cam Switches, A-Meter Selector Switches, Modular, IP40

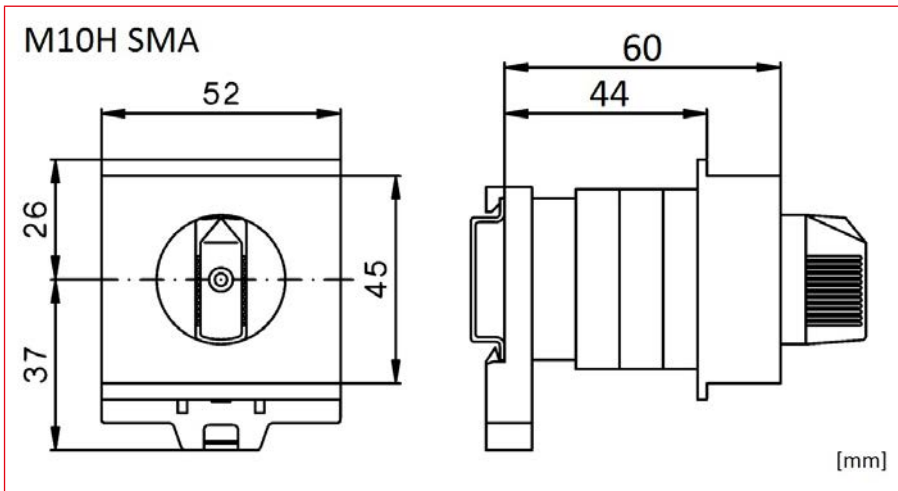


IN009A01

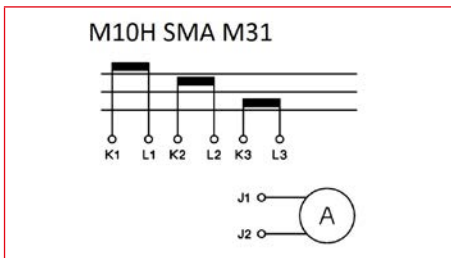
Schrack-Info

- Toggle handle blue
- Amperage: AC21 / 690V
- Protection degree: IP40
- 3 current transformers

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Amperemeter changeover switch 1-pole, 3 current transformers/20A/0-1-2-3	M10H SMA M31		IN009A01

Series B - Cam Switches, On-Off Switches Enclosed, IP40

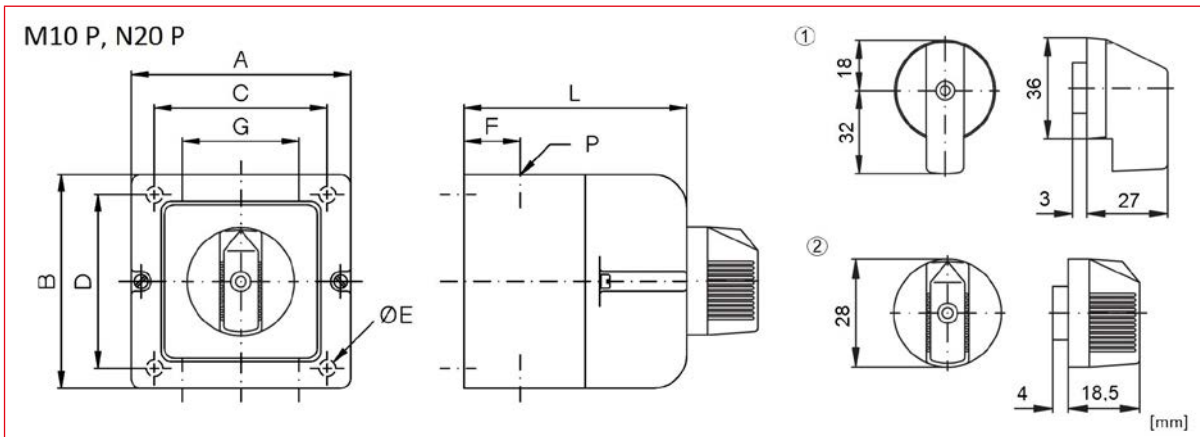


IN035120

Schrack-Info

- Instrument handle black or toggle handle blue
- Inside moulded case
- Amperage: AC21 / 690V
- Protection degree: IP40

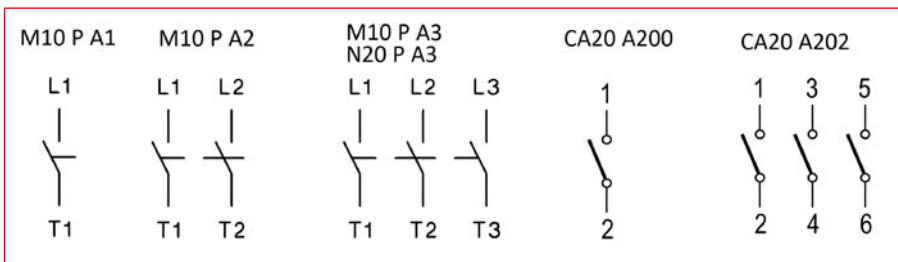
Dimensions



- 1) instrument handle
2) toggle handle

Type	A	B	C	D	E	F	G	P	number of cells	L
M10 P A1, M10 P A2	66	64	50	36	5	15.5	26	M20	1	43
M10 P A3	66	64	50	36	5	15.5	26	M20	2	52
N20 P A3	82	78	57	53	4.5	17	35	M20	2	66

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Off-switch 1-pole/toggle handle blue/20A/0-1	M10 P A1		IN035120
Off-switch 2-pole/toggle handle blue/20A/0-1	M10 P A2		IN035220
Off-switch 3-pole/toggle handle blue/20A/0-1	M10 P A3		IN035320
Off-switch 3-pole/instrument handle black/32A/0-1	N20 P A3		IN135325

Series B - Cam Switches, Heating emergency, Enclosed, IP40

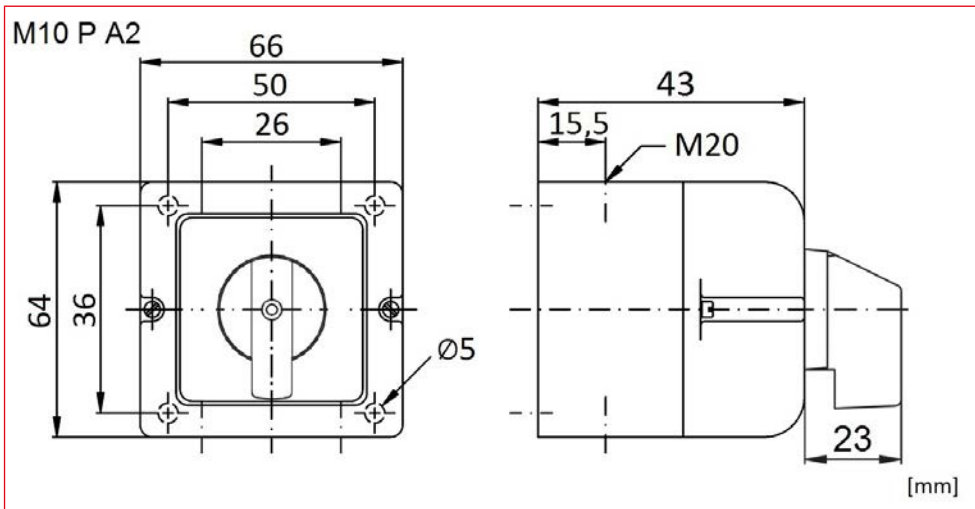


IN032009

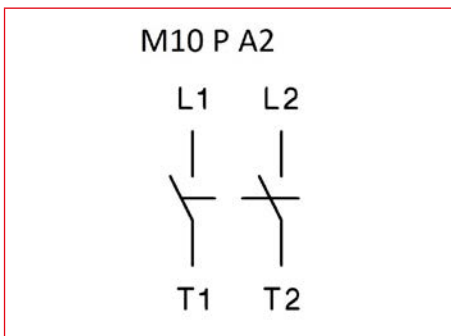
Schrack-Info

- instrument handle red
- Inside moulded case
- Amperage: AC21 / 690V
- Protection degree: IP40

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Heating emergency off switch, 2-pole, enclosed	M10 P A2		IN032009

Series B - Cam Switches, Changeover Switches with 0 Position, Enclosed, IP40

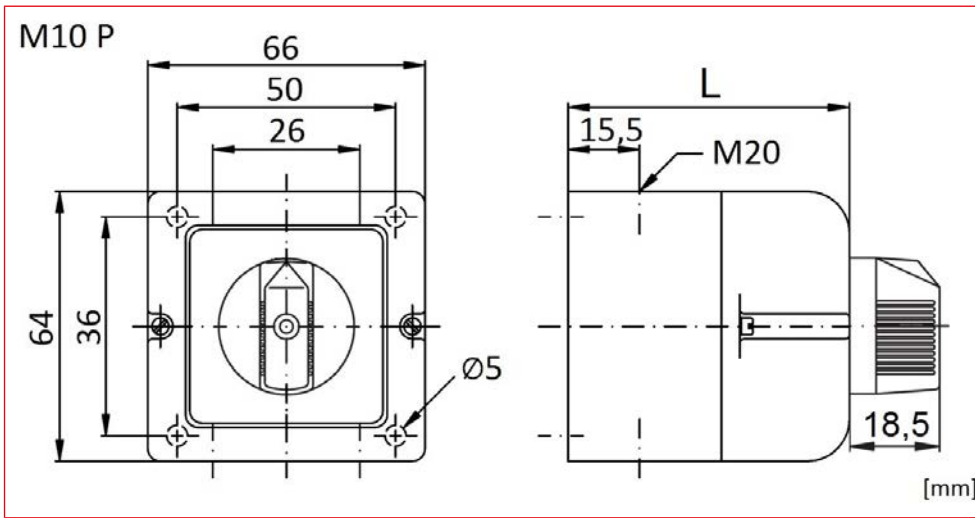


IN036120

Schrack-Info

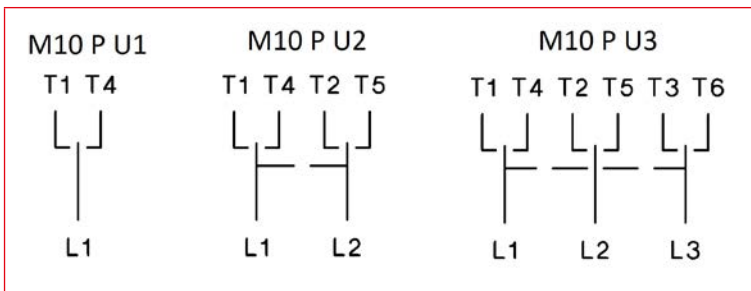
- Toggle handle blue
- Inside moulded case
- Amperage: AC21 / 690V
- Protection degree: IP40

Dimensions



Type	number of cells	L
M10 P U1	1	43
M10 P U2	2	52
M10 P U3	3	62

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/20A/1-0-2	M10 P U1		IN036120
Changeover switch 2-pole/20A/1-0-2	M10 P U2		IN036220
Changeover switch 3-pole/20A/1-0-2	M10 P U3		IN036320

Series B - Mini Cam Switches, On-Off Switches, Central Fixing D=16 and 22mm, IP65

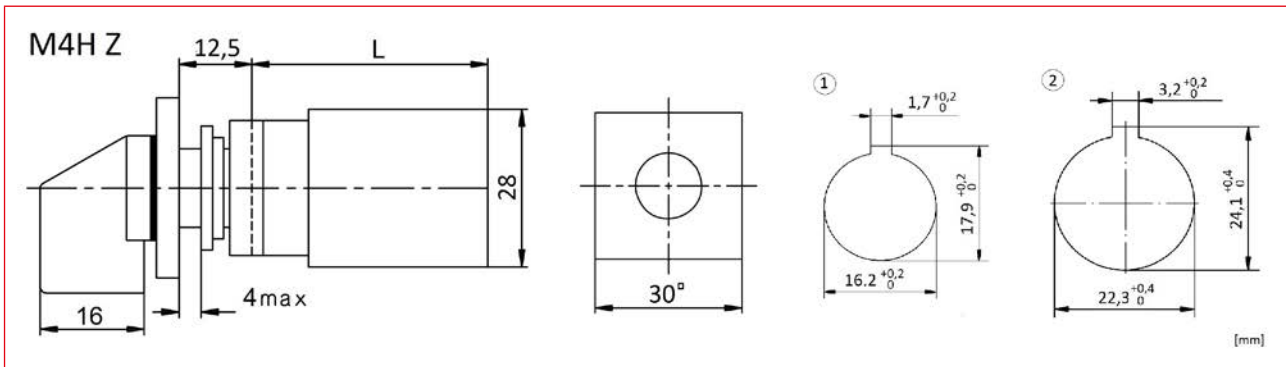


IN625110

Schrack-Info

- Instrument handle black
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

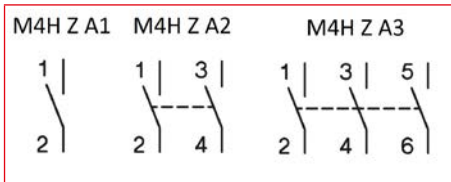
Dimensions



- 1) central fixing 16mm
2) central fixing 22mm

Type	number of cells	L
M4H Z A1, M4H Z A1	1	38.5
M4H Z A3	2	50.5

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Off-switch 1-pole/10A/0-1	M4H Z A1		IN625110
Off-switch 2-pole/10A/0-1	M4H Z A2		IN625210
Off-switch 3-pole/10A/0-1	M4H Z A3		IN625310

Series B - Mini Cam Switches, Changeover Switches with 0 Position, Central Fixing D=16 and 22mm, IP65

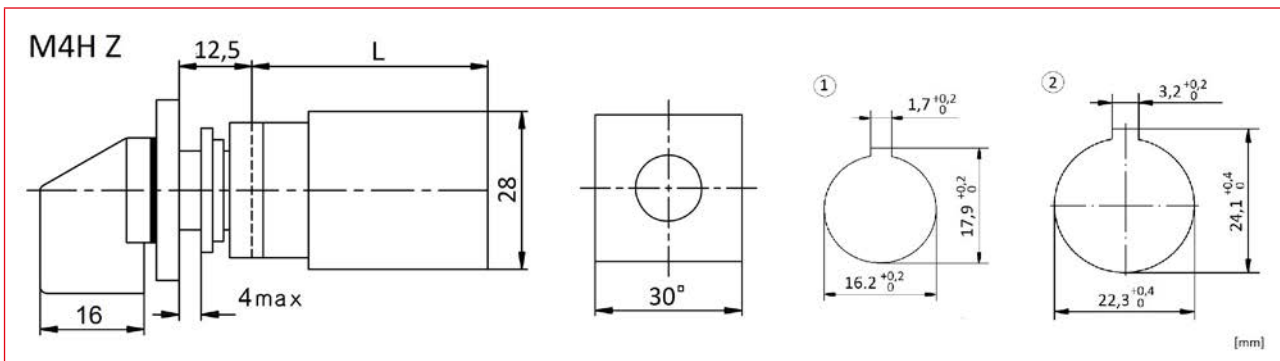


IN626110

Schrack-Info

- Instrument handle black
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

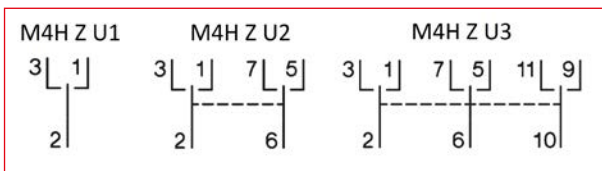
Dimensions



- 1) central fixing 16mm
2) central fixing 22mm

Type	number of cells	L
M4H Z U1	1	38.5
M4H Z U2	2	50.5
M4H Z U3	3	62.5

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/10A/1-0-2	M4H Z U1		IN626110
Changeover switch 2-pole/10A/1-0-2	M4H Z U2		IN626210
Changeover switch 3-pole/10A/1-0-2	M4H Z U3		IN626310

Cam Switches

Series B - Mini Cam Switches, Changeover Switches without 0 Position, Central Fixing D=16 and 22mm, IP65

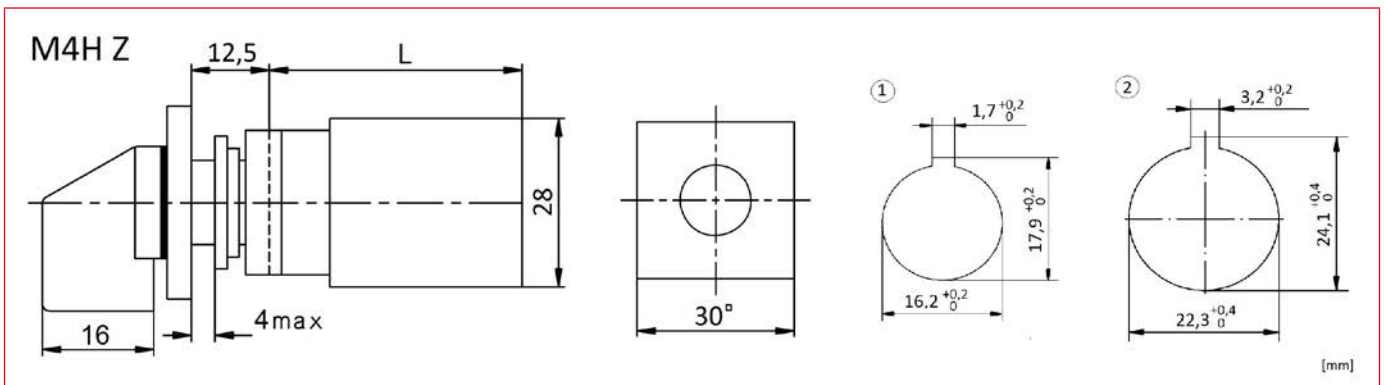


IN627110

Schrack-Info

- Instrument handle black
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

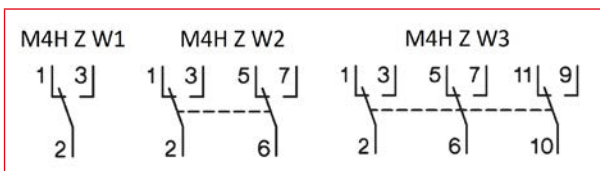
Dimensions



- 1) central fixing 16mm
2) central fixing 22mm

Type	number of cells	L
M4H Z W1	1	38.5
M4H Z W2	2	50.5
M4H Z W3	3	62.5

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Changeover switch 1-pole/10A/1-2	M4H Z W1		IN627110
Changeover switch 2-pole/10A/1-2	M4H Z W2		IN627210
Changeover switch 3-pole/10A/1-2	M4H Z W3		IN627310

Series B - Mini Cam Switches, Step Selector Switches with 0 Position, Central Fixing D=16 and 22mm, IP65

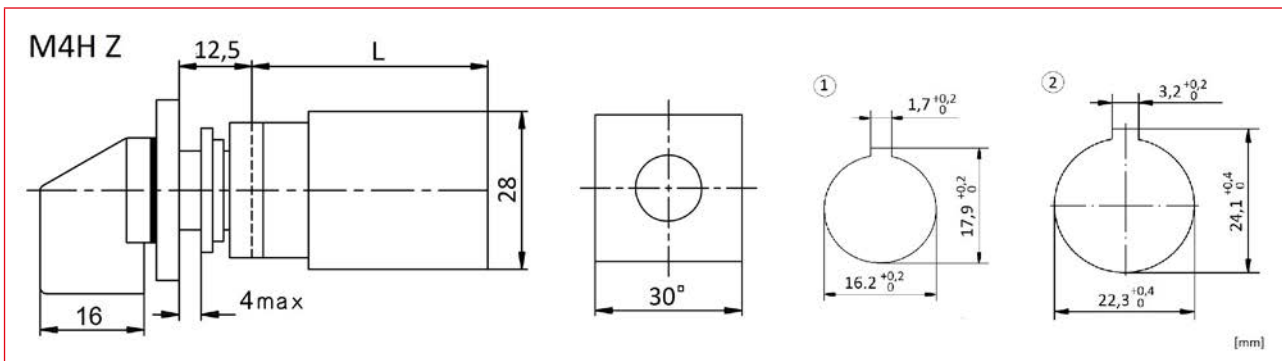


IN623902

Schrack-Info

- Instrument handle black
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

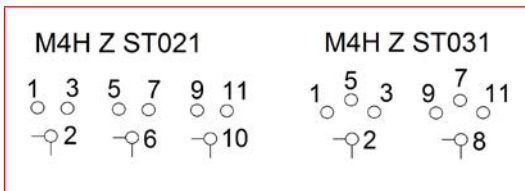
Dimensions



- 1) central fixing 16mm
- 2) central fixing 22mm

Type	number of cells	L
M4H Z ST021	1	38.5
M4H Z ST031	2	50.5

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Step switch 1-pole/0+2 positions/10A/0-1-2	M4H Z ST021		IN623902
Step switch 1-pole/0+3 positions/10A/0-1-2-3	M4H Z ST031		IN623903

Series B - Mini Cam Switches, Step Selector Switches without 0 Position, Central Fixing D=16 and 22mm, IP65

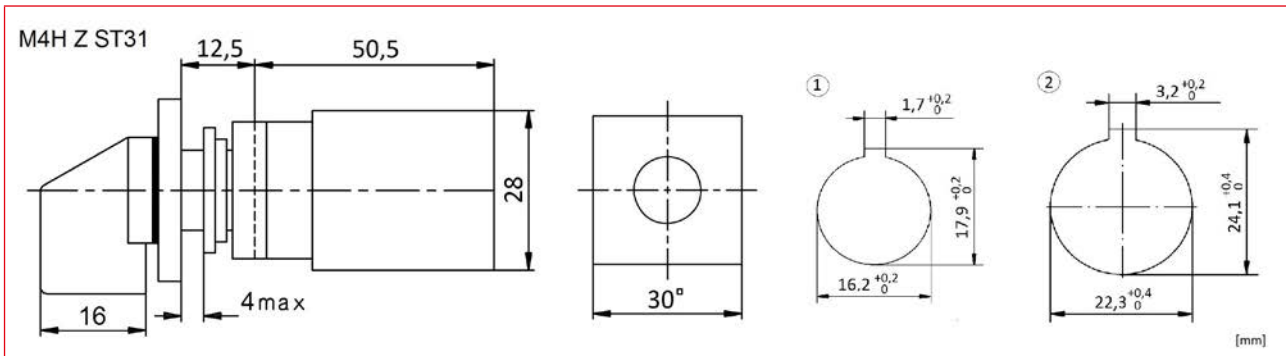


IN623901

Schrack-Info

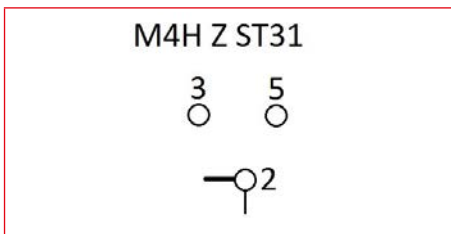
- Instrument handle black
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40

Dimensions



- 1) central fixing 16mm
2) central fixing 22mm

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Step switch 1-pole/3 positions/10A/1-2-3	M4H Z ST31		IN623901

Series B - Mini Cam Switches, Gang Switches, 2 gangs, Central Fixing D=16 and 22mm, IP65

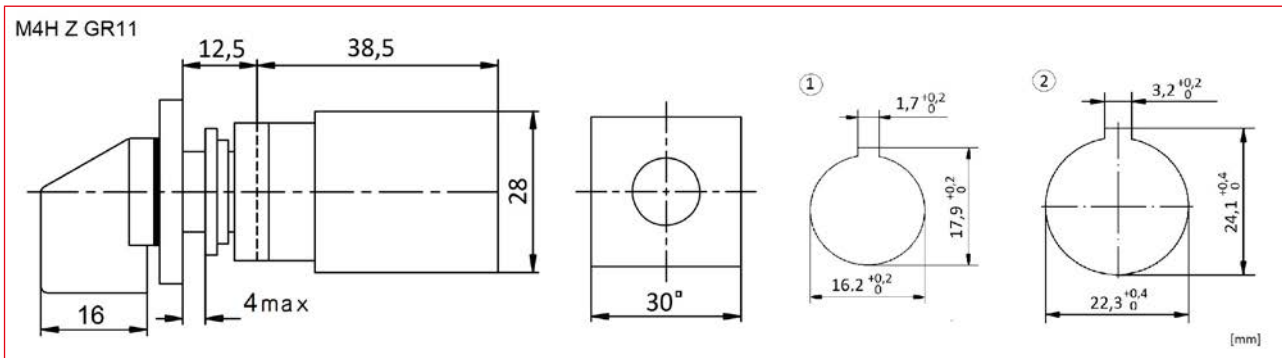


IN620901

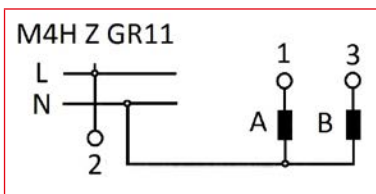
Schrack-Info

- Instrument handle black
- Amperage: AC21 / 690V
- Protection degree frontside: IP65
- Protection degree switch: IP40
- Switch program: 0 - A - A+B

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Gang switch 1-pole/10A/0-1-2	M4H Z GR11		IN620901

Cam Switches

Series B - Cam Switches, Accessories



IN16001

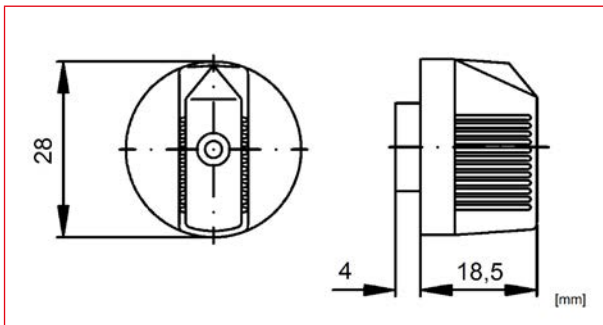



IN16000

Schrack-Info

Toggle handles as spare parts or for replacement

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Toggle handle black for switches M10, M10H, M20	A1535		IN16001
Toggle handle blue for switches M10, M10H, M20	A1549		IN16000

Series B - Cam Switches

Technical Data According to IEC 947-3, IEC 947-5-1, VDE 0660, EN 60947-3, EN 60947-5-1

Type			M4H	M10 P	M10H	M20	N20
Thermal rated operational current	I_{th} open	A	10	20	20	32	32
	I_{th} enclosed	A	-	20	20	32	32
Rated insulation voltage U_i		V	440	440	690 ¹⁾	690 ¹⁾	690 ¹⁾
Disconnection property ²⁾ acc. to VDE, IEC up to		V	-	440	440	440	440
Breaking capacity I_e	3 x 220-440V	A	50	160	160	220	220
	3 x 500V	A	-	-	100	160	160
	3 x 660-690V	A	-	-	80	120	120
Utilization category AC21A, AC21B							
Switching of resistive load including moderate overloads							
Rated operational current I_e		A	10	20	20	32	32
Utilization category AC23A, AC23B							
Switching of motor loads or other highly inductive loads							
Rated operational current I_e 400VA				16	16	30	30
Rated operation power	220-240V	kW	1,8	4	4	7,5	7,5
3-phase 3-pole	380-440V	kW	3	7,5	7,5	15	15
	500V	kW	-	-	7,5	15	15
	660-690V	kW	-	-	7,5	15	15
Star-Delta-Switches							
for squirrel cage motors							
Rated operation power	220-240V	kW	-	3,7	3,7	7,5	7,5
3-phase 3-pole	380-440V	kW	-	7,5	7,5	15	15
Utilization category AC3							
Switching of three-phase motors							
Rated operational current I_e 400VA				12	12	22	22
Rated operation power	220-240V	kW	1,5	3	3	5,5	5,5
3-phase 3-pole	380-440V	kW	2,2	5,5	5,5	11	11
	500V	kW	-	-	5,5	11	11
	660-690V	kW	-	-	5,5	11	11
Utilization category AC4							
Squirrel cage motors, inching							
Rated operation power	220-240V	kW	0,37	0,55	0,55	2,2	2,2
3-phase 3-pole	380-440V	kW	0,55	1,5	1,5	4	4
	500V	kW	-	-	1,5	4	4
	660-690V	kW	-	-	1,5	4	4
Utilization category AC15							
Control of electromagnetic loads, contactors							
Rated operational current I_e	up to 240V	A	2,5	6	6	12	12
2-pole in series	380 - 440V	A	1,5	4	4	6	6
	500V	A	-	-	5	8	8
Utilization category DC21A, DC21B							
Switching of resistive loads, time constant $L/R \leq 1$ ms							
Rated operational current I_e							
1-pole	30V	A	-	20	20	32	32
	60V	A	-	4	4	6	6
	110V	A	-	0,6	0,6	3	3
	220V	A	-	0,5	0,5	0,8	0,8
	440V	A	-	-	-	0,4	0,4
Utilization category DC3 - DC5							
Switching of shunt motors and series motors, time constant $L/R \leq 15$ ms							
Rated operational current I_e							
1-pole	30V	A	-	8	8	13	13
	60V	A	-	1	1	2,4	2,4
	110V	A	-	0,3	0,3	0,5	0,5
Protection class of terminals ³⁾			IPO0	IPO0	IP20	IPO0	IPO0

1) Suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry): $U_{imp} = 6$ kV. Data for other conditions on request

2) Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3.

3) Protection degree of the terminals with connected insulated conductor. Additional protection with terminal cover (Klad)

Series B - Cam Switches

Technical Data

Type		M10 P	M10H	M20	N20
Cable cross-sections					
solid	mm ²	1-2.5	1-2,5 ¹⁾	1.5-6	1.5-6
flexible	mm ²	0.75-2.5	0.75-2,5 ¹⁾	1-4	1-4
flexible w. multicore cable end	mm ²	0.75-2.5	0.75-1.5	1-4	1-4
Conductors to clamp per pole		2	2	2	2
Size of terminal screw		M3	M3,5	M4	M4
Tightening torque	Nm lb.inch	0.6-1.2	0.8-1.4	1.2-1.8	1.2-1.8
Short circuit protection					
Max. fuse size gL (gG)	A	20	20	35	35
Rated short-time withstands current (1 s current)	A	250	250	400	400
Rated conditional short-circuit current	kA _{eff}	10	10	10	10
Short-time capacity					
Load duration	3s A	100	100	200	200
	10s A	60	60	130	130
Note: Ratings applies to contacts already closed	30s A	35	35	85	85
	60s A	25	25	65	65
Power loss at AC21A					
per pole	A W	20 0,6	20 0,5	32 0,9	32 1,1
Switching of capacitive loads					
maximum making capacity up to 500V	V	140	140	300	300

1) Maximum cable cross-section with prepared conductor

Technical Data According to UL and cUL

Type		M10	M10H	M20	N20
Rated voltage	V~	300	600	600	600
Rated operational current	"General Use" with jumper	A A	20 -	35 25	35 25
DOL-Rating 3-phase	110-120V	hp	1½	5	5
	200-208V	hp	2	5	5
	220-240V	hp	3	5	5
	440-480V	hp	-	10	10
	550-600V	hp	-	15	15
DOL-Rating 1-phase	110-120V	hp	½	1½	1½
	200-208V	hp	1	3	3
	220-240V	hp	1½	5	5
Fuse size (RK5) 5kA / 600V	Manual Motor Controller and Motor Disconnect	A	40 ²⁾	80	80
Heavy pilot duty	AC	A300	A600	A600	A600
Cable cross sections					
solid	AWG	12 - 20	12 - 20	10 - 18	10 - 18
flexible	AWG	14 - 20	14 - 20	8 - 18	8 - 18
Tightening torque	Nm lb.inch	1.7 15	1-1.7 9-15	1.7-2.8 15-25	1.7-2.8 15-25

2) 5kA / 300V

Series KN - Cam Switches

Electrical Data - Switches According to IEC 60947-3, EN 60947-3, VDE 0660 Part 107

Type			CG4 CA4	CH10	CG8 CA10	CA20	BA20	
Rated data								
Rated continuous current I_n/I_{th}	A		10	20	20	25	20	
Rated insulation voltage $U_i^{1)}$	V		440	690	690	690	690	
Rated impulse withstands voltage U_{imp}	kV		4	6	6	6	6	
Rated operational current I_e								
AC-21A	A		10	20	20	25	20	
Switching of resistive loads, including moderate overloads								
AC-22A		220V - 500V	A	10 ^B	-	20 ^{E/D}	-	20
Switching of combined resistive or low inductive loads including moderate overloads		220V - 440V	A	10	20	20 ^C	25	-
		660V - 690V	A	-	16	20 (16 ^C)	25	20
		500V	A	-	20	20 ^C	-	-
AC-15		110V	A	2.5 ^A	5	6 ^C	-	-
Switching from magn. drives, contactors, valves, solenoids		220V - 240V	A	2.5	5	5	8	8
		380V - 440V	A	1.5	4	4	5	5
		110V - 240V	A	-	-	-	-	-
Switching capacity								
AC-3		220V - 240V	kW	1.5	3	4	4	
Direct start of squirrel cage motors, off during the run, star-delta start (CH16B)	3-phase,	380V - 440V	kW	2.2	5.5	7.5	7.5	
		3-pole	500V	kW	-	5.5	7.5	7.5
			660V - 690V	kW	-	5.5	7.5	7.5
		1-phase,	110V - 120V	kW	0.3	0.6	1.5	1.5
	220V - 240V		kW	0.55	2.2	3	3	
	2-pole	380V - 440V	kW	0.75	3	3.7	3.7	
		500V	kW	-	3 ^{F/G}	-	-	
		660V - 690V	kW	-	3 ^{F/G}	-	-	
	AC-4		220V - 240V	kW	0.37	0.55	1.5	1.5
Starting squirrel cage motors, Reversing, counter current braking, Tap	3-phase,	380V - 440V	kW	0.55	1.5	3	3	
		3-pole	500V	kW	-	1.5	3	3
			660V - 690V	kW	-	1.5	3	3
	1-phase,	110V - 120V	kW	0.15	0.3	0.45	0.45	
		220V - 240V	kW	0.25	0.75	1.1	1.1	
	2-pole	380V - 440V	kW	0.5	1.5	2.2	2.2	
	AC-23A		220V - 240V	kW	1.8	3.7	5.5	5.5
	Frequent switching of motors or other high inductive loads	3-phase,	380V - 440V	kW	3	7.5	11	11
3-pole			500V	kW	-	7.5	11	11
			660V - 690V	kW	-	7.5	11	11
1-phase,		110V - 120V	kW	0.37	0.75	1.5	1.5	
		220V - 240V	kW	0.75	2.5	3	3	
2-pole		380V - 440V	kW	1.1	3.7	5.5	5.5	
		500V	kW	-	4 ^{F/G}	-	-	
		660V - 690V	kW	-	4 ^{F/G}	-	-	
Breaking capacity			220V - 240V	A	50	150	200	200
			380V - 440V	A	50	150	200	200
		660V - 690V	A	-	80	125	125	
Power loss, resistance to vibration and shock								
Power loss per contact at I_e	W		0.4	1.4	0.9 (0.8 CG8/B)	0.9	0.9	
Resistance to vibration			min. 4g, 2-100Hz, 1.6mm					
Resistance to shock			min. 5g, 6ms (CG-, CH-switch 30ms)					
Short circuit protection								
Max. fuse size	gl/gG-characteristic	A	10	-	25	35	35	
		A	10 ^A	25	25 ^C			
		A	60(90 ^A)	200	140	280	280	
Rated short-time withstands current	(1s current)	A						
Max. permissible wire gage - Use copper wire only								
Single-core or stranded wire	mm ²		2x	2x	2x	2x	2x	
Stranded	mm ²		1.5	4	2.5	4	4	
Finely stranded with end sleeves acc. to DIN 46228	mm ²		1.5 ^B	2.5	2.5	4	4	
	mm ²		1	2.5	2.5	2.5	2.5	
Max. ambient temperature of stages⁵⁾								
open at 100 % I_n/I_{th}			55°C during 24 hours with peaks up to 60°C					
Encapsulated at 100 % I_{se}			35°C during 24 hours with peaks up to 40°C					

1) Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request.

5) Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).

A: Applies only to CG4 | B: Applies only to CA4 | C: Applies only to CG8/B | D: Applies only to CA10/B | E: Applies only to CA10/B | F: Applies only to CH10/B | G: Applies only to CH6

Series Amparo - Compact Indicator Lights



Series MS - Push Buttons



Series MS - Emergency Stop Push Buttons



Series MSI - Signal Towers



Series MM - Sets



Series MM - Palm Switches



Command and Signalling Devices

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Series Amparo, Compact Indicator Lights 24 V - AC/DC



BZ501210-B

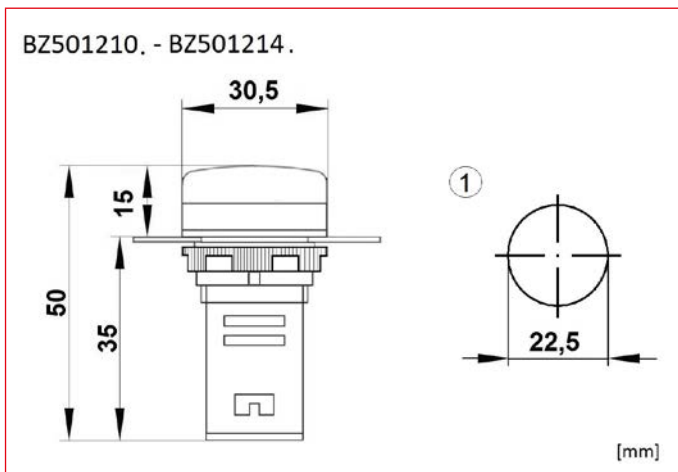


BZ501211-B

Schrack-Info

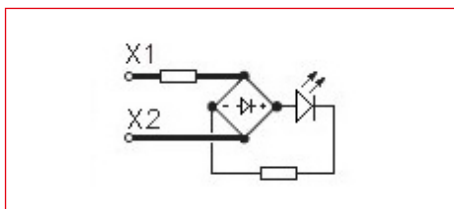
- Compact design
- Protection degree: IP65
- Protection degree: IP40
- LED ≤ 20mA

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Compact-LED red, 24V AC/DC		BZ501210-B
Compact-LED yellow, 24V AC/DC		BZ501211-B
Compact-LED blue, 24V AC/DC		BZ501212-B
Compact-LED green, 24V AC/DC		BZ501213-B
Compact-LED white, 24V AC/DC		BZ501214-B

Series Amparo, Compact Indicator Lights 230 V - AC/DC



BZ501215-B

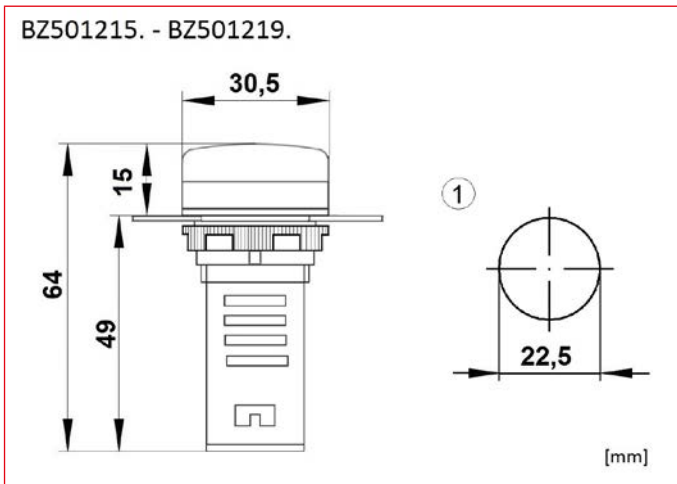


BZ501216-B

Schrack-Info

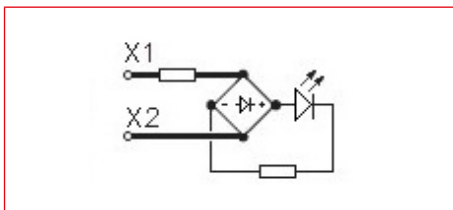
- Compact design
- Protection degree: IP65
- Protection degree: IP40
- LED ≤ 20mA

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
LED-indicator monobloc red, 230V AC/DC		BZ501215-B
LED-indicator monobloc yellow, 230V AC/DC		BZ501216-B
LED-indicator monobloc blue, 230V AC/DC		BZ501217-B
LED-indicator monobloc green, 230V AC/DC		BZ501218-B
LED-indicator monobloc white, 230V AC/DC		BZ501219-B



Order no. blue: on stock, usually ready for delivery on the day of order

Series Amparo, Compact Indicator Lights - Accessories



MSZT1710



MSZS000917



MSZS010717

Schrack-Info

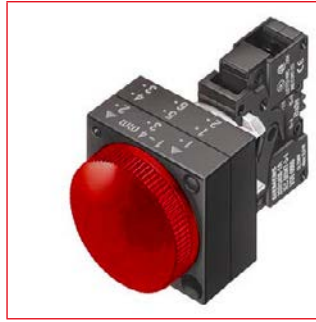
- Label holder fitted with self-adhesive tape

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Tag holder for snap-in plate 17.5x28mm	MSZ		MSZT1710
Plate 17,5x28mm, aluminium, snap-in, "EIN"	MSZ		MSZS000217
Plate 17,5x28mm, aluminium, snap-in, "AUS"	MSZ		MSZS000317
Plate 17,5x28mm, aluminium, snap-in, "AUF"	MSZ		MSZS000417
Plate 17,5x28mm, aluminium, snap-in, "AB"	MSZ		MSZS000517
Plate 17,5x28mm, aluminium, snap-in, "ZU"	MSZ		MSZS000617
Plate 17,5x28mm, aluminium, snap-in, "BETRIEB"	MSZ		MSZS000717
Plate 17,5x28mm, aluminium, snap-in, "STÖRUNG"	MSZ		MSZS000817
Plate 17,5x28mm, aluminium, snap-in, "START"	MSZ		MSZS000917
Plate 17,5x28mm, aluminium, snap-in, "HALT"	MSZ		MSZS001017
Plate 17,5x28mm, aluminium, snap-in, "STOP"	MSZ		MSZS001117
Plate 17,5x28mm, aluminium, snap-in, "STOP START"	MSZ		MSZS001217
Plate 17,5x28mm, aluminium, snap-in, "HAND AUTO"	MSZ		MSZS001317
Plate 17,5x28mm, aluminium, snap-in, "0 I"	MSZ		MSZS001417
Plate 17,5x28mm, aluminium, snap-in, arrow vertical	MSZ		MSZS001517
Plate 17,5x28mm, aluminium, snap-in, arrow horizontal	MSZ		MSZS001617
Plate 17,5x28mm, aluminium, snap-in, without text	MSZ		MSZS001717
Plate 17,5x28mm, aluminium, snap-in, "ON"	MSZ		MSZS010217
Plate 17,5x28mm, aluminium, snap-in, "OFF"	MSZ		MSZS010317
Plate 17,5x28mm, aluminium, snap-in, "UP"	MSZ		MSZS010417
Plate 17,5x28mm, aluminium, snap-in, "DOWN"	MSZ		MSZS010517
Plate 17,5x28mm, aluminium, snap-in, "CLOSE"	MSZ		MSZS010617
Plate 17,5x28mm, aluminium, snap-in, "RUNNING"	MSZ		MSZS010717
Plate 17,5x28mm, aluminium, snap-in, "FAULT"	MSZ		MSZS010817
Plate 17,5x28mm, aluminium, snap-in, "MAN AUTO"	MSZ		MSZS011317
Plate 17,5x28mm, aluminium, snap-in, "AUS EIN"	MSZ		MSZS020317
Plate 17,5x28mm, aluminium, snap-in, "OFFEN"	MSZ		MSZS020417
Plate 17,5x28mm, aluminium, snap-in, "HAND 0 AUTO"	MSZ		MSZS021317
Plate 17,5x28mm, aluminium, snap-in, "I 0 II"	MSZ		MSZS021417
Plate 17,5x28mm, aluminium, snap-in, "OFF ON"	MSZ		MSZS030317
Plate 17,5x28mm, aluminium, snap-in, "OPEN"	MSZ		MSZS030417
Plate 17,5x28mm, aluminium, snap-in, "MAN 0 AUTO"	MSZ		MSZS031317

Series MS - Sets



MSG13400RD

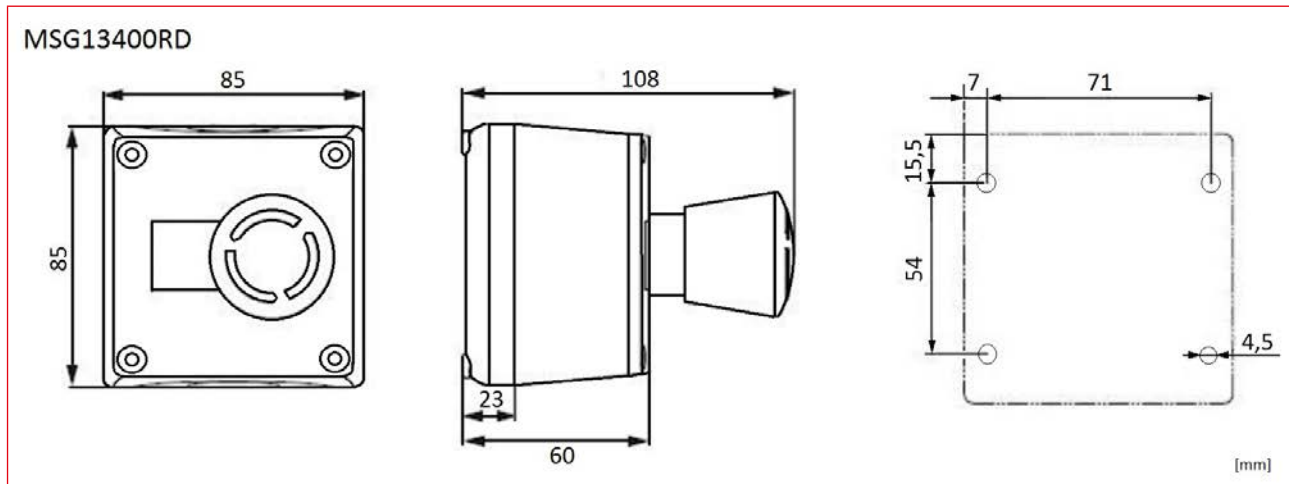


MSM12003C

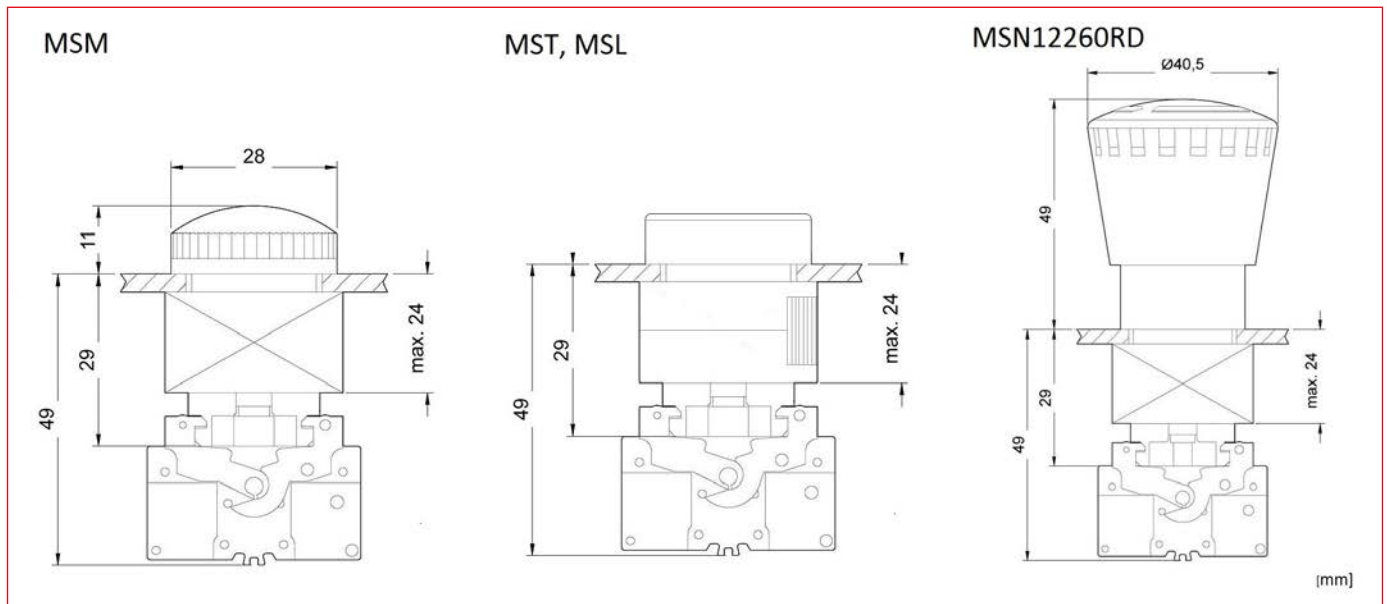
Schrack-Info

- Preassembled sets consisting of
- Command and signalling devices
- Mounting adapter
- LED / contact block
- Technical data for LED and contact blocks see MSZL / MSZK




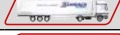
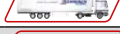
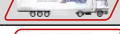



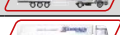

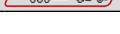
Dimensions



Dimensions



Series MS - Sets

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Set of emergency stop mushroom-PB, 2NC, box yellow, rotation release, without collar	MSG		MSG13400RD
SET push-button illuminated, red, 230V, 1NC, cage clamp	MSL		MSL12203C
SET push-button illuminated, red, 24V, 1NC, cage clamp	MSL		MSL12205C
SET push-button illuminated, green, 230V, 1NO, cage clamp	MSL		MSL14103C
SET push-button illuminated, green, 24V, 1NO, cage clamp	MSL		MSL14105C
SET signal lamp, red, 230V, cage clamp	MSM		MSM12003C
SET signal lamp, red, 24V, cage clamp	MSM		MSM12005C
SET signal lamp, green, 230VAC, cage clamp	MSM		MSM14003C
SET signal lamp, green, 24V AC/DC, cage clamp	MSM		MSM14005C
SET Emergency-Stop push-button red, "NOT-HALT", 1NC, rotary release	MSN		MSN12260RD
SET push-button, red, 1NC, cage clamp	MST		MST12200C
SET push-button, green, 1NO, cage clamp	MST		MST14100C

Series MS - Push Buttons

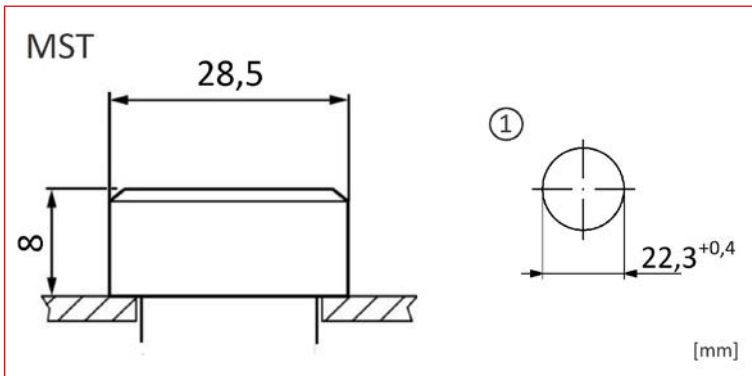


MST12000

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Holder included (for 2 contact blocks)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Push-button, black	MST		MST11000
Push-button, black, "0"	MST		MST11040
Push-button, red	MST		MST12000
Push-button, red, "0"	MST		MST12040
Push-button, yellow	MST		MST13000
Push-button, green	MST		MST14000
Push-button, green, "I"	MST		MST14010
Push-button, blue	MST		MST15000
Push-button, white	MST		MST16000
Push-button, white, "I"	MST		MST16010
Push-button, transparent	MST		MST17000



Order no. blue: on stock, usually ready for delivery on the day of order

Series MS - Push Buttons, Latching

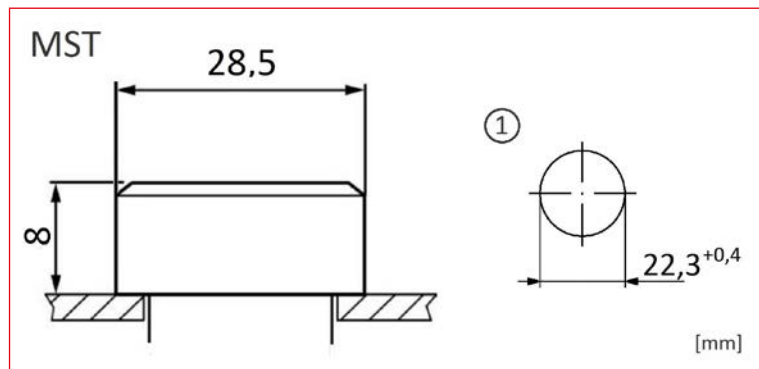


MST12000R





Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Holder included (for 2 contact blocks)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Push-button, black, latching	MST		MST11000R
Push-button, red, latching	MST		MST12000R
Push-button, yellow, latching	MST		MST13000R
Push-button, green, latching	MST		MST14000R
Push-button, blue, latching	MST		MST15000R
Push-button, white, latching	MST		MST16000R

Series MS - Push Buttons Illuminated

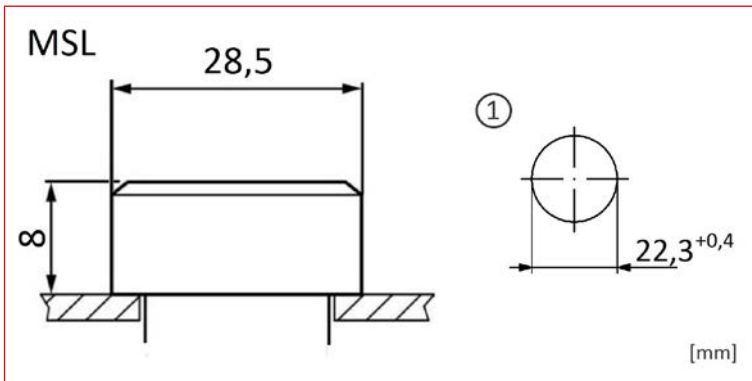


MSL13000

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Holder included (for 2 contact blocks + LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Push-button illuminated, red	MSL		MSL12000
Push-button illuminated, yellow	MSL		MSL13000
Push-button illuminated, green	MSL		MSL14000
Push-button illuminated, blue	MSL		MSL15000
Push-button illuminated, white	MSL		MSL16000
Push-button illuminated, transparent	MSL		MSL17000



Series MS - Push Buttons Illuminated, Latching

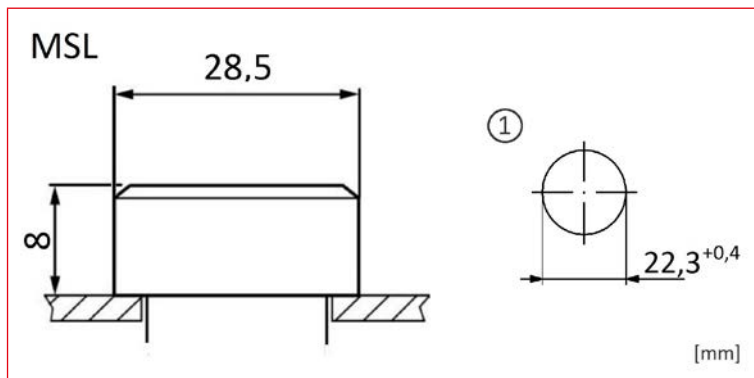


MSL12000R

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Holder included (for 2 contact blocks + LED)

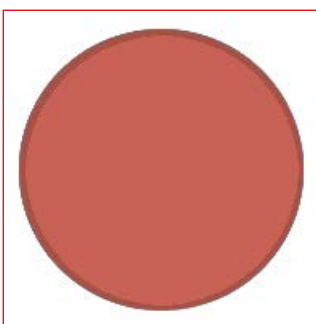
Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Push-button illuminated, red, latching	MSL		MSL12000R
Push-button illuminated, yellow, latching	MSL		MSL13000R
Push-button illuminated, green, latching	MSL		MSL14000R
Push-button illuminated, blue, latching	MSL		MSL15000R
Push-button illuminated, white, latching	MSL		MSL16000R
Push-button illuminated, transparent, latching	MSL		MSL17000R

Series MS - Plates for Illuminated Push Buttons



MSZX2001

Schrack-Info

- For changing colour at existing illuminated push buttons

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Plate for push-button illuminated, red	MSZ		MSZX2001
Plate for push-button illuminated, yellow	MSZ		MSZX3001
Plate for push-button illuminated, green	MSZ		MSZX4001
Plate for push-button illuminated, blue	MSZ		MSZX5001
Plate for push-button illuminated, white	MSZ		MSZX6001
Plate for push-button illuminated, transparent	MSZ		MSZX7001

Series MS - Plates for Transparent Push Buttons and Illuminated Push Buttons



MSZS700028

Schrack-Info

- For afterwards inscription of push buttons
- Arranged beneath plates of flat push buttons

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Plate 28mm dia, transparent, "0"	MSZ		MSZS700028
Plate 28mm dia, transparent, "1"	MSZ		MSZS700128
Plate 28mm dia, transparent, "EIN"	MSZ		MSZS700228
Plate 28mm dia, transparent, "AUS"	MSZ		MSZS700328
Plate 28mm dia, transparent, "AUF"	MSZ		MSZS700428
Plate 28mm dia, transparent, "AB"	MSZ		MSZS700528
Plate 28mm dia, transparent, "ZU"	MSZ		MSZS700628
Plate 28mm dia, transparent, "BETRIEB"	MSZ		MSZS700728
Plate 28mm dia, transparent, "STÖRUNG"	MSZ		MSZS700828
Plate 28mm dia, transparent, "START"	MSZ		MSZS700928
Plate 28mm dia, transparent, "HALT"	MSZ		MSZS701028
Plate 28mm dia, transparent, "STOP"	MSZ		MSZS701128
Plate 28mm dia, transparent, symbol arrow	MSZ		MSZS701528
Plate 28mm dia, transparent, "TEST"	MSZ		MSZS701828
Plate 28mm dia, transparent, "RESET"	MSZ		MSZS701928
Plate 28mm dia, transparent, "ON"	MSZ		MSZS710228
Plate 28mm dia, transparent, "OFF"	MSZ		MSZS710328
Plate 28mm dia, transparent, "UP"	MSZ		MSZS710428
Plate 28mm dia, transparent, "DOWN"	MSZ		MSZS710528
Plate 28mm dia, transparent, "CLOSE"	MSZ		MSZS710628
Plate 28mm dia, transparent, "RUNNING"	MSZ		MSZS710728
Plate 28mm dia, transparent, "FAULT"	MSZ		MSZS710828
Plate 28mm dia, transparent, "OPEN"	MSZ		MSZS730428



Series MS - Twin Push Buttons

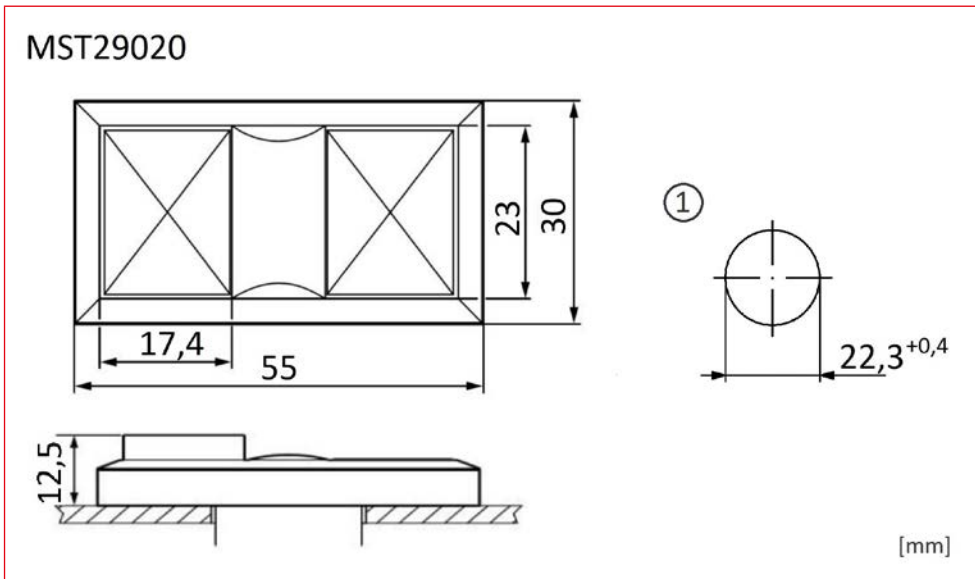


MST29020

Schrack-Info

- Protection degree: IP66
- 30x55mm
- Holder included (for 2 contact blocks)

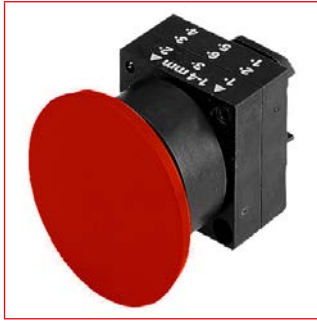
Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Twin Push-button, green/red, "I/O"	MST		MST29020

Series MS - Mushroom Push Buttons, D=40mm

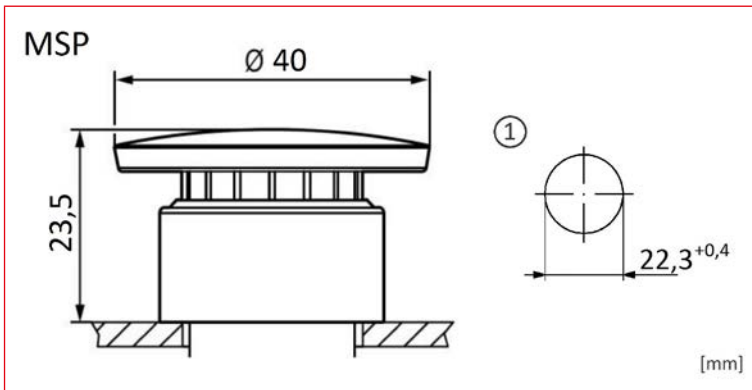


MSP12000



Schrack-Info

- Protection degree: IP66
- Diameter 40mm
- Holder included (for 2 contact blocks)

Dimensions

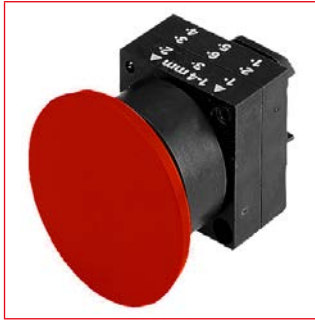


1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Mushroom push-button, black	MSP		MSP11000
Mushroom push-button, red	MSP		MSP12000
Mushroom push-button, green	MSP		MSP14000



Series MS - Mushroom Push Buttons, D=40mm, Latching, Pull to Release

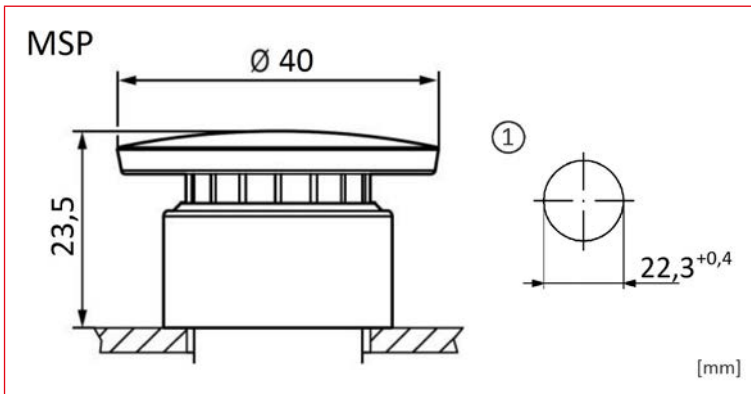


MSP12000RZ

Schrack-Info

- Protection degree: IP66
- Diameter 40mm
- Holder included (for 2 contact blocks)

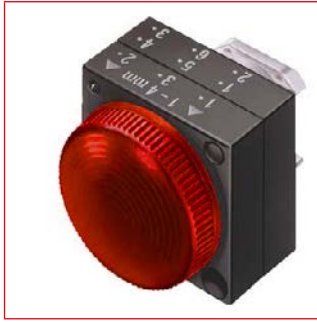
Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Mushroom push-button, red, latching, pull release	MSP		MSP12000RZ

Series MS - Signal Lamps

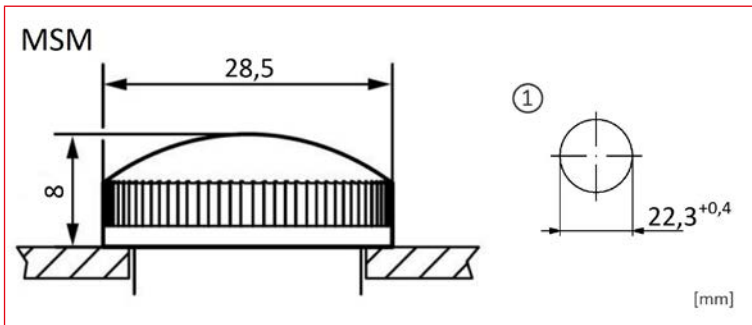


MSM12000

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- LED or bulb socket can be snapped on
- Holder included (for LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
signal lamp, red	MSM		MSM12000
Signal lamp, yellow	MSM		MSM13000
Signal lamp, green	MSM		MSM14000
Signal lamp, blue	MSM		MSM15000
Signal lamp, white	MSM		MSM16000
Signal lamp, transparent	MSM		MSM17000



Series MS - Emergency Stop Push Buttons, Turn to Release

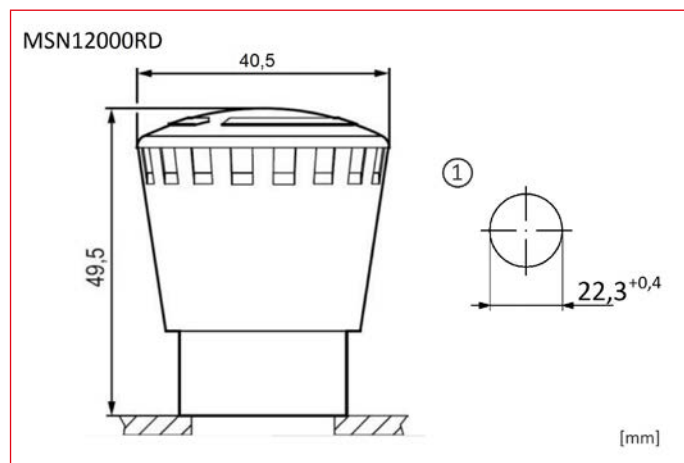


MSN12000RD

Schrack-Info

- Protection degree: IP66
- Diameter 41 mm
- Holder included (for 2 contact blocks)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
E-Stop push-button, red, rotary release	MSN		MSN12000RD

Series MS - Emergency Stop Push Buttons, Pull to Release

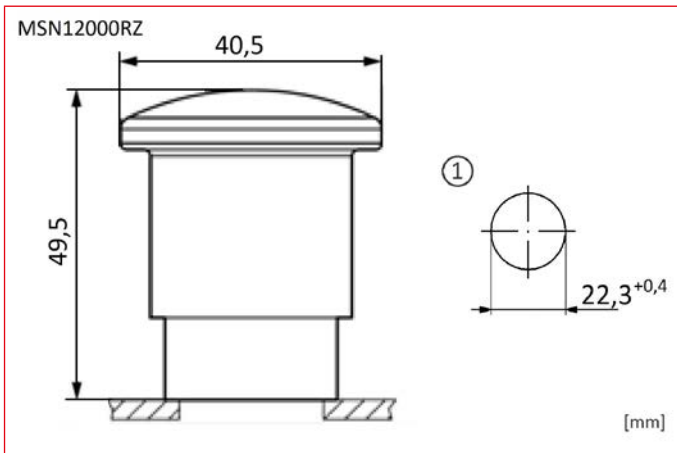


MSN12000RZ

Schrack-Info

- Protection degree: IP66
- Diameter 41 mm
- Holder included (for 2 contact blocks)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Emergency-Stop push-button, red, 40mm dia, pull release	MSN		MSN12000RZ



Series MS - Emergency Stop Push Buttons, Key Release

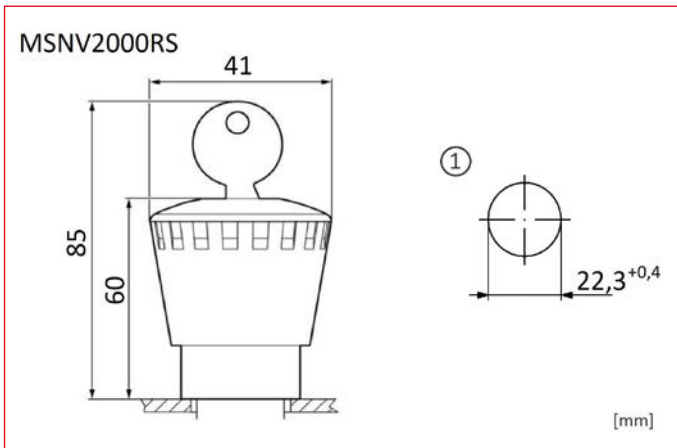


MSNV2000RS


Schrack-Info

- Protection degree: IP66
- Diameter 41 mm
- Holder included (for 2 contact blocks)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Emergency-Stop push-button red, 40mm dia, key release, Ronis	MSN		MSNV2000RS

Series MS - Toggle Handles 2 Positions

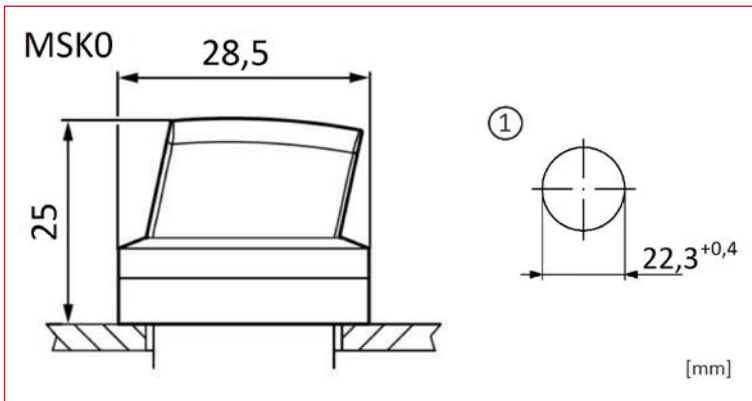


MSK010205T

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Angle: 50°
- Holder included (for 2 contact blocks + LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Knob, 2 positions, 50°, latching	MSK		MSK010205R
Knob, 2 positions, 50°, momentary	MSK		MSK010205T
Knob, 2 positions, 90°, latching	MSK		MSK010209R



Order no. blue: on stock, usually ready for delivery on the day of order

Series MS - Toggle Handles 3 Positions

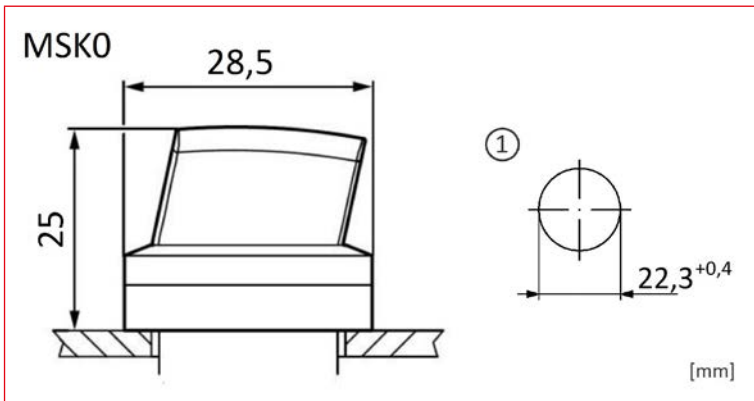


MSK010305T



Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Angle: 2 x 50°
- Holder included (for 2 contact blocks + LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Knob, 3 positions, 2x50°, latching	MSK		MSK010305R
Knob, 3 positions, 2x50°, momentary	MSK		MSK010305T
Knob 3 positions, 2x50°, latching left, momentary right	MSK		MSK01030RT
Knob 3 positions, 2x50°, momentary left, latching right	MSK		MSK01030TR

Series MS - Toggle Handles 2 Positions, Illuminated

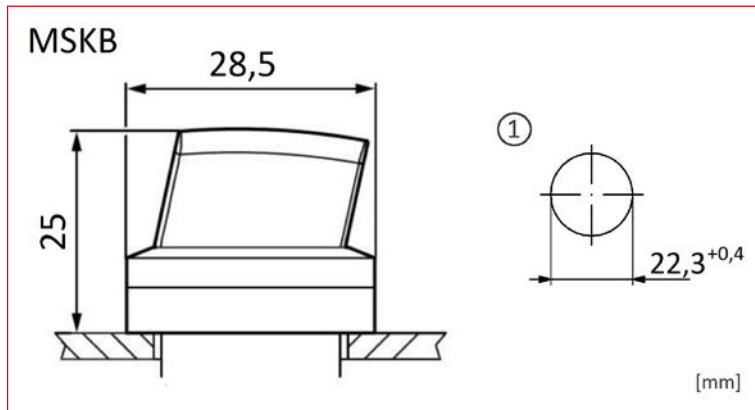


MSKB2020R

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Angle: 50°
- Holder included (for 2 contact blocks + LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Knob illuminated, red, 2 positions, 50°, latching	MSK		MSKB2020R
Toggle handle illuminated, red, 2 positions, 50°, momentary	MSK		MSKB2020T
Knob illuminated, yellow, 2 positions, 50°, latching	MSK		MSKB3020R
Toggle handle illuminated, yellow, 2 positions, 50°, momentary	MSK		MSKB3020T
Toggle handle illuminated, green, 2 positions, 50°, latching	MSK		MSKB4020R
Toggle handle illuminated, green, 2 positions, 50°, momentary	MSK		MSKB4020T
Toggle handle illuminated, blue, 2 positions, 50°, latching	MSK		MSKB5020R
Toggle handle illuminated, blue, 2 positions, 50°, momentary	MSK		MSKB5020T
Toggle handle illuminated, transparent, 2 positions, 50°, latching	MSK		MSKB7020R
Toggle handle illuminated, transparent, 2 positions, 50°, momentary	MSK		MSKB7020T



Order no. blue: on stock, usually ready for delivery on the day of order

Series MS - Toggle Handles 3 Positions, Illuminated

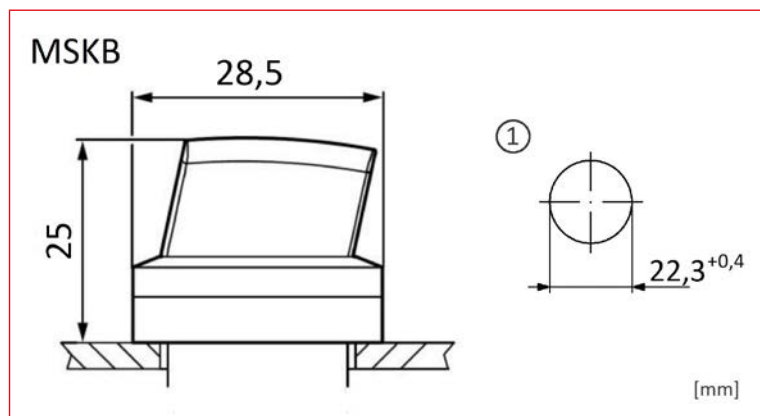


MSKB3030R

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Angle: 2 x 50°
- Holder included (for 2 contact blocks + LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Knob illuminated, red, 3 positions, 2x50°, latching	MSK		MSKB2030R
Knob illuminated, red, 3 positions, 2x50°, latching left, momentary right	MSK		MSKB2030RT
Toggle handle illuminated, red, 2 positions, 2 x 50°, momentary	MSK		MSKB2030T
Knob illuminated, red, 3 positions, 2x50°, momentary left, latching right	MSK		MSKB2030TR
Knob illuminated, yellow, 3 positions, 2x50°, latching	MSK		MSKB3030R
Knob illuminated, yellow, 3 positions, 2x50°, latching left, momentary right	MSK		MSKB3030RT
Toggle handle illuminated, yellow, 3 positions, 2x50°, momentary	MSK		MSKB3030T
Knob illuminated, yellow, 3 positions, 2x50°, momentary left, latching right	MSK		MSKB3030TR
Toggle handle illuminated, green, 3 positions, 2x50°, latching	MSK		MSKB4030R
Toggle handle illuminated, green, 3 positions, 2x50°, latching left, momentary right	MSK		MSKB4030RT
Toggle handle illuminated, green, 3 positions, 2x50°, momentary	MSK		MSKB4030T
Knob illuminated, green, 3 positions, 2x50°, momentary left, latching right	MSK		MSKB4030TR
Knob illuminated, blue, 3 positions, 2x50°, latching	MSK		MSKB5030R
Knob illuminated, blue, 3 positions, 2x50°, latching left, momentary right	MSK		MSKB5030RT
Toggle handle illuminated, blue, 3 positions, 2x50°, momentary	MSK		MSKB5030T
Knob illuminated, blue, 3 positions, 2x50°, momentary left, latching right	MSK		MSKB5030TR
Toggle handle illuminated, transparent, 3 positions, 2x50°, latching	MSK		MSKB7030R
Toggle handle illuminated, transparent, 3 positions, 2x50°, latching left, momentary right	MSK		MSKB7030RT
Toggle handle illuminated, transparent, 3 positions, 2x50°, momentary	MSK		MSKB7030T
Toggle handle illuminated, transparent, 3 positions, 2x50°, momentary left, latching right	MSK		MSKB7030TR

Series MS - Key-Switches

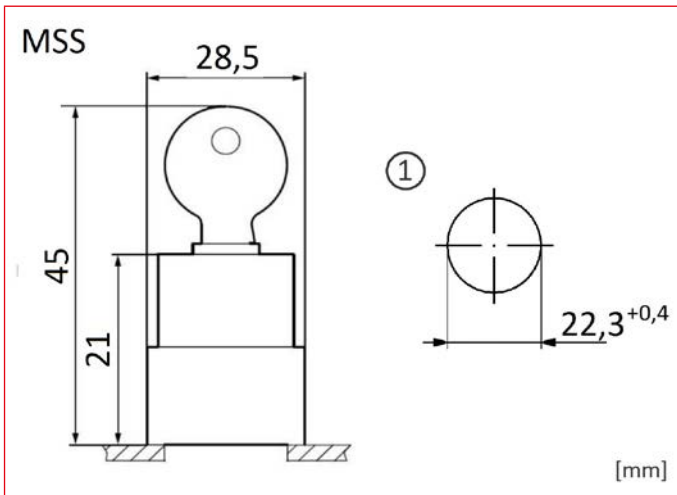


MSS11020T


Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Angle: 50°
- Holder included (for 2 contact blocks + LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Key switch, 2 positions, 50°, momentary, Ronis SB30	MSS		MSS11020T



Series MS - Key-Switches, Latching

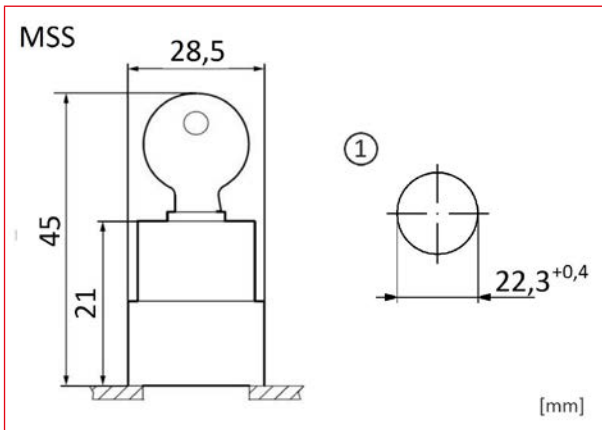


MSS11020RS

Schrack-Info

- Protection degree: IP66
- Diameter 28.5mm
- Angle: 50°
- Holder included (for 2 contact blocks + LED)

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Key switch, 2 positions, 50°, latching, Ronis SB30	MSS		MSS11020RS
Key switch button, 3 positions, 2x50°, latching	MSS		MSS11030RS

Series MS - Joysticks 2 Positions

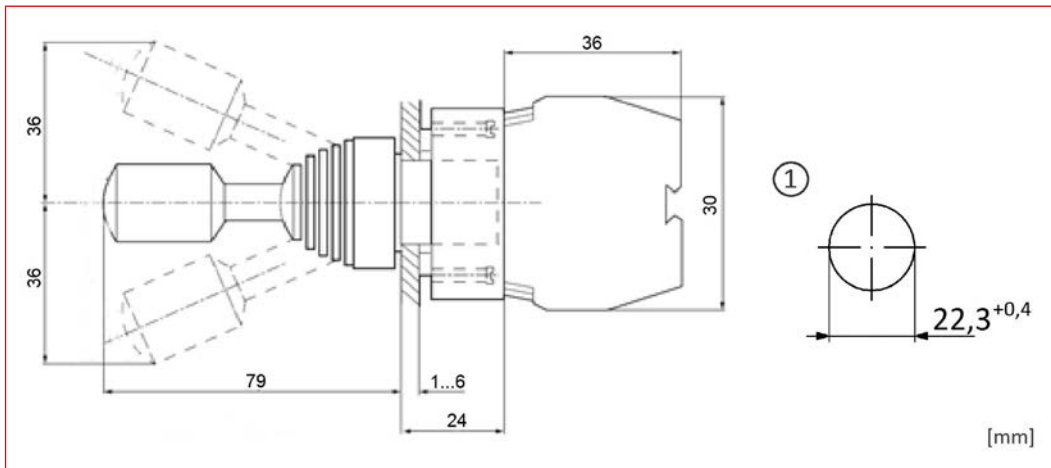


MSJ11320RV

Schrack-Info

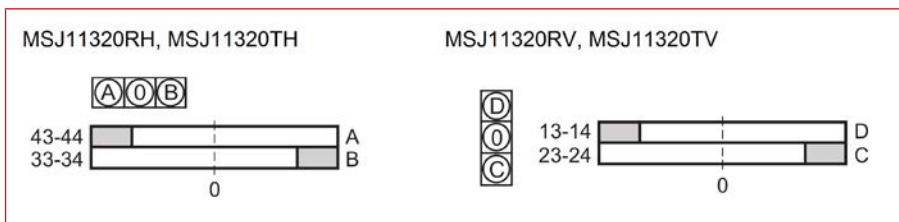
- Protection degree: IP65
- Including special holder and contacts
- Momentary or latching

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Joystick 2 positions, latching horizontal, 2 NO	MSJ		MSJ11320RH
Joystick 2 positions, latching vertical, 2NO	MSJ		MSJ11320RV
Joystick 2 positions, horizontal, 2NO	MSJ		MSJ11320TH
Joystick 2 positions, vertical, 2NO	MSJ		MSJ11320TV



Order no. blue: on stock, usually ready for delivery on the day of order

Series MS - Joysticks 4 Positions

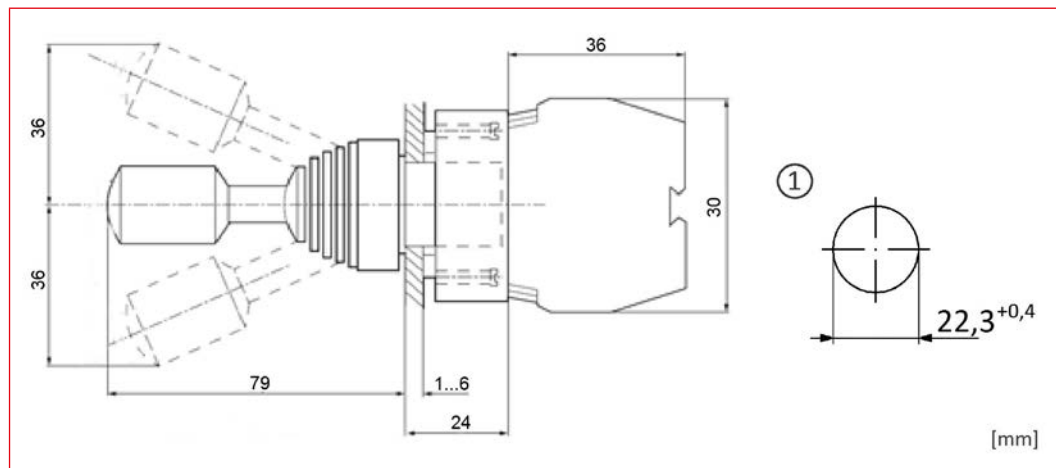


MSJ11740R

Schrack-Info

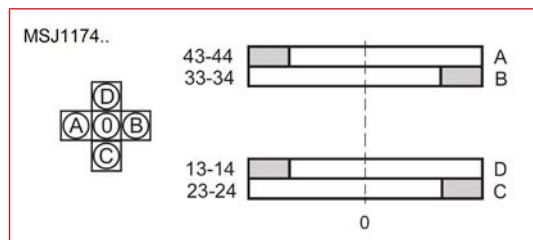
- Protection degree: IP65
- Including special holder and contacts
- Momentary or latching

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Joystick 4 positions, latching, 4NO	MSJ		MSJ11740R
Joystick 4 positions, 4NO	MSJ		MSJ11740T

Series MS - Housing for Buzzer

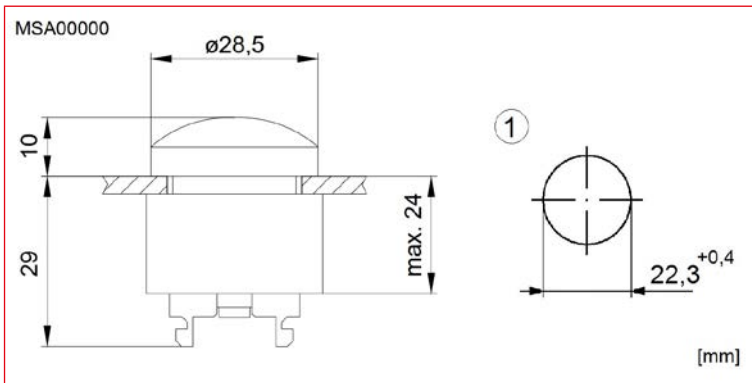


MSA00000

Schrack-Info

- Protection degree: IP40
- Diameter 28.5mm
- Holder included (for bulb socket BA9s)

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Cover for buzzer (IP40)	MSA		MSA00000

Series MS - Buzzer



MSA00005

Schrack-Info

- For bulb socket BA9s: MSZF0000
- Volume level 80dB
- Operational current 25mA

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Buzzer, cont. tone, 24VDC, (for socket BA9s)	MSA		MSA00005

Series MS - Buzzer Complete Devices

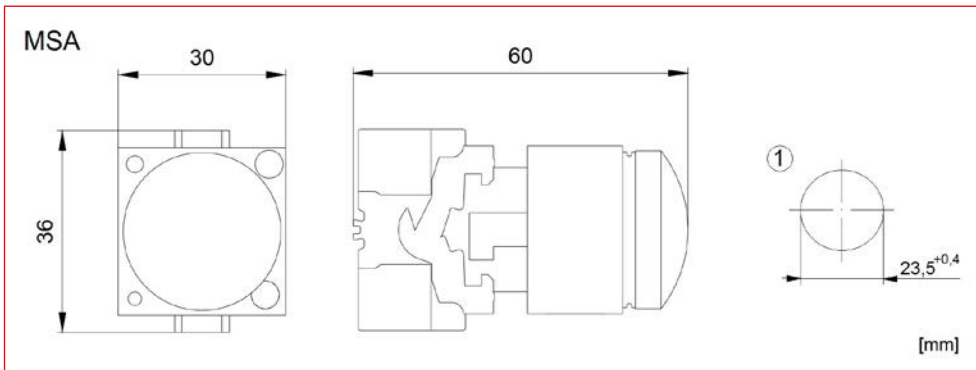


MSA10005

Schrack-Info

- Volume level 80dB
- Continuous tone 2.4kHz
- 24V AC/DC, 230V AC/DC
- Diameter 28mm
- Continuous duty 100%

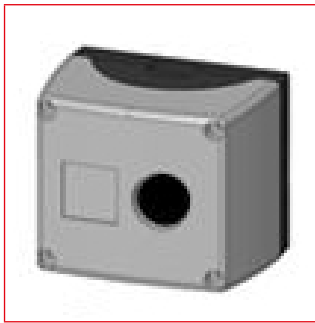
Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Acoustic indicator, continuous tone 2,4 kHz, complete, 24VACDC, IP65	MSA		MSA10005
Acoustic indicator, continuous tone 2,4 kHz, complete, 230VACDC, IP65	MSA		MSA1000F

Series MS - Boxes, Surface Mounted, Black/Grey

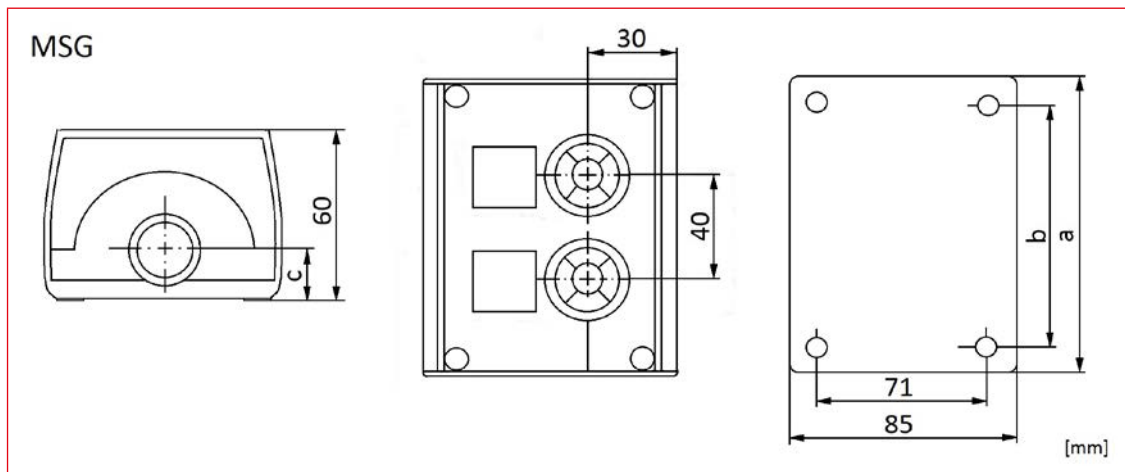


MSG11000

Schrack-Info

- Protection degree: IP66
- Inlets for cable glands (top and bottom)
- 1xM20 at MSG1 ... MSG3
- 1xM25 at MSG4 ... MSG6
- Labelling with snap-in label MSZS000022

Dimensions



Type	a	b	c	
MSG11000 (1-hole)	85	54	23	M20
MSG21000 (2-hole)	114	83	23	M20
MSG31000 (3-hole)	154	123	23	M20
MSG41000 (4-hole)	194	163	23	M25
MSG61000 (6-hole)	280	249	23	M25

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Box, surface mounted, 1-hole, black/grey	MSG		MSG11000
Box, surface mounted, 2-holes, black/grey	MSG		MSG21000
Box, surface mounted, 3-holes, black/grey	MSG		MSG31000
Box, surface mounted, 4-holes, black/grey	MSG		MSG41000
Box, surface mounted, 6-holes, black/grey	MSG		MSG61000

Series MS - Boxes, Surface Mounted, Black/Yellow

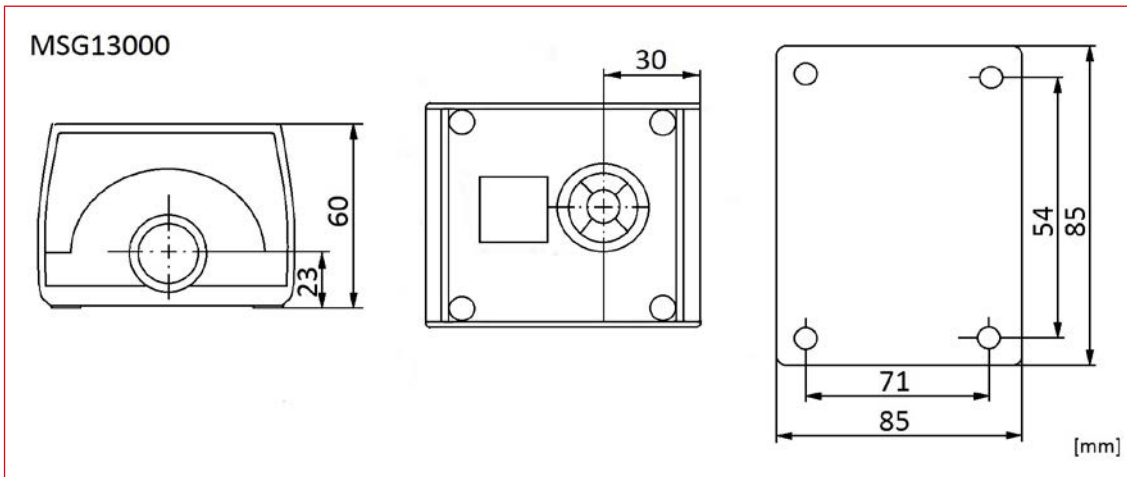


MSG13000

Schrack-Info

- Protection degree: IP66
- Inlets for 1 M20 cable glands (top and bottom)
- Labelling with snap-in label MSZS000022

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Box, surface mounted, 1-hole, black/yellow	MSG		MSG13000

Series MS - Contact Blocks, screw Connection

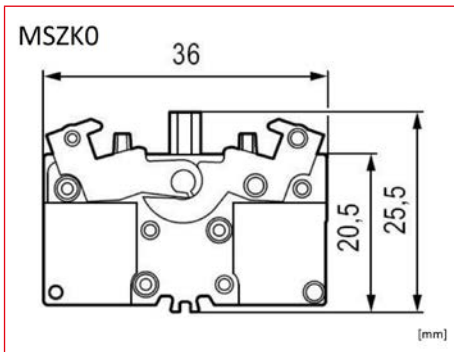


MSZK0100

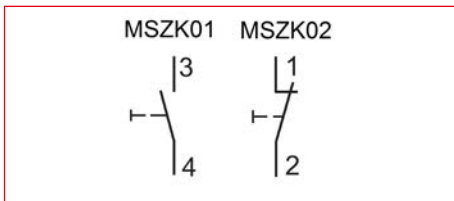
Schrack-Info

- Protection degree case: IP40
- Protection degree terminal: IP20
- Switching capacity
- AC15/24...230V 6A
- AC15/400V 3A

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Contact block, 1NO, screw connection	MSZ		MSZK0100
Contact block, 1NC, screw connection	MSZ		MSZK0200

Series MS - Contact Blocks, Cage Clamp

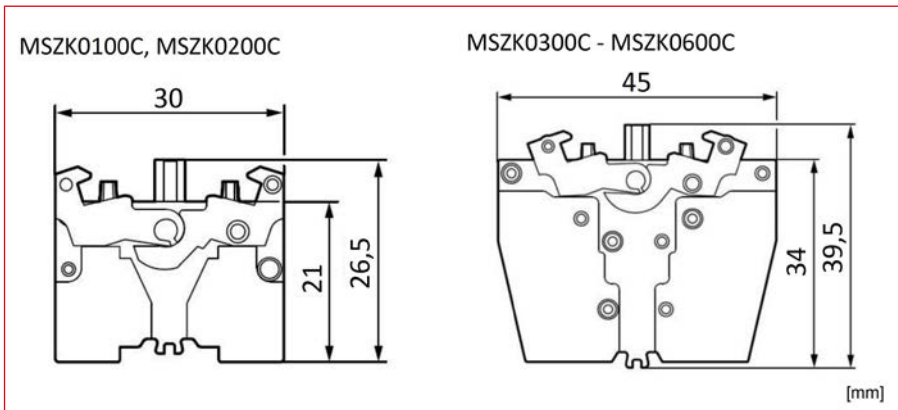


MSZK0100C

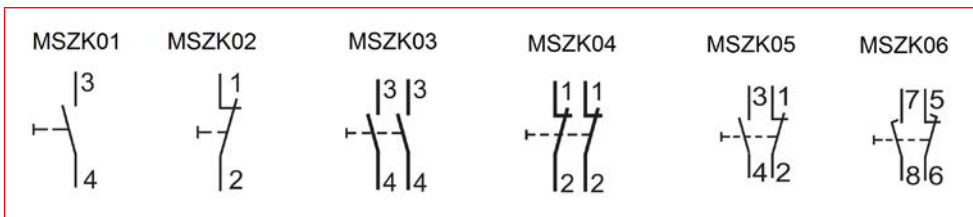
Schrack-Info

- Protection degree case: IP40
- Protection degree terminal: IP20
- Switching capacity
- AC15/24...230V 6A
- AC15/400V 3A
- including label with text

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Contact block, 1NO, cage clamp	MSZ		MSZK0100C
Contact block, 1NC, cage clamp	MSZ		MSZK0200C
Contact block, 2NO, cage clamp	MSZ		MSZK0300C
Contact block, 2NC, cage clamp	MSZ		MSZK0400C
Contact block, 1NO + 1NC, cage clamp	MSZ		MSZK0500C
Contact block, 1 early make NO + 1 delayed NC, cage clamp	MSZ		MSZK0600C

Series MS - LED 24V ACDC, Screw Connection

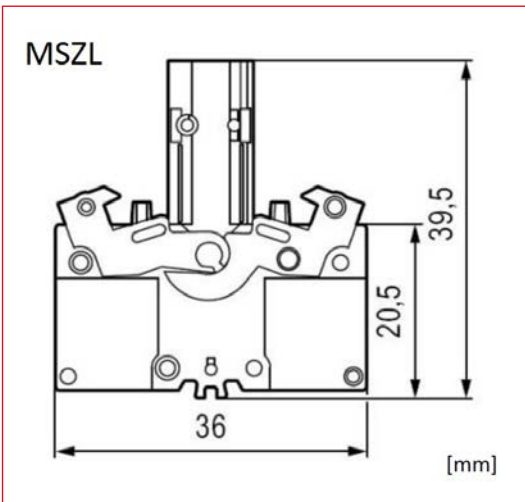


MSZL5005

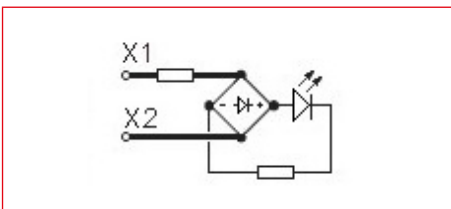
Schrack-Info

- Protection degree case and terminals: IP20
- Operational voltage 21,6 ... 26,4V AC/DC
- Operational current max. 18mA

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
LED unit, red, 24VAC/DC	MSZ		MSZL2005
LED unit, green, 24VAC/DC	MSZ		MSZL4005
LED unit, blue, 24VAC/DC	MSZ		MSZL5005
LED unit, white, 24VAC/DC	MSZ		MSZL6005



Series MS - LED 24V ACDC, Cage Clamp

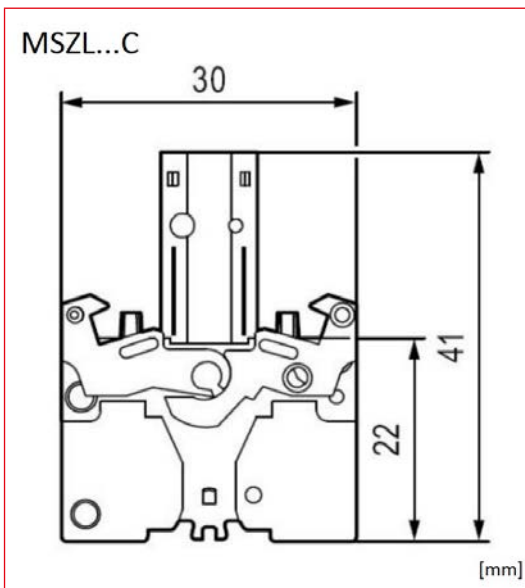


MSZL2005C

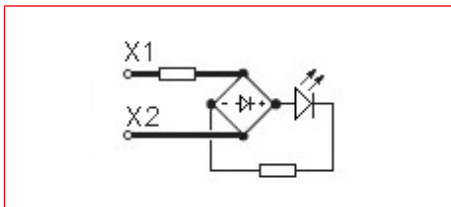
Schrack-Info

- Protection degree case and terminals: IP20
- Operational voltage 21,6 ... 26,4V AC/DC
- Operational current max. 18mA

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
LED unit, red, 24VAC/DC, cage clamp	MSZ		MSZL2005C
LED unit, green, 24VAC/DC, cage clamp	MSZ		MSZL4005C
LED unit, blue, 24VAC/DC, cage clamp	MSZ		MSZL5005C
LED unit, white, 24VAC/DC, cage clamp	MSZ		MSZL6005C

Series MS - LED 230V AC, Screw Connection

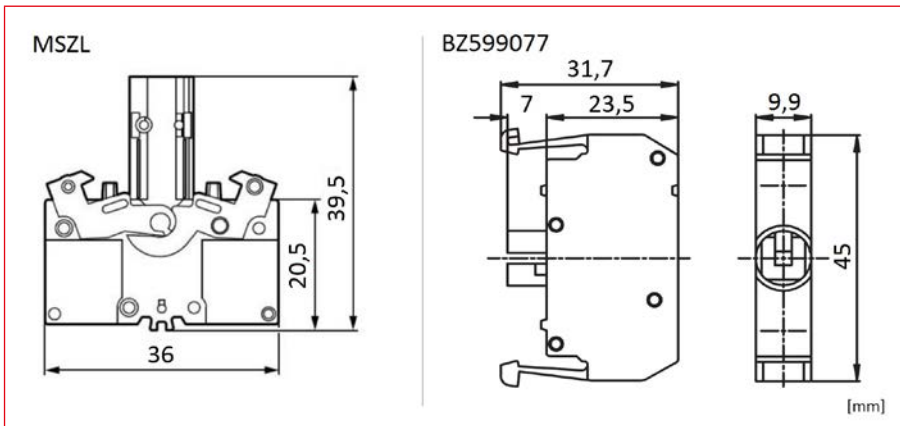


MSZL2003

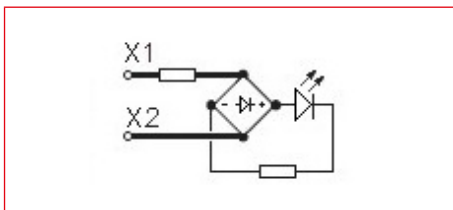
Schrack-Info

- Protection degree case and terminals: IP20
- Operational voltage 230VAC (-15%, +10%)
- Operational current max. 17mA

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
LED unit, red, 230VAC	MSZ		MSZL2003
LED unit, green, 230VAC	MSZ		MSZL4003
LED unit, blue, 230VAC	MSZ		MSZL5003
LED unit, white, 230VAC	MSZ		MSZL6003



Series MS - LED 230V AC, Cage Clamp

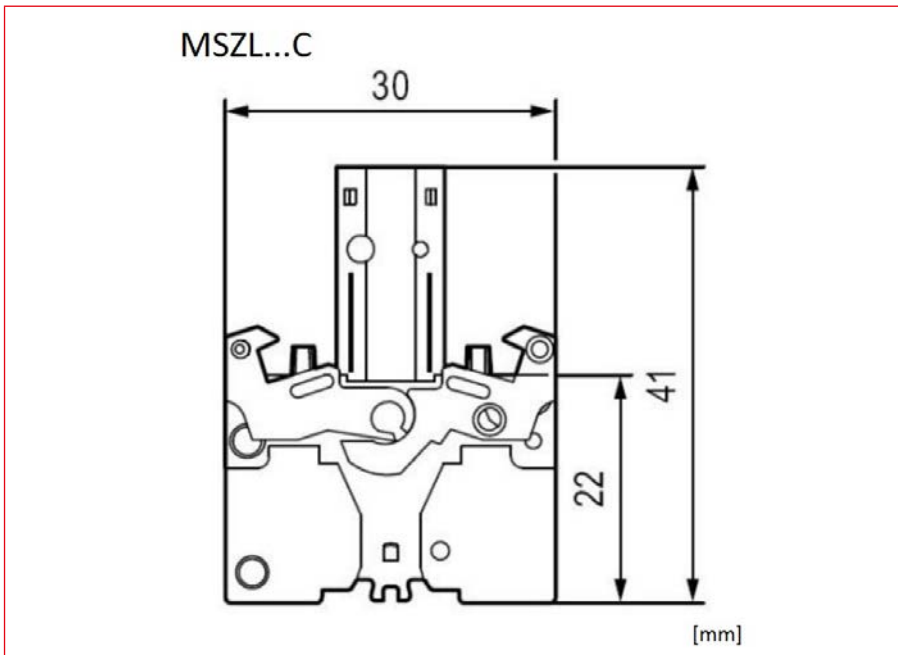


MSZL2003C

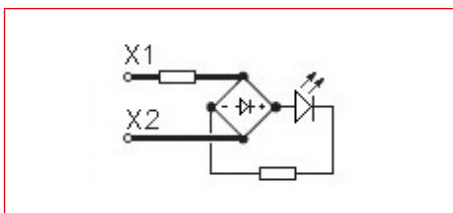
Schrack-Info

- Protection degree case and terminals: IP20
- Operational voltage 230VAC (-15%, +10%)
- Operational current max. 17mA

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
LED unit, red, 230VAC, cage clamp	MSZ		MSZL2003C
LED unit, green, 230VAC, cage clamp	MSZ		MSZL4003C
LED unit, blue, 230VAC, cage clamp	MSZ		MSZL5003C
LED unit, white, 230VAC, cage clamp	MSZ		MSZL6003C

Series MS - Label Holders

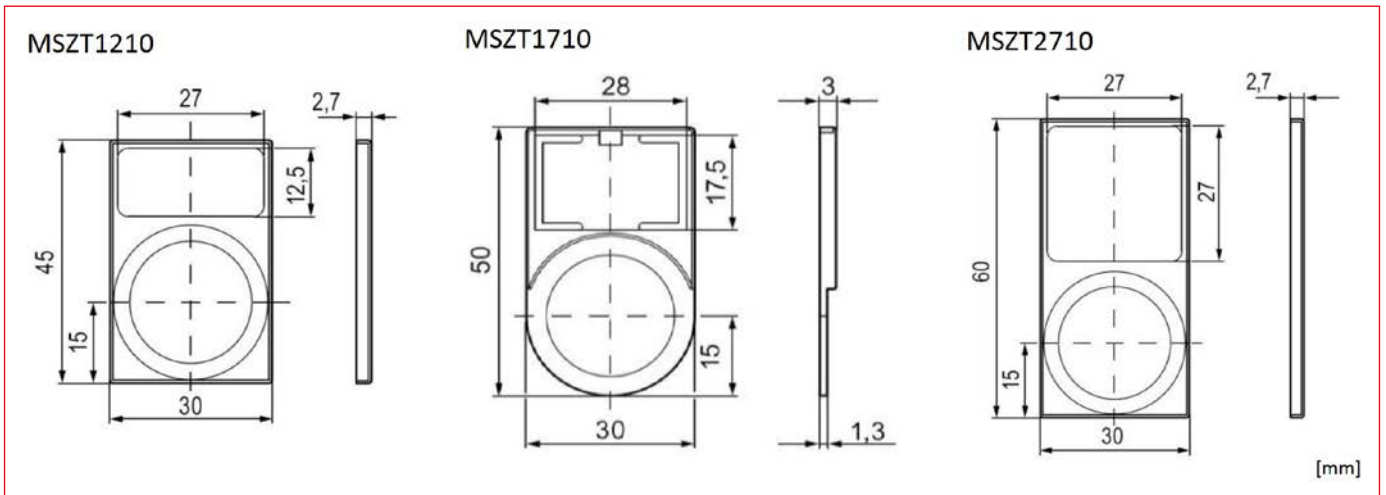


MSZT1710

Schrack-Info

- Label holder fitted with Self-adhesive tape
- Fitting labels
- For MSZT1210 - MSZS....12
- For MSZT1710 - MSZS....17
- For MSZT2710 - MSZS....27

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Tag holder for adhesive plate 12.5x27mm	MSZ		MSZT1210
Tag holder for snap-in plate 17.5x28mm	MSZ		MSZT1710
Tag holder for adhesive plate 27x27mm	MSZ		MSZT2710



Series MS - Label Holders for Twin Push Buttons

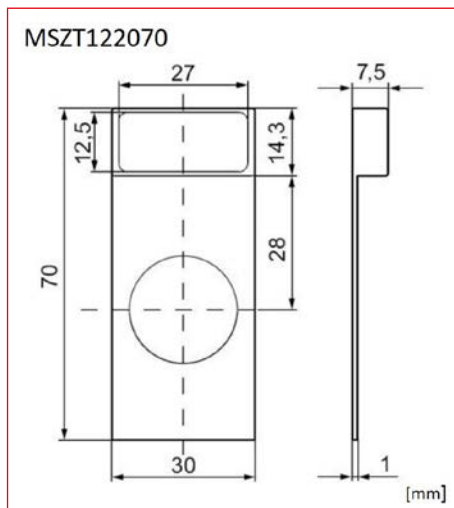


MSZT122070

Schrack-Info

- Label holder fitted with Self-adhesive tape
- Fitting labels MSZS.... 12

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Tag holder for twin PB (for adhesive plate 12.5x27mm)	MSZ		MSZT122070

Series MS - Label Holders for Joysticks

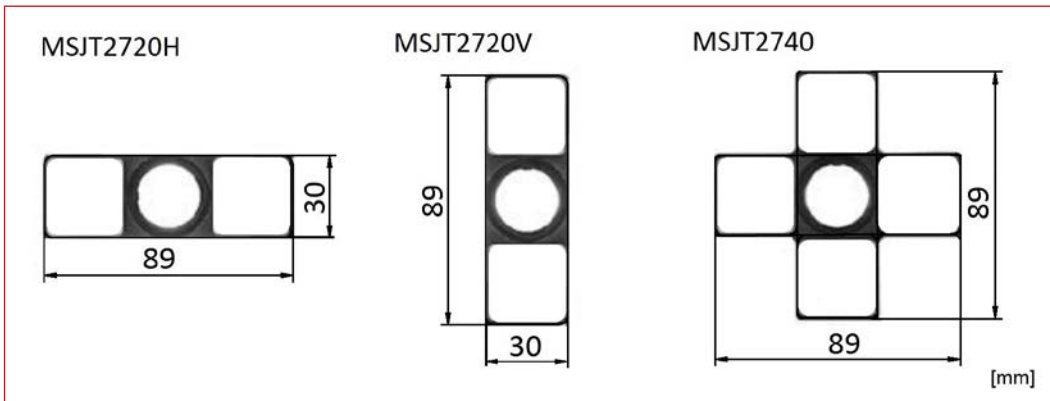


MSJT2720H-

Schrack-Info

- Label holder fitted with Self-adhesive tape
- Fitting labels MSZS000027

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Tag holder for joystick 2 positions, horizontal (for 2 plates 27x27)	MSJ		MSJT2720H
Tag holder for joystick 2 positions, vertical (for 2 plates 27x27)	MSJ		MSJT2720V
Tag holder for joystick 4 positions, (for 4 plates 27x27)	MSJ		MSJT2740

Series MS - Labels Adhesive, 12.5mm



MSZS000012

Schrack-Info

- Self-adhesive
- Label without text for individual inscription from frontside
- For label holders MSZT1210 und MSZT122070

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Plate 12,5x27mm, aluminium, adhesive, without text	MSZ		MSZS000012
Plate 12,5x27mm, aluminium, adhesive, arrow vertical	MSZ		MSZS001512
Plate 12,5x27mm, aluminium, adhesive, arrow horizontal	MSZ		MSZS001612

Series MS - Labels Snap-in, 17.5mm



MSZS000217



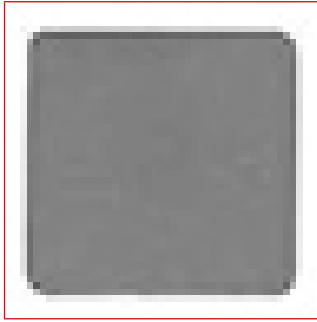
MSZS000517

Schrack-Info

- To be snapped on label holder MSZT1710
- Label without text for individual inscription from frontside

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Plate 17,5x28mm, aluminium, snap-in, "EIN"	MSZ		MSZS000217
Plate 17,5x28mm, aluminium, snap-in, "AUS"	MSZ		MSZS000317
Plate 17,5x28mm, aluminium, snap-in, "AUF"	MSZ		MSZS000417
Plate 17,5x28mm, aluminium, snap-in, "AB"	MSZ		MSZS000517
Plate 17,5x28mm, aluminium, snap-in, "ZU"	MSZ		MSZS000617
Plate 17,5x28mm, aluminium, snap-in, "BETRIEB"	MSZ		MSZS000717
Plate 17,5x28mm, aluminium, snap-in, "STÖRUNG"	MSZ		MSZS000817
Plate 17,5x28mm, aluminium, snap-in, "START"	MSZ		MSZS000917
Plate 17,5x28mm, aluminium, snap-in, "HALT"	MSZ		MSZS001017
Plate 17,5x28mm, aluminium, snap-in, "STOP"	MSZ		MSZS001117
Plate 17,5x28mm, aluminium, snap-in, "STOP START"	MSZ		MSZS001217
Plate 17,5x28mm, aluminium, snap-in, "HAND AUTO"	MSZ		MSZS001317
Plate 17,5x28mm, aluminium, snap-in, "0 I"	MSZ		MSZS001417
Plate 17,5x28mm, aluminium, snap-in, arrow vertical	MSZ		MSZS001517
Plate 17,5x28mm, aluminium, snap-in, arrow horizontal	MSZ		MSZS001617
Plate 17,5x28mm, aluminium, snap-in, without text	MSZ		MSZS001717
Plate 17,5x28mm, aluminium, snap-in, "ON"	MSZ		MSZS010217
Plate 17,5x28mm, aluminium, snap-in, "OFF"	MSZ		MSZS010317
Plate 17,5x28mm, aluminium, snap-in, "UP"	MSZ		MSZS010417
Plate 17,5x28mm, aluminium, snap-in, "DOWN"	MSZ		MSZS010517
Plate 17,5x28mm, aluminium, snap-in, "CLOSE"	MSZ		MSZS010617
Plate 17,5x28mm, aluminium, snap-in, "RUNNING"	MSZ		MSZS010717
Plate 17,5x28mm, aluminium, snap-in, "FAULT"	MSZ		MSZS010817
Plate 17,5x28mm, aluminium, snap-in, "MAN AUTO"	MSZ		MSZS011317
Plate 17,5x28mm, aluminium, snap-in, "AUS EIN"	MSZ		MSZS020317
Plate 17,5x28mm, aluminium, snap-in, "OFFEN"	MSZ		MSZS020417
Plate 17,5x28mm, aluminium, snap-in, "HAND 0 AUTO"	MSZ		MSZS021317
Plate 17,5x28mm, aluminium, snap-in, "I 0 II"	MSZ		MSZS021417
Plate 17,5x28mm, aluminium, snap-in, "OFF ON"	MSZ		MSZS030317
Plate 17,5x28mm, aluminium, snap-in, "OPEN"	MSZ		MSZS030417
Plate 17,5x28mm, aluminium, snap-in, "MAN 0 AUTO"	MSZ		MSZS031317

Series MS - Labels Adhesive 22mm



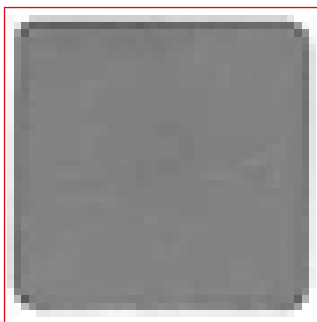
MSZS000022

Schrack-Info

- Self-adhesive
- Label without text for individual inscription from frontside
- For inscription of surface mounted boxes MSG...

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Plate 22x22mm, aluminium, adhesive, without text	MSZ		MSZS000022

Series MS - Labels Adhesive 27mm



MSZS000027

Schrack-Info

- Self-adhesive
- Label without text for individual inscription from frontside
- For label holders MSJT27... and MSZT2710

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Plate 27x27mm, aluminium, adhesive, without text	MSZ		MSZS000027

Series MS - Labels for Emergency Stop Push Buttons, D=80mm



MSZS306080

Schrack-Info

- Self-adhesive
- Emergency - stop labels (4 languages) including label with text

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Plate 80mm dia, yellow, without text	MSZ		MSZS300080
Plate 80mm dia, yellow, "NOT-HALT" G, E, I, ES	MSZ		MSZS306080
Plate 80mm dia, yellow, "NOT-AUS"	MSZ		MSZS308080
Plate 60mm dia, yellow, "NOT-HALT" G, E, I, ES	MSZ		MSZS306060



Series MS - Accessories



MSZH0001



MSZX0005

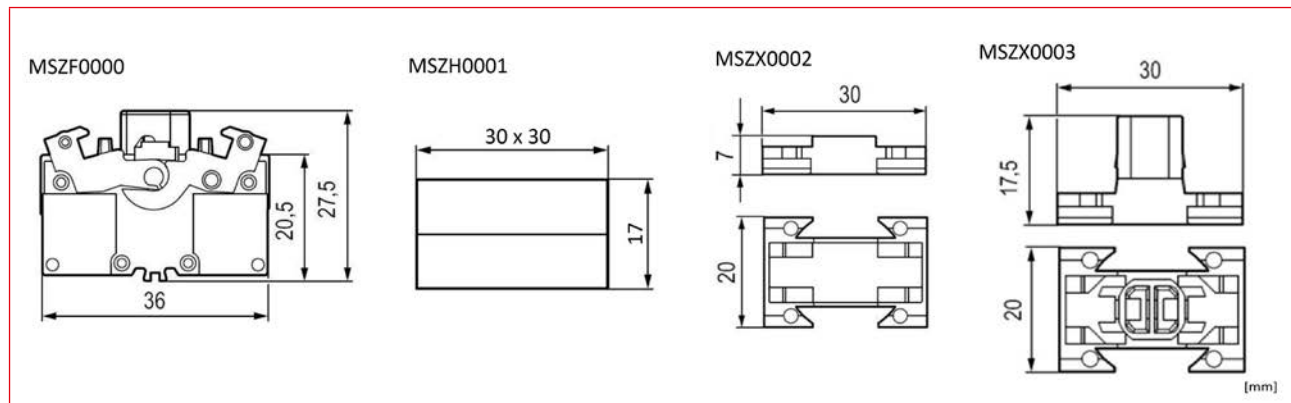


MSZX1011

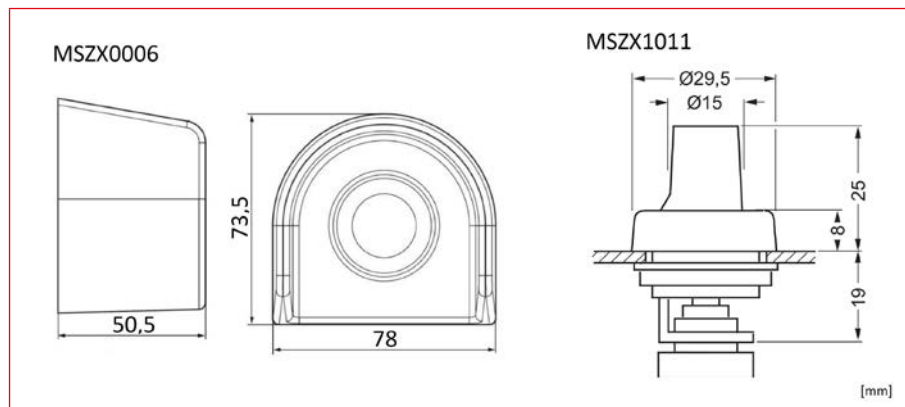
Schrack-Info

- MSZF000 for buzzer MSA00005
- MSZH0001 as spare part (included at all devices)
- MSZX1011 potentiometer-knob without potentiometer, scale plate 1 ... 10, fitting potentiometer: 6mm , 30 ... 32mm length, protection degree IP65
- MSZX0002 included in scope of supply of push button and toggle handles (illuminated)
- MSZX0003 carrier for toggle handle, key switches and double push buttons





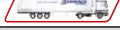





Dimensions



Dimensions



Series MS - Accessories

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Bulb socket BA9s	MSZ		MSZF0000
Neon lamp 200-250V clear			BZ599040
Neon lamp 24V 1.2W			BZ599045
Holder for devices 22.3mm bore (1 -6mm panels)	MSZ		MSZH0001
Protection cover, transparent, for push-buttons (IP67)	MSZ		MSZX0001
Carrier for 2 contact blocks + LED or 3 contact blocks (3 elements)	MSZ		MSZX0002
Carrier for 3 contact blocks	MSZ		MSZX0003
Key Ronis SB30	MSZ		MSZX0005
Protective collar for emergency-stop switches, yellow	MSZ		MSZX0006
Blind-cover black, 22.3mm bore	MSZ		MSZX1001
Dismantling tool for devices with cage clamp	MSZ		MSZX1002
Dismantling tool for devices with screw connection	MSZ		MSZX1003
Rotary knob for potentiometer, scale 0...10, axle 6mm dia	MSZ		MSZX1011



Series MSI - Signal Towers, Basic Module

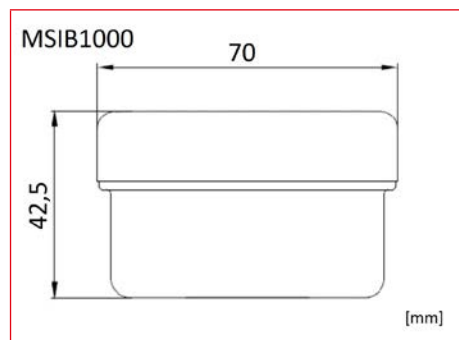


MSIB1000

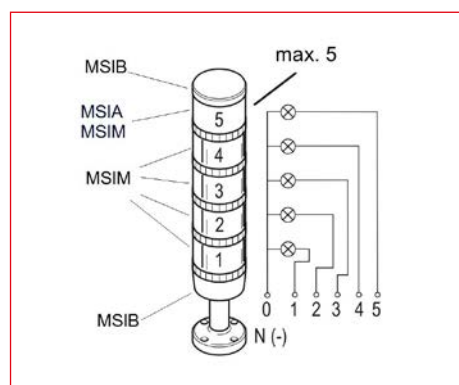
Schrack-Info

- Protection degree: IP65
- For assembling of up to 5 modules
- Screw terminals
- Top cover of basic-module used as cover of top mounted single module

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Basic module with screw terminals		MSIB1000

Series MSI - Signal Towers, Single Modules

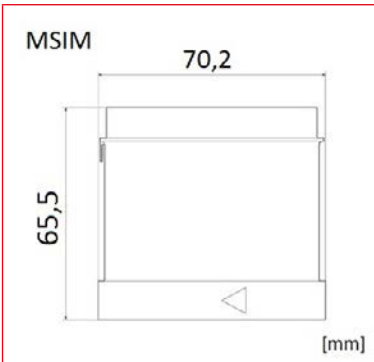


MSIM2003B

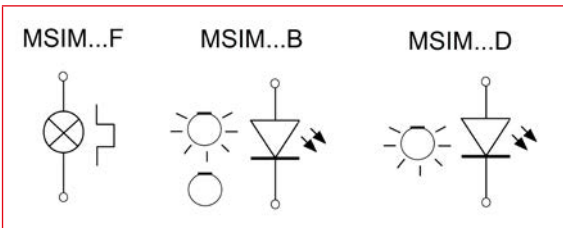
Schrack-Info

- Protection degree: IP65
- Current consumption
- Continuous light... 25mA

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Signal light LED, red, 230VAC, flashing		MSIM2003B
Signal light LED, red, 230VAC, continuous		MSIM2003D
Flash-light, red, 230VAC		MSIM2003F
Signal light LED, red, 24VACDC, flashing		MSIM2005B
Signal light LED, red, 24VACDC, continuous		MSIM2005D
Flash-light, red, 24VDC		MSIM2005F
Signal light LED, yellow, 230VAC, flashing		MSIM3003B
Signal light LED, yellow, 230VAC, continuous		MSIM3003D
Flash-light, yellow, 230VAC		MSIM3003F
Signal light LED, yellow, 24VACDC, flashing		MSIM3005B
Signal light LED, yellow, 24VACDC, continuous		MSIM3005D
Flash-light, yellow, 24VDC		MSIM3005F
Signal light LED, green, 230VAC, flashing		MSIM4003B
Signal light LED, green, 230VAC, continuous		MSIM4003D
Signal light LED, green, 24VACDC, flashing		MSIM4005B
Signal light LED, green, 24VACDC, continuous		MSIM4005D
Signal light LED, blue, 230VAC, flashing		MSIM5003B
Signal light LED, blue, 230VAC, continuous		MSIM5003D
Signal light LED, blue, 24VACDC, flashing		MSIM5005B
Signal light LED, blue, 24VACDC, continuous		MSIM5005D
Signal light LED, clear, 230VAC, continuous		MSIM7003D
Flash-light, clear, 230VAC		MSIM7003F
Signal light LED, clear, 24VACDC, flashing		MSIM7005B
Signal light LED, clear, 24VACDC, continuous		MSIM7005D

Order no. blue: on stock, usually ready for delivery on the day of order

Series MSI - Signal Towers, Acoustic Modules

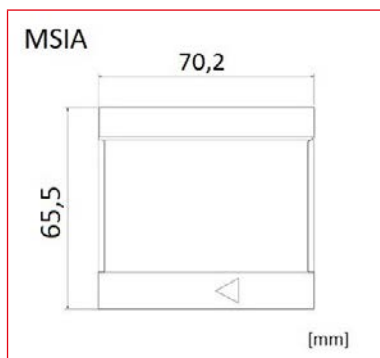


MSIA1003

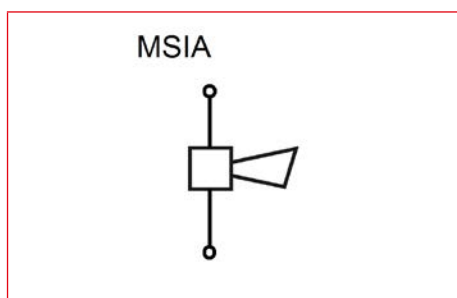
Schrack-Info

- Protection degree: IP65
- Current consumption 25mA
- 86dB, impulse or continuous tone selectable by included wire bridge
- Fix mounted top cover
- Only 1 acoustic signal at each signal tower mountable (in top position)
- Flash light ... 35mA
- Eamp not exchangeable

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Acoustic signal, 230VAC, continuous/pulse		MSIA1003
Acoustic signal, 24VACDC, continuous/pulse		MSIA1005

Series MSI - Signal Towers, Mounting Accessories

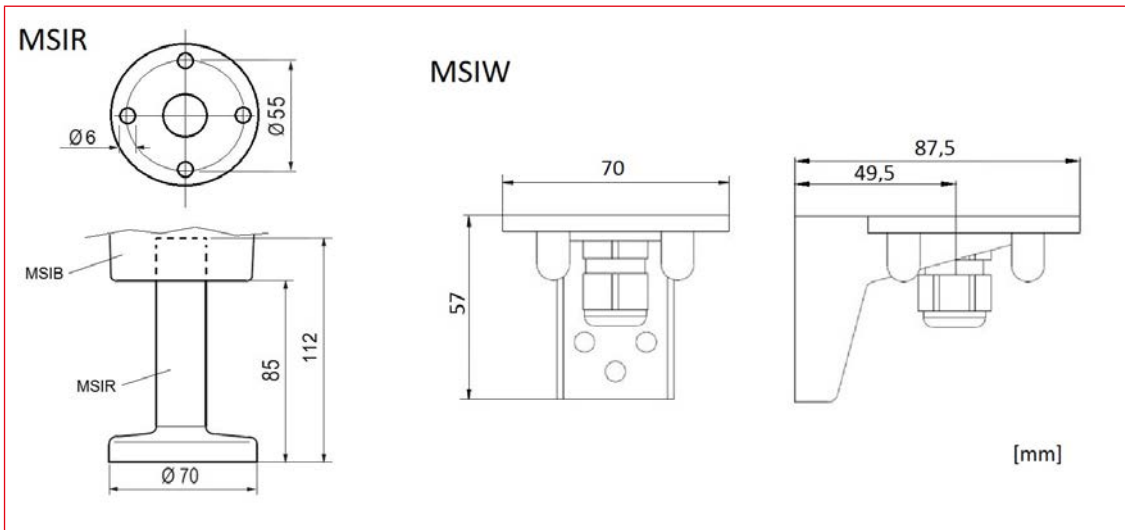


MSIR1000

Schrack-Info

- Mounting of base MSIB.....
- Either with MSIR..... on flat surface
- or with MSIR..... and MSIW..... to wall

Dimensions



DESCRIPTION	AVAILABLE	ORDER NO.
Tube 100mm with foot		MSIR1000
Mounting bracket for foot-mounting		MSIW1000

Series MM - Sets



MM900001



MM900011



MM900016



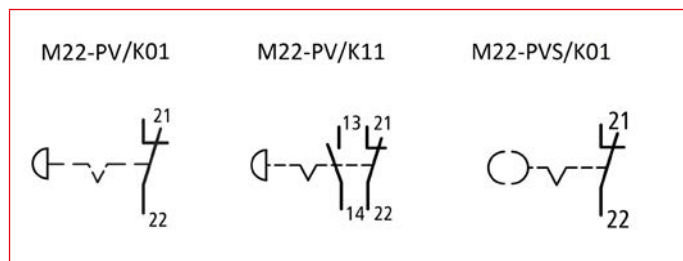
MM216514

Schrack-Info

Prearranged sets consist:

- Command and signalling device
- Mounting adapter
- LED / contact blocks
- Technical data see single devices

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Complete "Emergency Off" switch, key-reset, front mounted, 1NC	M22-PVS/K01		MM216514
Emergency Stop button complete, 1NC front	M22-PV/K01		MM216515
Emergency Stop mushroom button complete, 1NC, 1NO	M22-PV/K11		MM216516
Set of illuminated push-button green 230V with 1NO contact	M22-SET		MM900001
Set of illuminated push-button red 230V with 1NC contact	M22-SET		MM900002
Set of illuminated push-button green 24V with 1NC contact	M22-SET		MM900003
Set of illuminated push-button red 24V with 1NC contact	M22-SET		MM900004
Set of indicator light flat green 230V	M22-SET		MM900005
Set of indicator light flat red 230V	M22-SET		MM900006
Set of indicator light flat green 24V	M22-SET		MM900007
Set of indicator light flat red 24V	M22-SET		MM900008
Set of push-button flat green 1NO contact	M22-SET		MM900009
Set of push-button flat red 1NC contact	M22-SET		MM900010
Set of emergency stop push-button with 1NC contact	M22-SET		MM900011
Set of toggle handle 2 positions, latching with 1NC + 1NO contact	M22-SET		MM900012
Set of toggle handle 3 positions, latching with 1NC + 1NO contact	M22-SET		MM900013
Set of double push-button, red/green 230V with 1NO + 1NC	M22-SET		MM900014
Set of double push-button, red/green 24V with 1NO + 1NC	M22-SET		MM900015
Set of key operated button 2 positions, latching with 1NO + 1NC	M22-SET		MM900016

Series MM - Push Buttons, Flat



MM216596

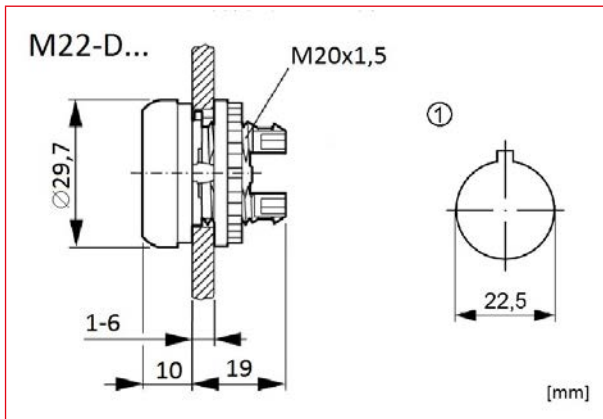


MM216598

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

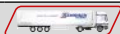

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
flat, momentary, black	M22-D-S		MM216590
flat, momentary, white	M22-D-W		MM216592
flat, momentary, red	M22-D-R		MM216594
flat, momentary, green	M22-D-G		MM216596
flat, momentary, yellow	M22-D-Y		MM216598
flat, momentary, blue	M22-D-B		MM216600
flat, `0`, momentary, red	M22-D-R-X0		MM216605
flat, `0`, momentary, black	M22-D-S-X0		MM216609
flat, `1`, momentary, green	M22-D-G-X1		MM216607
flat, `1`, momentary, white	M22-D-W-X1		MM216611
flat, momentary, without plate	M22-D-X		MM216602
Latching			
flat, latching, black	M22-DR-S		MM216613
flat, latching, red	M22-DR-R		MM216617
flat, latching, green	M22-DR-G		MM216619
flat, latching, white	M22-DR-W		MM216615
flat, latching, yellow	M22-DR-Y		MM216621
flat, latching, blue	M22-DR-B		MM216623
flat, `1`, latching, white	M22-DR-W-X1		MM216634
flat, latching, without plate	M22-DR-X		MM216625
Series MM - Plates for Push Buttons, Flat			
Button plate, flat, with inscription, red with white "0"	M22-XD-R-X0		MM218153
Button plate, flat, with inscription, black with white "0"	M22-XD-S-X0		MM218154
Button plate, flat, with inscription, green with white "1"	M22-XD-G-X1		MM218165
Button plate, flat, with inscription, black with white "1"	M22-XD-S-X1		MM218166
Button plate, flat, with inscription, black with white "+ "	M22-XD-S-X4		MM218170

Series MM - Push Buttons, Flat

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Series MM - Plates for Push Buttons, Flat			
Button plate, flat, with inscription, black with white "-"	M22-XD-S-X5		MM218171
Button plate flat, black "Auf"	M22-XD-S-D3		MM218185
Button plate flat, black "Ab"	M22-XD-S-D4		MM218186
Button plate, flat, with inscription, red with white "Stop"	M22-XD-R-GB0		MM218194
Plate for Push-button, black "Arrow"	M22-XD-S-X7		MM218173
Button plate, flush, black	M22-XD-S		MM216421
Button plate, flush, white	M22-XD-W		MM216422
Button plate, flush, red	M22-XD-R		MM216423
Button plate, flush, green	M22-XD-G		MM216424
Button plate, flush, yellow	M22-XD-Y		MM216425
Button plate, flush, blue	M22-XD-B		MM216426

Series MM - Push Buttons, High



MM216641

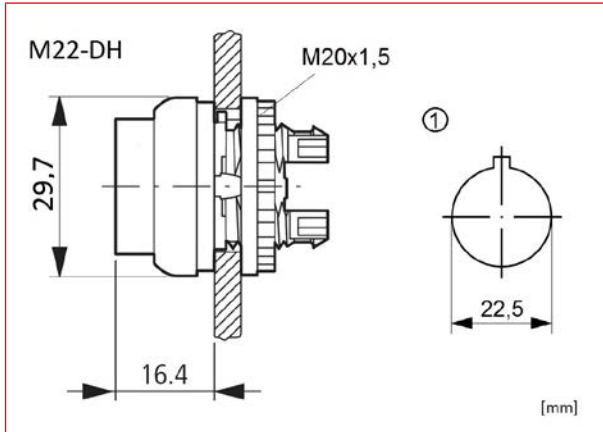


MM216643

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
extended, momentary, black	M22-DH-S		MM216636
extended, momentary, red	M22-DH-R		MM216641
extended, momentary, green	M22-DH-G		MM216643
extended, momentary, blue	M22-DH-B		MM216649
extended, '0', momentary, red	M22-DH-R-X0		MM216655

Series MM - Push Buttons Illuminated, Flat



MM216929

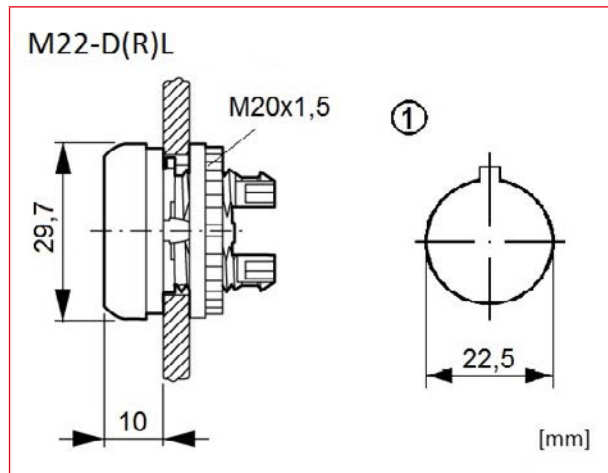


MM216931

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 29.7mm
- Type M22-D(R)L-X without plate
- Afterwards inscription of push buttons possible
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
flat, momentary, white	M22-DL-W		MM216922
flat, momentary, red	M22-DL-R		MM216925
flat, momentary, green	M22-DL-G		MM216927
flat, momentary, yellow	M22-DL-Y		MM216929
flat, momentary, blue	M22-DL-B		MM216931
flat, momentary, red, `0`	M22-DL-R-X0		MM216936
flat, momentary, green, `1`	M22-DL-G-X1		MM216938
flat, momentary, white, `0`	M22-DL-W-X0		MM216940
flat, momentary, white, `1`	M22-DL-W-X1		MM216942
flat, momentary, without plate	M22-DL-X		MM216933
Latching			
flat, latching, white	M22-DRL-W		MM216944
flat, latching, red	M22-DRL-R		MM216946
flat, latching, green	M22-DRL-G		MM216948
flat, latching, yellow	M22-DRL-Y		MM216950
flat, latching, blue	M22-DRL-B		MM216952
flat, latching, red, `0`	M22-DRL-R-X0		MM216957
flat, latching, green, `1`	M22-DRL-G-X1		MM216959
flat, latching, without plate	M22-DRL-X		MM216954
Plates for Illuminated Push Buttons, Flat			
Lens for illuminated Push-button White	M22-XDL-W		MM216441
Lens for illuminated Push-button red	M22-XDL-R		MM216442
Lens for illuminated Push-button green	M22-XDL-G		MM216443
Lens for illuminated Push-button yellow	M22-XDL-Y		MM216444
Lens for illuminated Push-button blue	M22-XDL-B		MM216445
Lens for illuminated Push-button individual	M22-XDL-*-*		MM216446

Series MM - Push Buttons Illuminated, High



MM216967

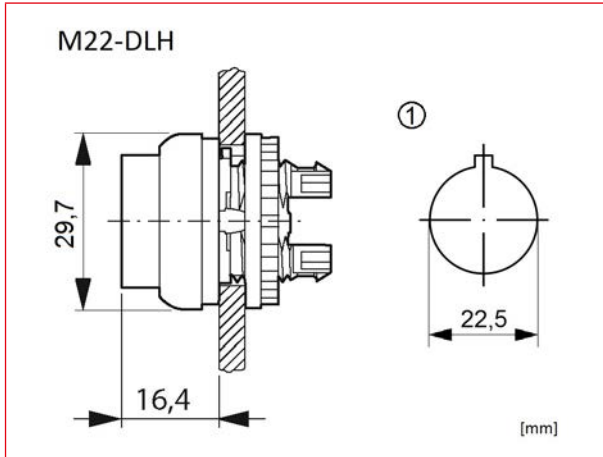


MM216971

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 29.7mm
- Plates for colour changing available
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
extended, momentary, white	M22-DLH-W		MM216965
extended, momentary, red	M22-DLH-R		MM216967
extended, momentary, green	M22-DLH-G		MM216969
extended, momentary, yellow	M22-DLH-Y		MM216971
extended, momentary, blue	M22-DLH-B		MM216973
extended, `0`, momentary, red	M22-DLH-R-X0		MM216975

Series MM - Double Push Buttons



MM216702

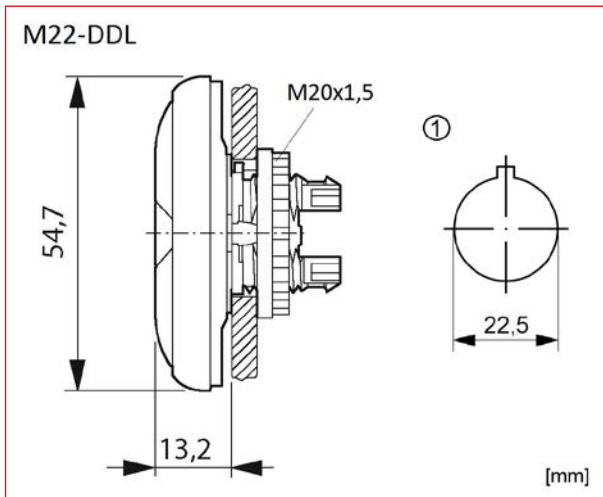


MM216704

Schrack-Info

- With signal lamp center lens white
- LED for retrofit
- Protection degree: IP66
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
illuminated, red/green, momentary	M22-DDL-GR		MM216698
illuminated, red/green, '0/1', momentary	M22-DDL-GR-X1/X0		MM216700
illuminated, red/green, 'STOP/START', momentary	M22-DDL-GR-GB1/GB0		MM216702
illuminated, black/white, momentary	M22-DDL-WS		MM216704
illuminated, black/white, '0/1', momentary	M22-DDL-WS-X1/X0		MM216706
illuminated, black/white, 'STOP/START', momentary	M22-DDL-WS-GB1/GB0		MM216708
illuminated, black/black, 'ARROWS', momentary	M22-DDL-S-X7/X7		MM216710
illuminated black/black, "+/-"	M22-DDL-S-X4/X5		MM218145

Series MM - Signal Lamps Flat



MM216772

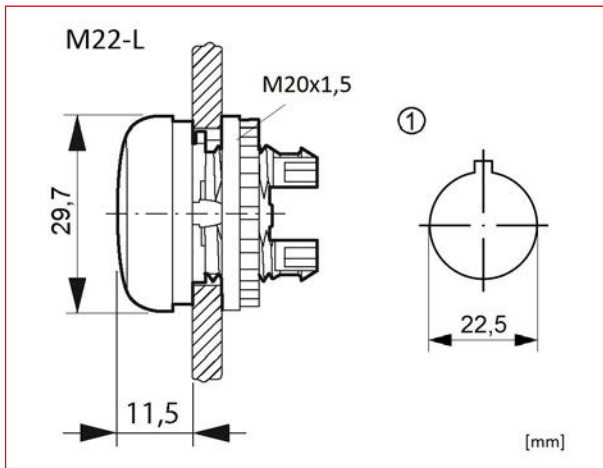


MM216773

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Signal Lamps Flat			
flat, white	M22-L-W		MM216771
flat, red	M22-L-R		MM216772
flat, green	M22-L-G		MM216773
flat, yellow	M22-L-Y		MM216774
flat, blue	M22-L-B		MM216775
flat, without lens	M22-L-X		MM216776
Plates for Signal Lamps Flat			
Lens, indicator light, flush, blank	M22-XL-W		MM216453
Lens, indicator light, flush, red	M22-XL-R		MM216454
Lens, indicator light, flush, green	M22-XL-G		MM216455
Lens, indicator light, flush, yellow	M22-XL-Y		MM216456
Lens, indicator light, flush, blue	M22-XL-B		MM216457



Series MM - Signal Lamps High



MM216779

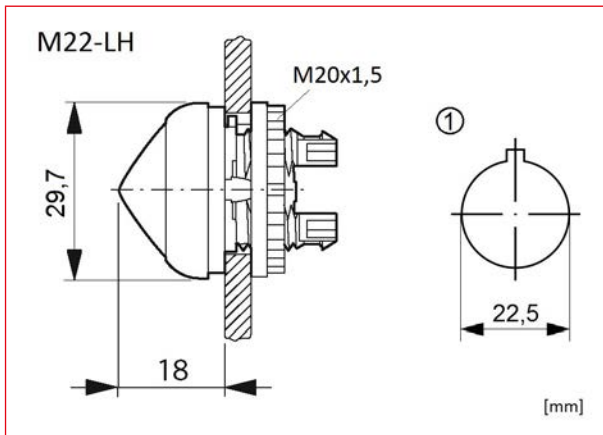


MM216781

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
extended/conical, white	M22-LH-W		MM216778
extended/conical, red	M22-LH-R		MM216779
extended/conical, green	M22-LH-G		MM216780
extended/conical, yellow	M22-LH-Y		MM216781

Series MM - Mushroom Push Buttons, D=40mm



MM216714

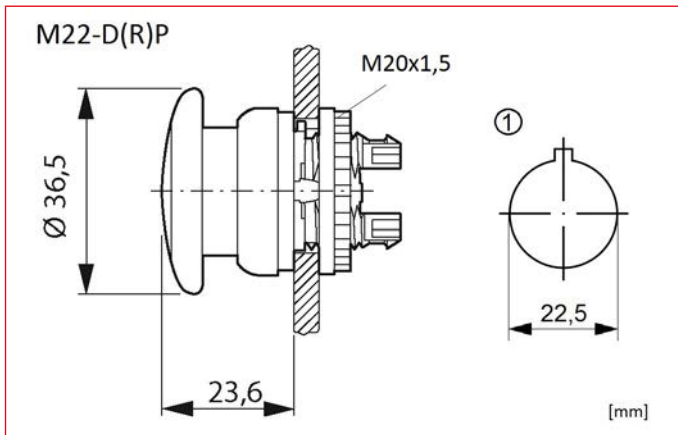


MM216716

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 36.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
momentary, black	M22-DP-S		MM216712
momentary, red	M22-DP-R		MM216714
momentary, green	M22-DP-G		MM216716
momentary, green `1`	M22-DP-G-X1		MM216722
momentary, green	M22-DP-G-X		MM216734
momentary, yellow	M22-DP-Y		MM216718
momentary, red `0`	M22-DP-R-X0		MM216720
Latching			
latching, black	M22-DRP-S		MM216743
latching, red	M22-DRP-R		MM216745
latching, green	M22-DRP-G		MM216747
latching, yellow	M22-DRP-Y		MM216749
latching, red `0`	M22-DRP-R-X0		MM216751
latching, black, without label	M22-DRP-S-X		MM216759
Plates for Mushroom Push Buttons, D=40mm			
Button plate red	M22-XDP-R		MM216437
Button plate, special order, individual	M22-XDP-*-*		MM216440



Order no. blue: on stock, usually ready for delivery on the day of order

Series MM - Emergency Stop Push Buttons Latching, D=40mm

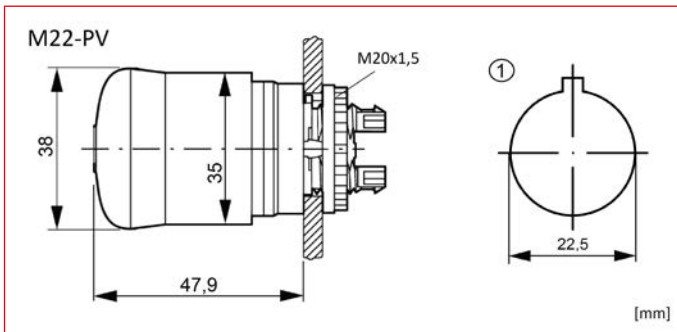


MM216876

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 38mm
- Including knurled nut M20x1.5
- Without mounting adapter
- Reset by pulling or turning

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Pull to Release			
Emergency stop button	M22-PV		MM216876
Turn to Release			
Emergency stop button, non-illuminated, red, unlatched	M22-PVT		MM263467

Series MM - Emergency Stop Push Buttons Illuminated, Latching, D=40mm

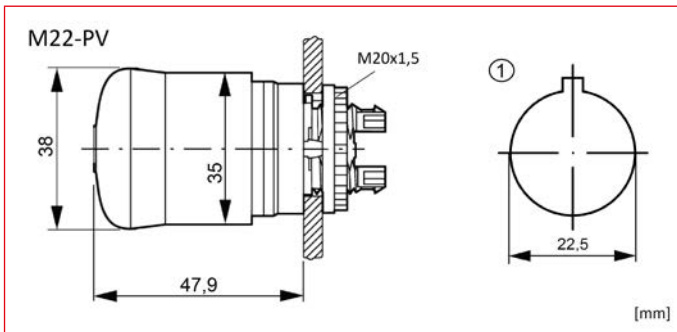


MM216878

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 38mm
- Including knurled nut M20x1.5
- Without mounting adapter
- Reset by pulling or turning

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Pull to Release			
Emergency stop button, illuminated	M22-PVL		MM216878
Turn to Release			
Emergency stop button, illuminated, red, unlatched	M22-PVLT		MM263469



Series MM - Emergency Stop Push Buttons Latching, with Key, D=40mm

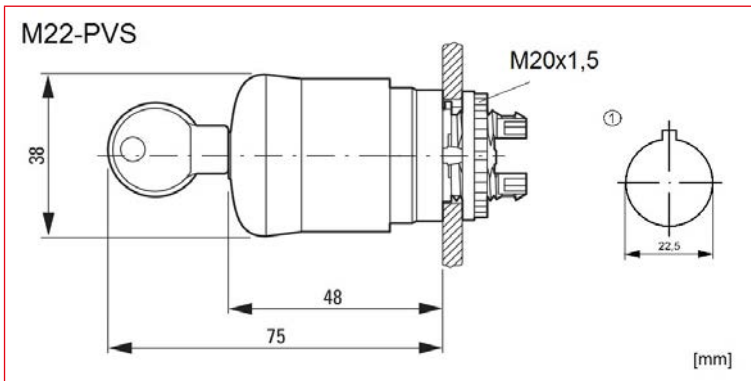


MM216879

Schrack-Info

- Protection degree: IP67, 69K
- Diameter 38mm
- Including knurled nut M20x1.5
- Without mounting adapter
- Unlatching by key

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Emergency stop button, key-operated	M22-PVS		MM216879

Series MM - Emergency Stop Push Buttons, Accessories



MM216471

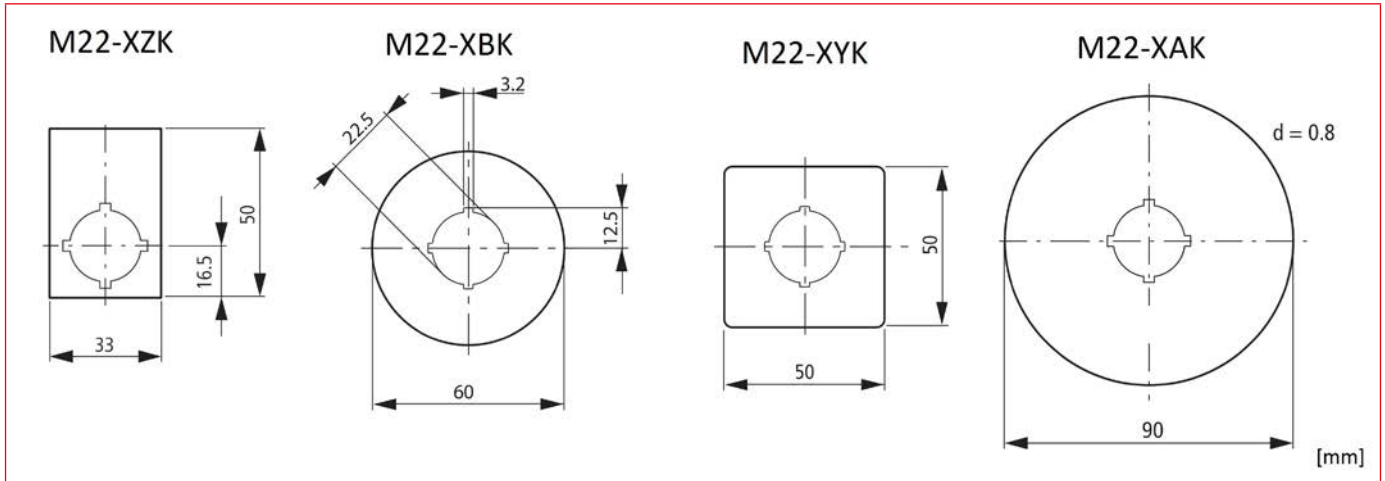


MM216483



MM216416

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Emergency stop label 33x50mm, yellow, plain	M22-XZK		MM216470
Emergency stop label, 60mm dia, yellow, 4 languages	M22-XBK1		MM216483
Emergency stop label, 50x50mm, yellow, 4 languages	M22-XYK1		MM216484
Emergency stop label, 90mm dia, yellow, plain	M22-XAK		MM216464
Emergency stop label, 90mm dia, 4 languages	M22-XAK1		MM216465
Spare key MS1 Standard	M22-ES-MS1		MM216416
Emergency stop label 33x50mm, yellow, NOT-AUS	M22-XZK-D99		MM216471
Emergency stop label, 33x50mm, yellow, Emergency-Stop	M22-XZK-GB99		MM216472



Series MM - Toggle Handles 2 Positions

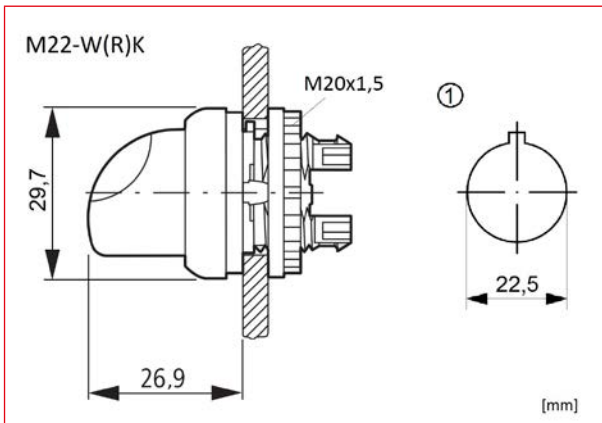


MM216867

Schrack-Info

- Protection degree: IP66
- Diameter 29.7mm
- Latching: 60°
- Momentary: 40°
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
2 positions, momentary, 40°, toggle handle	M22-WK		MM216865
Latching			
2 positions, latching, 60°, toggle handle	M22-WRK		MM216867
2 positions, latching, V-position 60°, toggle handle	M22-WKV		MM216874

Series MM - Toggle Handles 3 Positions

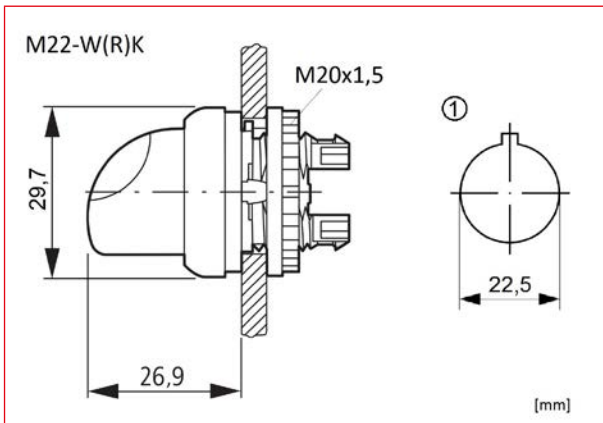


MM216870

Schrack-Info

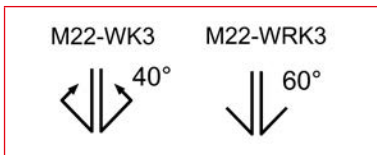
- Protection degree: IP66
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
3 positions, momentary, 40°, toggle handle	M22-WK3		MM216870
Latching			
3 positions, latching, 60°, toggle handle	M22-WRK3		MM216872



Order no. blue: on stock, usually ready for delivery on the day of order

Series MM - Toggle Handles Illuminated, 2 Positions



MM216814

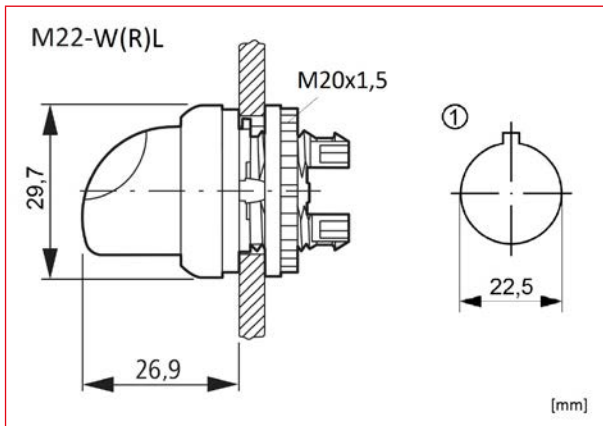


MM216816

Schrack-Info

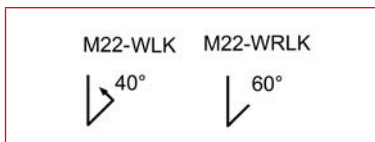
- Protection degree: IP66
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
2 positions, momentary, white, toggle handle	M22-WLK-W		MM216812
2 positions, momentary, red, toggle handle	M22-WLK-R		MM216814
2 positions, momentary, green, toggle handle	M22-WLK-G		MM216816
2 positions, momentary, yellow, toggle handle	M22-WLK-Y		MM216818
Latching			
2 positions, latching, white, toggle handle	M22-WRLK-W		MM216823
2 positions, latching, red, toggle handle	M22-WRLK-R		MM216825
2 positions, latching, green, toggle handle	M22-WRLK-G		MM216827
2 positions, latching, yellow, toggle handle	M22-WRLK-Y		MM216829
2 positions, latching, blue, toggle handle	M22-WRLK-B		MM216831

Series MM - Toggle Handles Illuminated, 3 Positions



MM216847

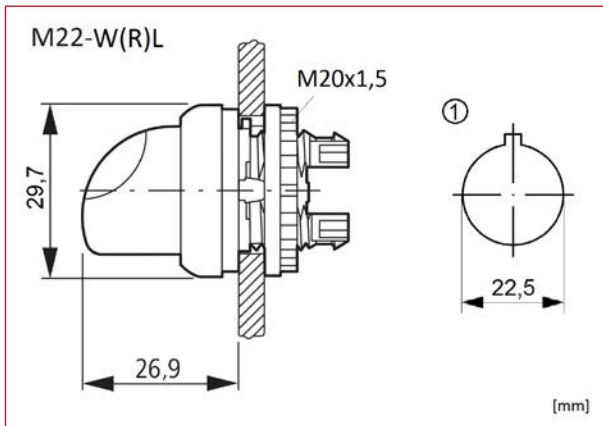


MM216833

Schrack-Info

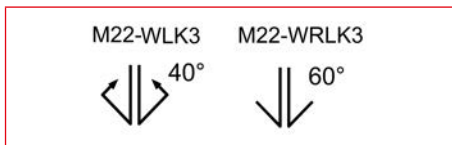
- Protection degree: IP66
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
3 positions, momentary, white, toggle handle	M22-WLK3-W		MM216833
3 positions, momentary, red, toggle handle	M22-WLK3-R		MM216835
3 positions, momentary, green, toggle handle	M22-WLK3-G		MM216837
Latching			
3 positions, latching, white, toggle handle	M22-WRLK3-W		MM216843
3 positions, latching, red, toggle handle	M22-WRLK3-R		MM216845
3 positions, latching, green, toggle handle	M22-WRLK3-G		MM216847
3 positions, latching, yellow, toggle handle	M22-WRLK3-Y		MM216849
3 positions, latching, blue, toggle handle	M22-WRLK3-B		MM216851



Series MM - Rotary Knobs 2 Positions

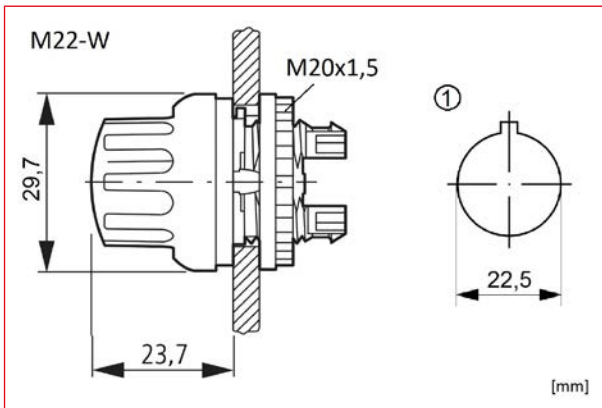


MM216853

Schrack-Info

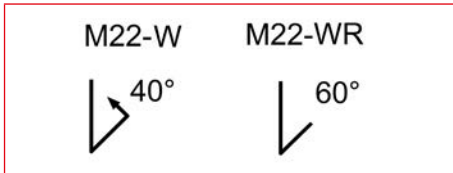
- Protection degree: IP66
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
2 positions, momentary, 'I/O', 40°, rotary head	M22-W		MM216853
Latching			
2 positions, latching, 'I/O', 60°, rotary head	M22-WR		MM216855
2 positions, latching, 'I/II', 60° rotary head	M22-WR-X92		MM216857

Series MM - Rotary Knobs 3 Positions

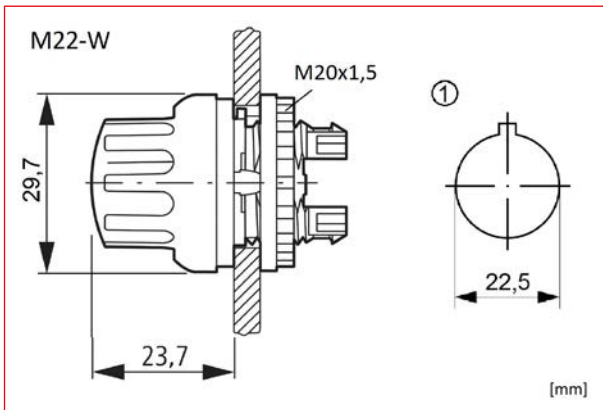


MM216861

Schrack-Info

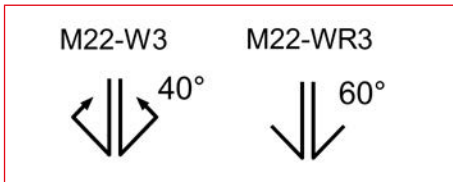
- Protection degree: IP66
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Without mounting adapter

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
3 positions, momentary, 'I/0/II', 40°, rotary head	M22-W3		MM216861
Latching			
3 positions, latching, 'I-0-II', 60°, rotary head	M22-WR3		MM216863



Order no. blue: on stock, usually ready for delivery on the day of order

Series MM - Potentiometers

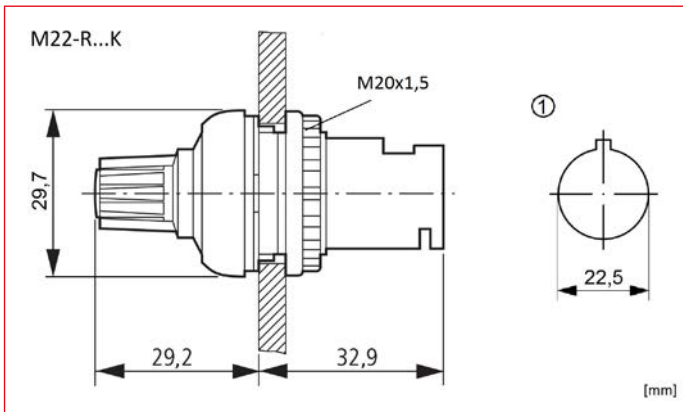


MM229491

Schrack-Info

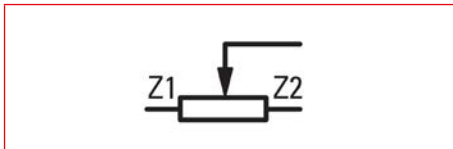
- Complete with potentiometer
- From 1 kΩ up to 470kΩ ±10%, linear
- 3 pins wired separately
- Protection degree: IP66
- Fully insulated
- Pmax = 0.5W

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Potentiometer 1kOhm	M22-R1K		MM229489
Potentiometer 4.7kOhm	M22-R4K7		MM229490
Potentiometer 10kOhm	M22-R10K		MM229491
Potentiometer 47kOhm	M22-R47K		MM229492
Potentiometer 100kOhm	M22-R100K		MM229493
Potentiometer 470kOhm	M22-R470K		MM229494

Series MM - Key Switches 2 Positions

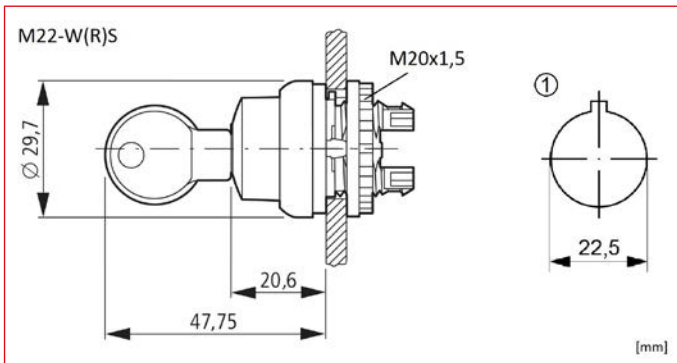


MM216881

Schrack-Info

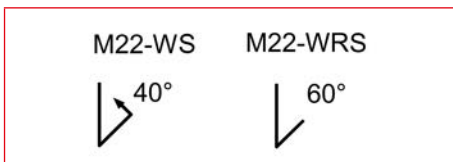
- Protection degree: IP66
- Master key system with 4 levels
- With coding set MM216406 the drawing of key can be changed
- With coding set MM216467 the function of push button can be changed between momentary or latching
- Diameter 29.7mm
- Including knurled nut M20x1.5

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
2 positions, momentary, 40°	M22-WS		MM216881
Latching			
2 positions, latching, 60°	M22-WRS		MM216887
Accessories			
Spare key MS1 Standard	M22-ES-MS1		MM216416

Series MM - Key Switches 3 Positions

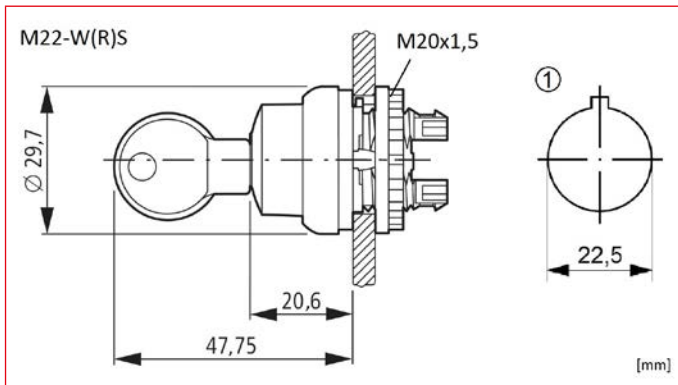


MM216894

Schrack-Info

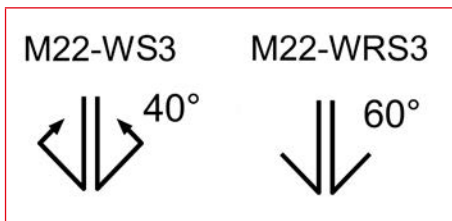
- Protection degree: IP66
- Master key system with 4 levels
- With coding set MM216406 the drawing of key can be changed
- With coding set MM216467 the function of push button can be changed between momentary or latching
- Diameter 29.7 mm
- Including knurled nut M20x1,5

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Momentary			
3 positions, momentary, 40°	M22-WS3		MM216894
Latching			
3 positions, latching, 60°	M22-WRS3		MM216900
Accessories			
Spare key MS1 Standard	M22-ES-MS1		MM216416

Series MM - Joysticks

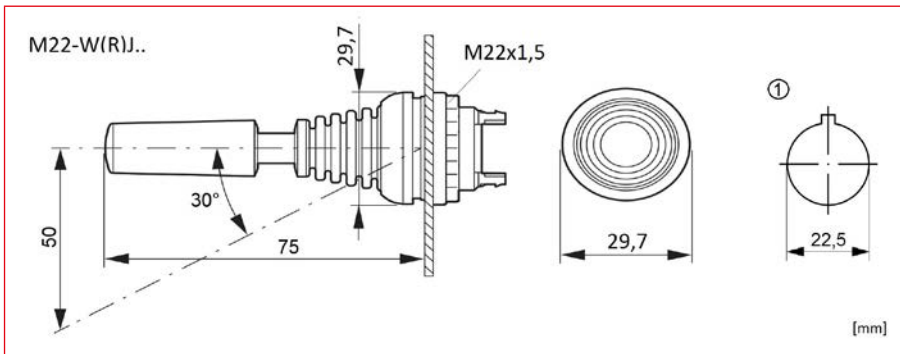


MM279417

Schrack-Info

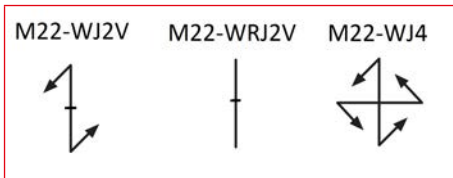
- Protection degree: IP66
- Diameter 29.7mm
- Including knurled nut M20x1.5
- Mounting adapter M22-A4 necessary, not included

Dimensions



1) drilling plan

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Joystick			
Joystick, 4 positions, momentary, titan ring	M22-WJ4		MM279417
Joystick 2 positions momentary vertical	M22-WJ2V		MM289196
Joystick 2 positions latching vertical	M22-WRJ2V		MM289240
Accessories			
Label-carrier + label, for individual inscription	M22-XCK-*		MM279436



Series MM - Acoustic Indicators



MM229015

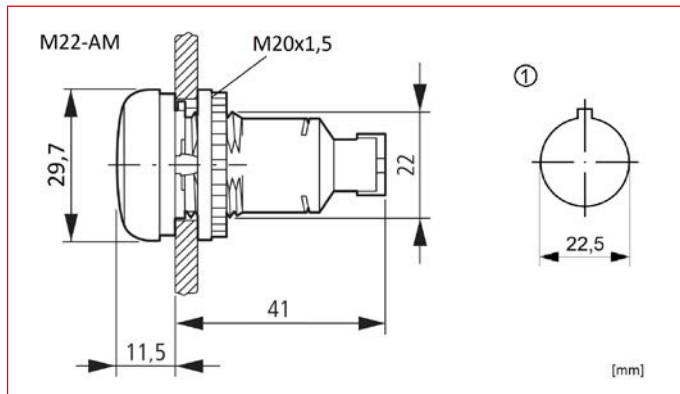


MM229025

Schrack-Info

- Protection degree: IP66
- Diameter 29.7mm
- Buzzer continuous tone: 18-30V AC/DC, 18 ... 30mA
- Buzzer pulse tone: 24VDC (+10%, -15%), 18 ... 30mA
- Volume level 83dB
- Frequency 2.3kHz

Dimensions



1) drilling plan

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Housing for buzzer, empty, black for MM229025 and MM229029	M22-AMC		MM229015
Buzzer, continuous tone, 18 - 30V AC/DC, BA9s	M22-XAM		MM229025
Buzzer, pulse tone, 24VDC, BA9s	M22-XAMP		MM229028

Series MM - Bulkhead Interface RJ45/USB



MM107413

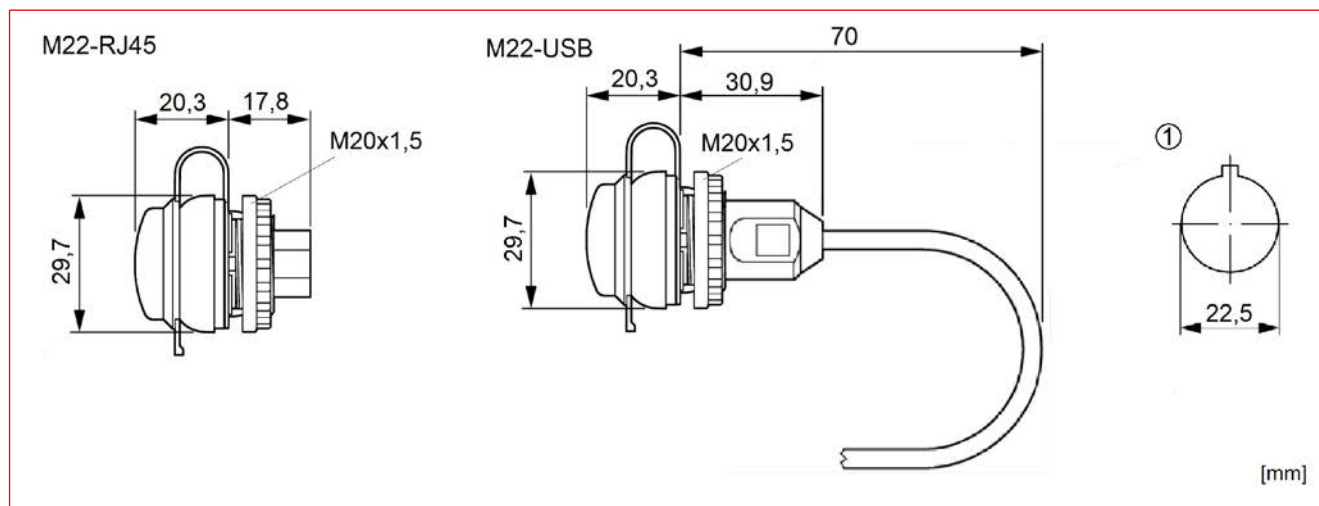


MM107412

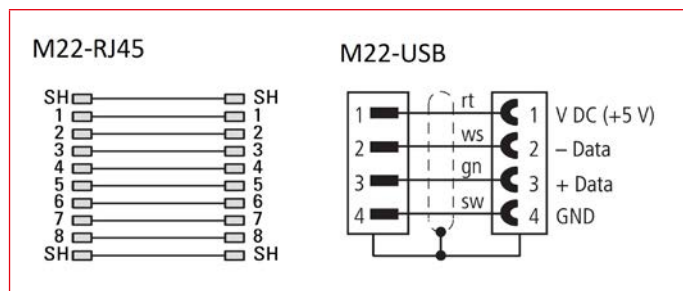
Schrack-Info

- Diameter 29.7mm
- Protection degree front with closed cover: IP65
- Protection degree front with plugged device: IP20
- M22-USB including 60cm preassembled cable and USB plug

Dimensions



Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Bulkhead interface RJ45 socket 8/8	M22-RJ45		MM107413
Bulkhead interface USB socket 2.0 A/A, with cable L=60cm	M22-USB		MM107412

Series MM - Mounting Adapters



MM216374



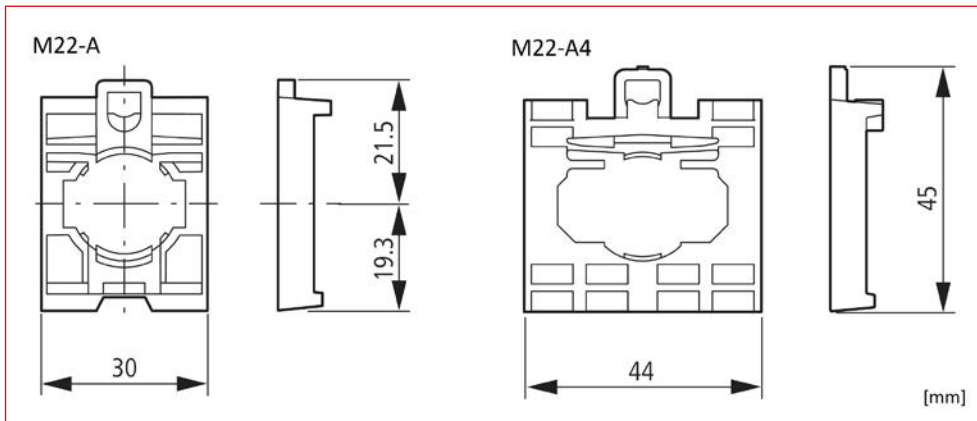
MM279437

Schrack-Info

for fixing of front mounted contacts or LED's

Mounting adapter is necessary for each switching and signalling device, consisting of single parts. Either up to 6 contact elements or 1 LED plus in maximum 4 contact elements can be mounted.

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Adapter (front)	M22-A		MM216374
Adapter front for joysticks	M22-A4		MM279437

Series MM - Contact Blocks



MM216376



MM216378



MM216380

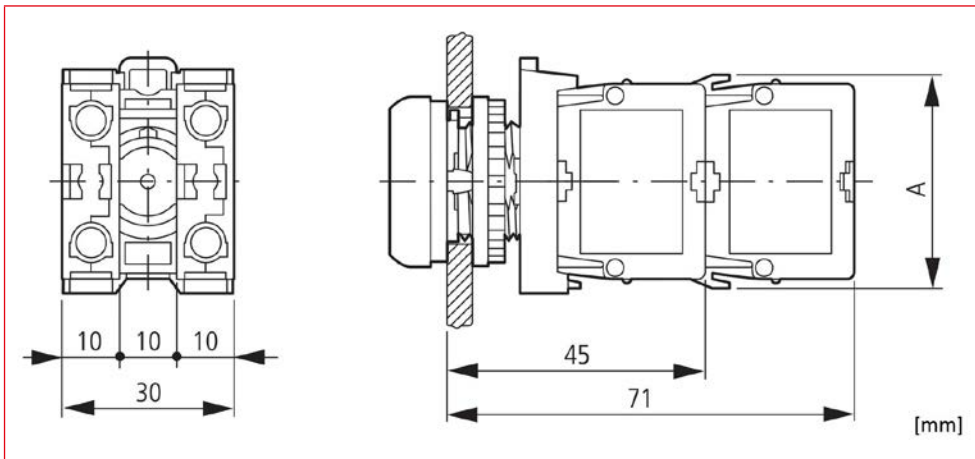


MM216382

Schrack-Info

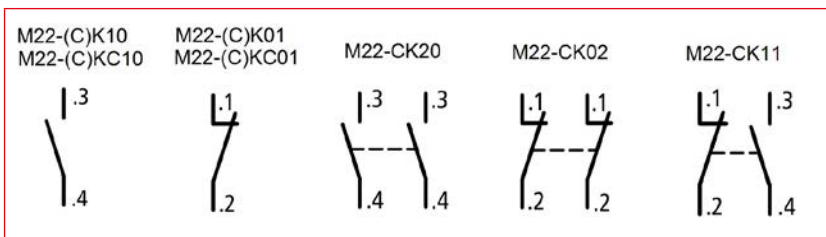
- Cage clamp or screw terminals
- Switching capacity
- AC15/24 ... 230V 6A
- AC15 / 400V 3A

Dimensions












	1 x M22-K	2 x M22-K	1 x M22-CK	2 x M22-CK
A	37.2	37.2	39	39

Wiring Diagram



Series MM - Contact Blocks

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Front Mounting to Adapter			
NO contact block, front montage	M22-K10		MM216376
NC contact block, front montage	M22-K01		MM216378
NO contact block front montage cage clamp	M22-CK10		MM216384
NC contact block front montage cage clamp	M22-CK01		MM216385
Front Mounting to Adapter - Double Contacts Cage Clamp			
Double NO contact, Cage clamp	M22-CK20		MM107898
Double NC contact, Cage clamp	M22-CK02		MM107899
NO+NC, Cage clamp	M22-CK11		MM107940
Floor Mounting in Enclosure to Adapter			
NO contact block base montage	M22-KC10		MM216380
NC contact block base montage	M22-KC01		MM216382
NO contact block base montage cage clamp	M22-CKC10		MM216386
NC contact block base montage cage clamp	M22-CKC01		MM216387

Series MM - LED's



MM216557

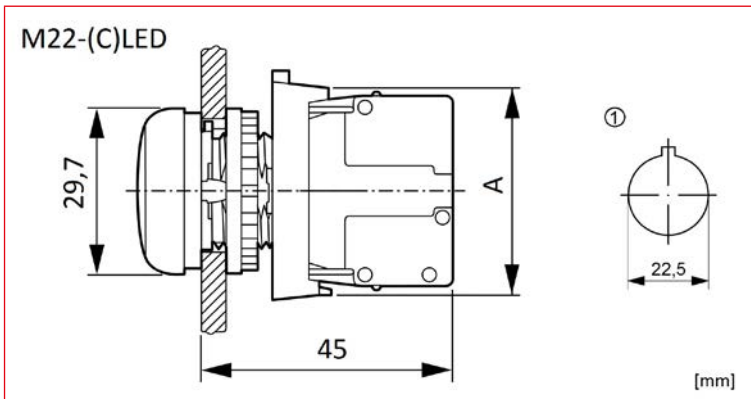


MM216560

Schrack-Info

- Available with cage clamp or screw terminals
- For front mounting use types M22-(C)LED
- For enclosures and telescope-clip use floor mounted types M22-(C)LEDC
- Protection degree case and terminals: IP20
- Operational voltage: 12 - 30V AC/DC or 85 - 264V AC
- Operational current: 8 - 15mA DC or 5 - 15mA AC

Dimensions

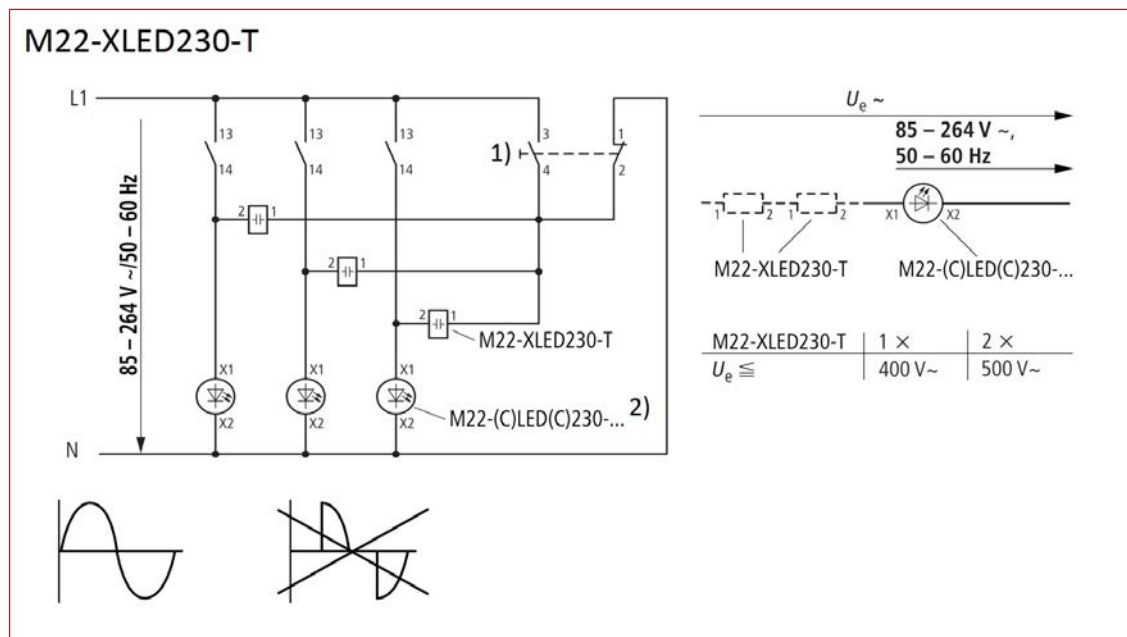


1) Drilling plan

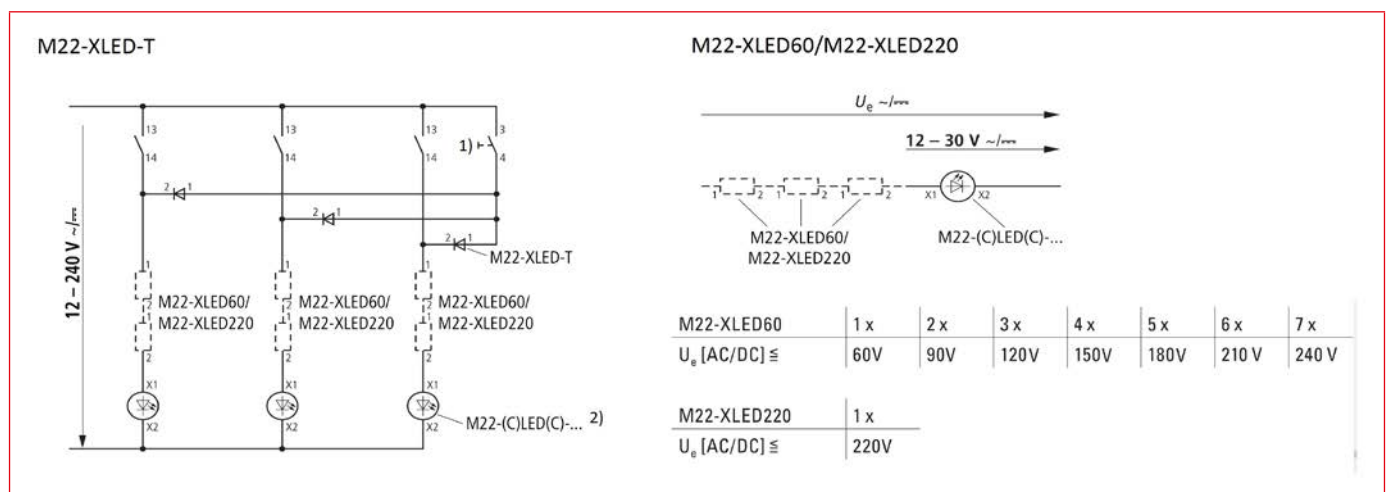
	M22-LED	M22-CLED
A	37.2	39

Series MM - LED's

Wiring Diagram













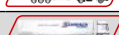












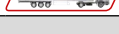




Wiring Diagram



1) test button

2) only for elements 85-264V

Series MM - LED´s

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
LED´s for Front Mounting			
White LED unit 18-30V AC/DC front mounting	M22-LED-W		MM216557
Red LED unit 18-30V AC/DC front mounting	M22-LED-R		MM216558
Green LED unit 18-30V AC/DC front mounting	M22-LED-G		MM216559
LED 12-30V ACDC blue front	M22-LED-B		MM218057
White LED unit 18-30V AC/DC front cage clamp	M22-CLED-W		MM216569
Red LED unit 18-30V AC/DC front cage clamp	M22-CLED-R		MM216570
Green LED unit 18-30V AC/DC front cage clamp	M22-CLED-G		MM216571
LED 12-30V ACDC blue front cage clamp	M22-CLED-B		MM218061
White LED unit 85-264V AC front mounting	M22-LED230-W		MM216563
Red LED unit 85-264V AC front mounting	M22-LED230-R		MM216564
Green LED unit 85-264V AC front mounting	M22-LED230-G		MM216565
LED 85-264V AC blue front	M22-LED230-B		MM218059
White LED unit 85-264V AC front cage clamp	M22-CLED230-W		MM216575
Red LED unit 85-264V AC front cage clamp	M22-CLED230-R		MM216576
Green LED unit 85-264V AC front cage clamp	M22-CLED230-G		MM216577
LED 85.264V AC blue front cage clamp	M22-CLED230-B		MM218063
LED´s for Floor Mounting			
White LED unit 18-30V AC/DC base mounting	M22-LEDC-W		MM216560
Red LED unit 18-30V AC/DC base mounting	M22-LEDC-R		MM216561
Green LED unit 18-30V AC/DC base mounting	M22-LEDC-G		MM216562
LED 12-30V ACDC blue base	M22-LEDC-B		MM218058
White LED unit 18-30V AC/DC base cage clamp	M22-CLEDC-W		MM216572
Green LED unit 18-30V AC/DC base cage clamp	M22-CLEDC-G		MM216574
Red LED unit 18-30V AC/DC base cage clamp	M22-CLEDC-R		MM216573
LED 12-30V blue base cage clamp	M22-CLEDC-B		MM218062
White LED unit 85-264V AC base mounting	M22-LEDC230-W		MM216566
Red LED unit 85-264V AC base mounting	M22-LEDC230-R		MM216567
Green LED unit 85-264V AC base mounting	M22-LEDC230-G		MM216568
LED 85-264V AC blue base	M22-LEDC230-B		MM218060
LED 85-264VAC white, floor cage clamp	M22-CLEDC230-W		MM216578
Red LED unit 85-264V AC base cage clamp	M22-CLEDC230-R		MM216579
Green LED unit 85-264V AC base cage clamp	M22-CLEDC230-G		MM216580
LED Accessories			
LED test element 12-30VAC/DC	M22-XLED-T		MM231079
LED test element 85-264VAC	M22-XLED230-T		MM231080
LED series contact element 42-60V AC/DC	M22-XLED-60		MM231078
LED series element 220V AC/DC	M22-XLED220		MM271541



Series MM - Label and Label Holders



MM216480



MM216489



MM216490



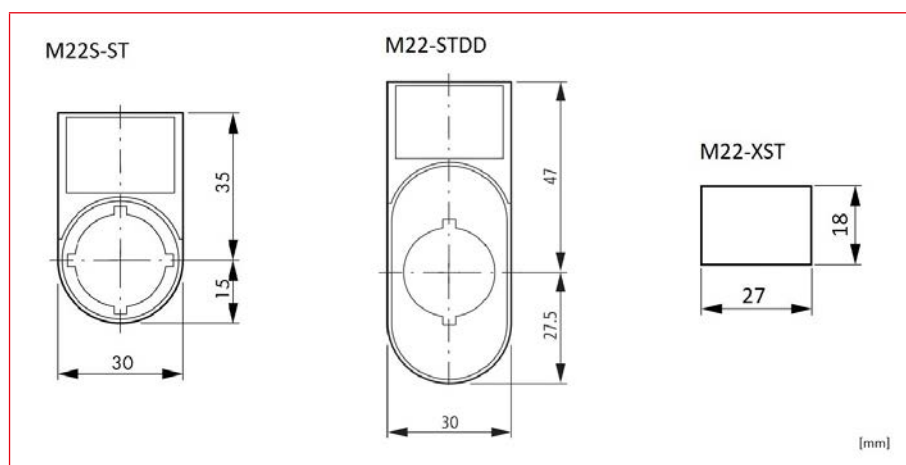
MM216501

Schrack-Info

for snapping labels 18 x 27 mm

- Label holders for underlay in command and signaling devices

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Legend plate holder, without plate 30x50mm	M22S-ST-X		MM216392
Legend plate holder for twin PB black, without plate 30x75mm	M22S-STDD-X		MM216394
Label, 18x27 mm aluminium blank	M22-XST		MM216480
Label Plate with Label 30x50, 0 I	M22S-ST-X88		MM216485
Label Plate with Label 30x50, I 0 II	M22S-ST-X93		MM216486
Label Plate with Label 30x50, EIN	M22S-ST-D6		MM216487
Label Plate with Label 30x50, BETRIEB	M22S-ST-D7		MM216488
Label Plate with Label 30x50, STÖRUNG	M22S-ST-D8		MM216489
Label Plate with Label 30x50, AUS EIN	M22S-ST-D10		MM216490
Label Plate with Label, HAND AUTO	M22S-ST-D11		MM216492
Label Plate with Label, HAND 0 AUTO	M22S-ST-D12		MM216493
Label Plate with Label, STOP	M22S-ST-GB0		MM216494
Label Plate with Label, START	M22S-ST-GB1		MM216495
Label Plate with Label 30x50, ON	M22S-ST-GB6		MM216496
Label Plate with Label 30x50, RUN	M22S-ST-GB7		MM216497
Label Plate with Label 30x50, FAULT	M22S-ST-GB8		MM216498
Label Plate with Label 30x50, OFF ON	M22S-ST-GB10		MM216499
Label Plate with Label, MAN AUTO	M22S-ST-GB11		MM216500
Label Plate with Label, MAN 0 AUTO	M22S-ST-GB12		MM216501
Holder + label 30x50mm "Aus"	M22S-ST-D5		MM218299
Holder + label 30x50mm "Off"	M22S-ST-GB5		MM218300

Series MM - Accessories



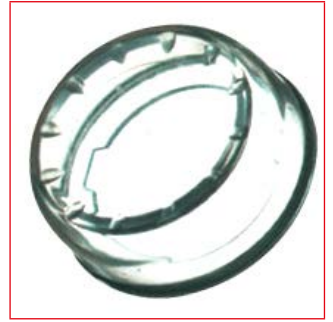
MM216398



MM216400

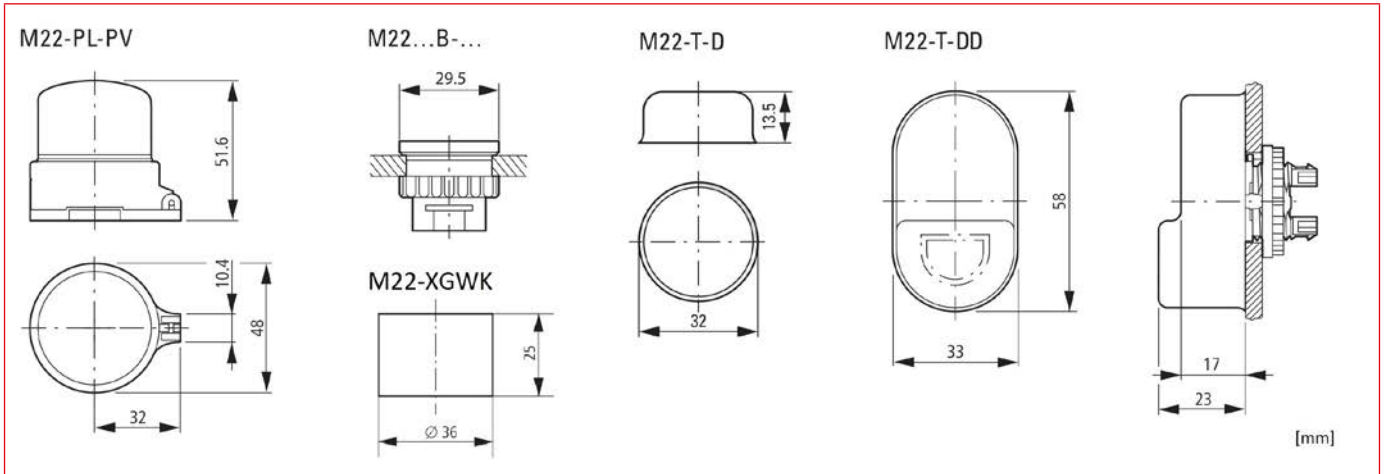


MM216402

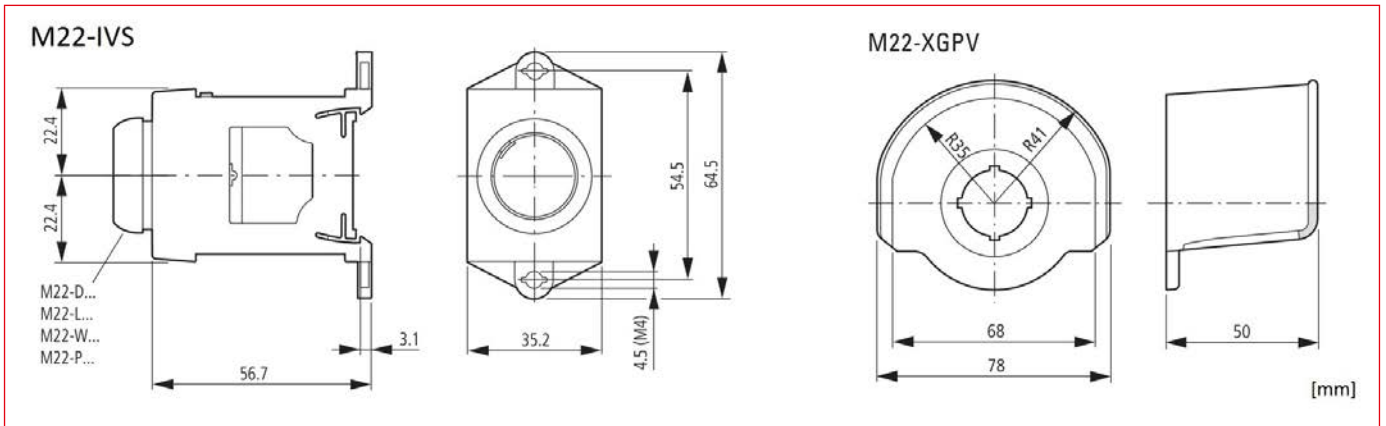


MM216395

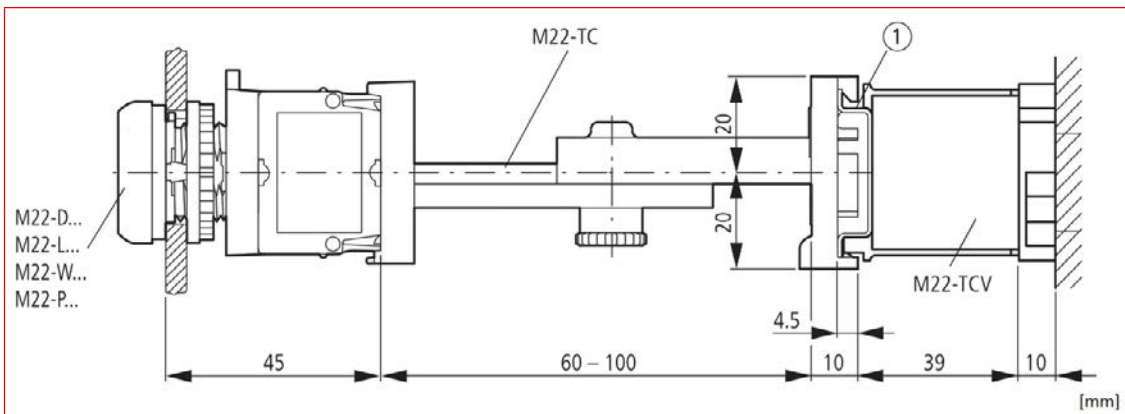
Dimensions



Dimensions

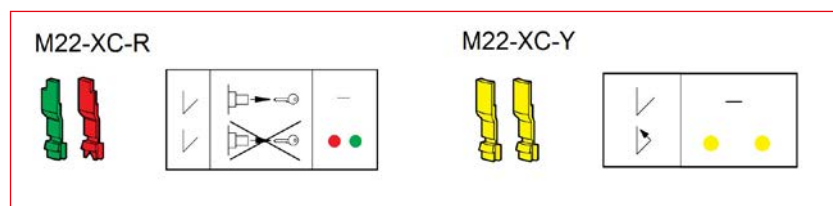


Dimensions



Series MM - Accessories

Dimensions



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Telescopic clip	M22-TC		MM216398
IVS DIN rail adapter	M22-IVS		MM216400
Diaphragm, flat push-button+indication light	M22-T-D		MM216395
Diaphragm for double push-button	M22-T-DD		MM216396
Sealable shroud	M22-PL-PV		MM216397
Emergency-Stop protective collar	M22-XGPV		MM231273
Selector switch protective shroud	M22-XGWK		MM231274
Protective collar, grey	M22G-XGPV		MM271610
Coding adapter set (1 Set = 1 red+ 1 green)	M22-XC-R		MM216406
2 coding adapters (to change from latching to momentary)	M22-XC-Y		MM216407
Plunger Bridge	M22-XW		MM216405
Spare locking ring M22x 1.5mm	M22-GR		MM216401
Mounting tool	M22-MS		MM216402
2 reducing adapter rings (from 30 to 22.3mm bore)	M22S-R30		MM216408
Blanking plug, black	M22S-B		MM216390
Blanking plug, grey	M22-B		MM216388

Series MM - Surface Enclosures Black/Grey



MM216538

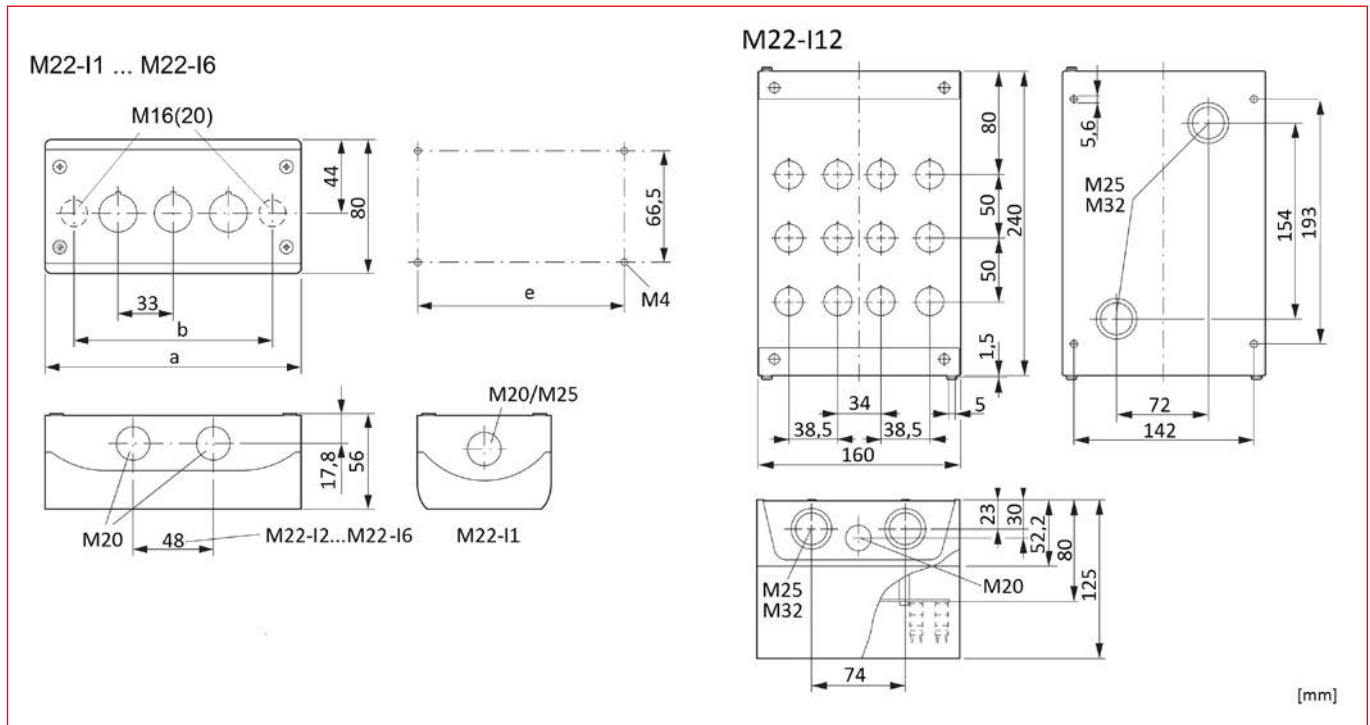


MM222688

Schrack-Info

- Protection degree with built-in devices:
- I1 up to I5 - IP67, 69K
- I6 - IP66
- I12 - IP55
- For assembling of floor mounted switching elements and LED`s
- Cover fixing by stainless steel screws
- Inlets for metric cable glands

Dimensions

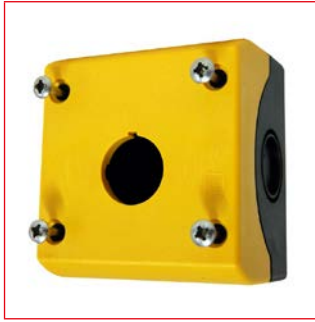


Type	installation point	a	b	e	cable entries		
M22-I2	2	120	85.6	106.5	2 x M20	3 x M20	2 x M25
M22-I3	3	153	118.6	139.5	2 x M20	2 x M25	4 x M20
M22-I4	4	186	151.6	172.5	2 x M20	2 x M25	4 x M20
M22-I6	6	252	217.6	238.5	2 x M20	2 x M25	4 x M20

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Surface mounting enclosure, 1 hole, black/light grey	M22-I1		MM216535
Surface mounting enclosure, 2 holes, black/light grey	M22-I2		MM216537
Surface mounting enclosure, 3 holes, black/light grey	M22-I3		MM216538
Surface mounting enclosure, 4 holes, black/light grey	M22-I4		MM216539
Surface mounting enclosure, 6 holes, black/light grey	M22-I6		MM216540
Surface mounting enclosure, 12 holes, black/light grey	M22-I12		MM222688



Series MM - Surface Enclosures Black/Yellow

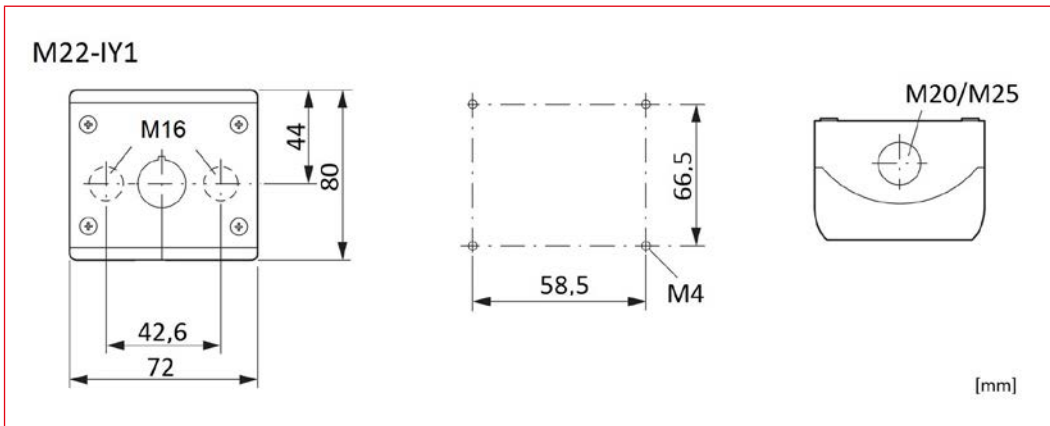


MM216536

Schrack-Info

- Protection degree with built-in devices: IP67, IP69K
- For assembling of floor mounted switching elements and LED`s
- Cover fixing by stainless steel screws
- Inlets for metric cable glands

Dimensions



Type	installation point	cable entries		
M22-I(Y)1	1	2 x M16	3 x M20	2 x M25

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Surface mounting enclosure, 1 hole, black/yellow	M22-IY1		MM216536

Series MM - Sets



MM900022

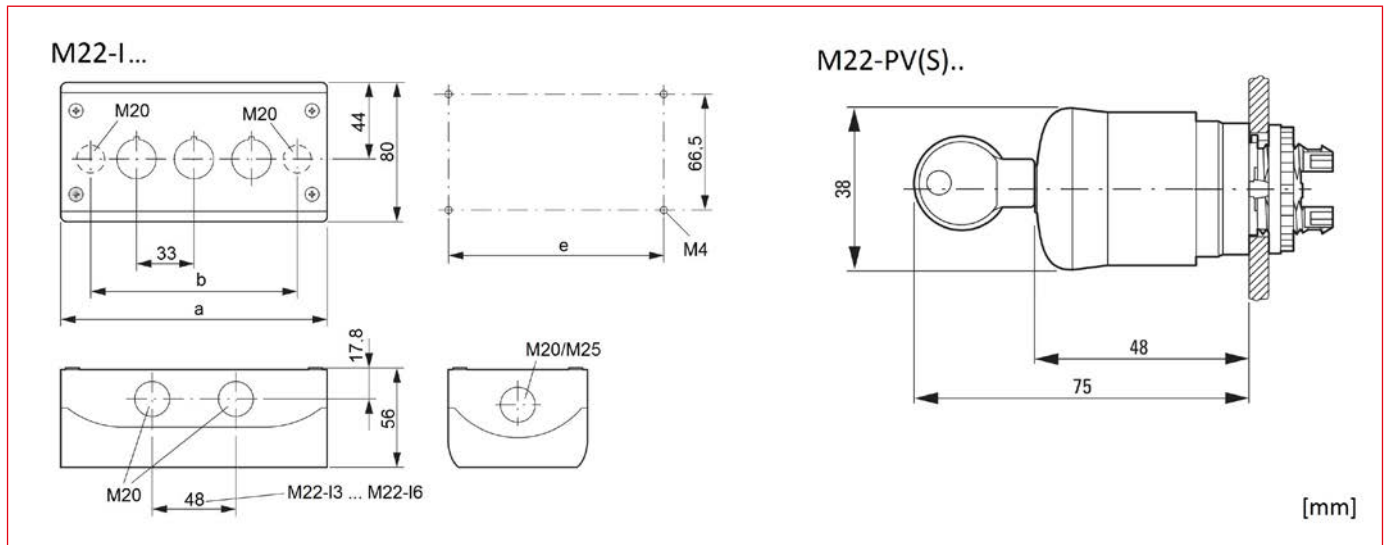


MM216529

Schrack-Info

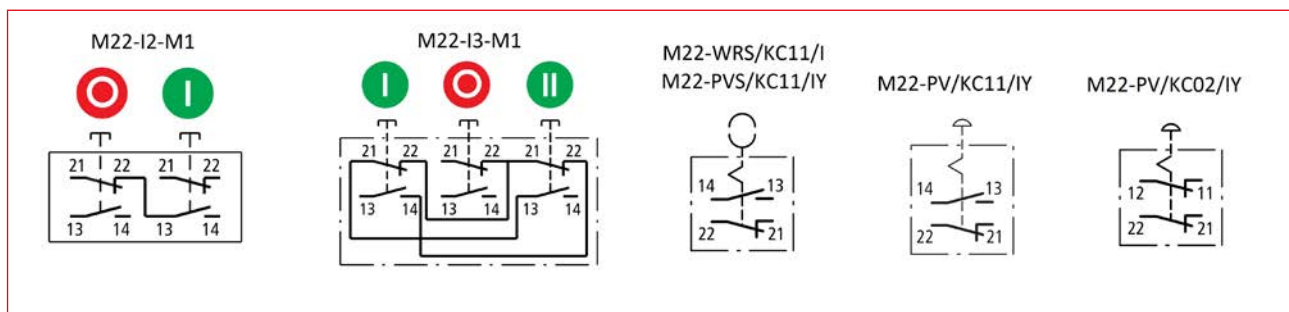
- Combinations with Emergency-Off in case black/yellow
- Other combinations in case black/grey
- Protection degree: IP67, 69K
- Devices are delivered completely assembled

Dimensions

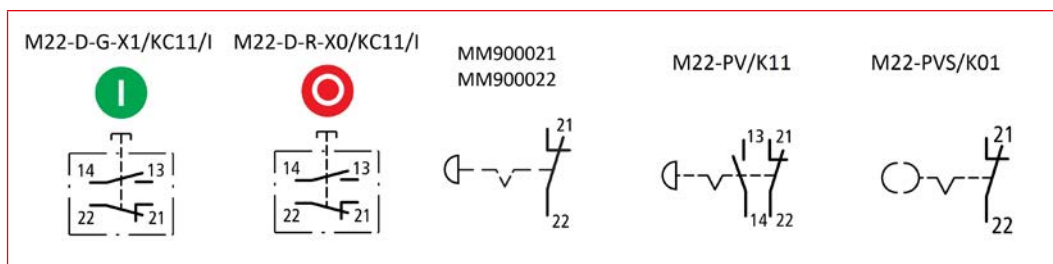


Type	installation point	a	b	e	cable entries		
M22-I2	2	120	85.6	106.5	2 x M20	3 x M20	2 x M25
M22-I3	3	153	118.6	139.5	2 x M20	2 x M25	4 x M20






Wiring Diagram



Wiring Diagram



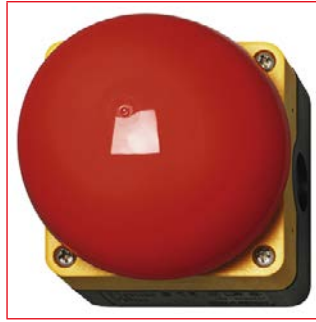
Series MM - Sets

DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Complete enclosure with 2 push-buttons, 0/I, red/green, 2 x 1NO+1NC	M22-I2-M1		MM216529
Complete enclosure with 3 push-buttons, I /O/ II, green/red/green, 3x1NO+1NC	M22-I3-M1		MM216532
Complete enclosure with Key-switch, 1NO+1NC	M22-WRS/KC11/I		MM216526
Complete enclosure with `Emergency OFF` Mushroom button, 1NO+1NC	M22-PV/KC11/IY		MM216525
Complete enclosure with `Emergency OFF` Mushroom button, 2NC	M22-PV/KC02/IY		MM216524
Complete enclosure with key operated `Emergency OFF` push button, 1NO+1NC	M22-PVS/KC11/IY		MM216523
Complete enclosure with push button green, `I`, 1NO+1NC	M22-D-G-X1/KC11/I		MM216522
Complete enclosure with push button red, `0`, 1NO+1NC	M22-D-R-X0/KC11/I		MM216521
Remote switch illuminated with sealing cap	M22-SET		MM900021
Remote switch with key MS1	M22-SET		MM900022
Emergency Stop button complete, 1NC front	M22-PV/K01		MM216515
Emergency Stop mushroom button complete, 1NC, 1NO	M22-PV/K11		MM216516
Complete "Emergency Off" switch, key-reset, front mounted, 1NC	M22-PVS/K01		MM216514

Series MM - Palm Switches



MM229749

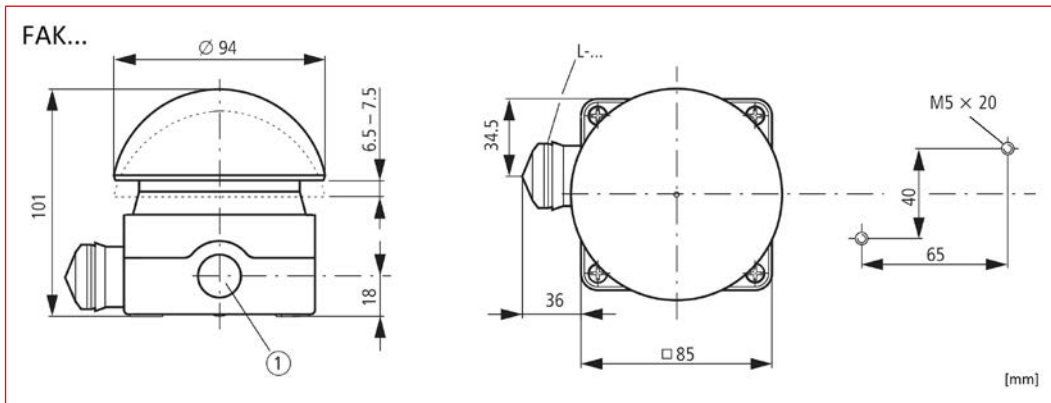


MM229747

Schrack-Info

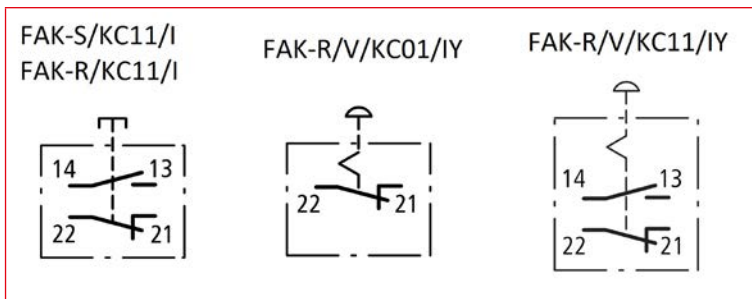
- Combinations with Emergency-Off in case black/yellow
- Other combinations in case black/grey
- Protection degree: IP67, 69K
- Devices are delivered completely assembled

Dimensions



- 1) 3 x M20 (Pg 13,5) lateral
1 x M16 floor

Wiring Diagram



DESCRIPTION	TYPE NO.	AVAILABLE	ORDER NO.
Coarse manual switch, black, 1NO, 1NC, momentary	FAK-S/KC11/I		MM229749
Coarse manual switch, red, 1NO, 1NC, momentary	FAK-R/KC11/I		MM229746
Emergency Stop button, 1NC, latching	FAK-R/V/KC01/IY		MM229747
Emergency Stop button, 1NO, 1NC, latching	FAK-R/V/KC11/IY		MM229748

Series MS - Command and Signalling Devices

Technical Data

Type		MSZK	MSJ	MSZL	MSZK...C	MSZL...C
Switching elements and lamp holders						
Standards		IEC 60947-5-1, IEC 60947-5-5, DIN EN 60947-5-1, DIN EN 60947-5-5				
Terminal connection method		Screwed connection			Spring-type terminal	
Rated insulation voltage U_i	V	400	400	250	400	400
At pollution degree according to IEC 60947-1		Class 3	Class 3	Class 3	Class 3	Class 3
Rated surge voltage resistance U_{imp}	kV	4	4	4	4	4
Conventional thermal current I_{th}	A	10	10	--	10	--
Rated operational currents I_e at rated operational voltage U_e						
Alternating current 50/60 Hz, AC-12						
- at $U_e = 24V$	A	10	10	--	10	--
- at $U_e = 48V$	A	10	10	--	10	--
- at $U_e = 110V$	A	10	10	--	10	--
- at $U_e = 230V$	A	10	10	--	10	--
- at $U_e = 400V$	A	10	10	--	10	--
Alternating current 50/60 Hz, AC-15						
- at $U_e = 24V$	A	6	6	--	6	--
- at $U_e = 48V$	A	6	6	--	6	--
- at $U_e = 110V$	A	6	6	--	6	--
- at $U_e = 230V$	A	6	6	--	6	--
- at $U_e = 400V$	A	3	4	--	3	--
Direct current, DC-12						
- at $U_e = 24V$	A	10	10	--	10	--
- at $U_e = 48V$	A	5	--	--	5	--
- at $U_e = 110V$	A	2.5	2	--	2.5	--
- at $U_e = 230V$	A	1	0.5	--	1	--
Direct current, DC-13						
- at $U_e = 24V$	A	3	5	--	3	--
- at $U_e = 48V$	A	1.5	--	--	1.5	--
- at $U_e = 110V$	A	0.7	0.5	--	0.7	--
- at $U_e = 230V$	A	0.3	0.2	--	0.3	--
Contact security						
Test voltage	V	5	5	--	5	--
Test current	mA	1	1	--	1	--
Lamp socket		--	--	BA 9s	--	BA 9s
Lamps		--	--	Incandescent, glow and LED lamp	--	Incandescent, glow and LED lamp

Series MS - Command and Signalling Devices

Technical Data

Type	MSZK	MSJ	MSZL	MSZK...C	MSZL...C
Short circuit protection, sweat-free, according to IEC 60947-5-1					
DIAZED-Fuse category gG according to IEC 60269-3-1 (DIN VDE 0636-301)			Dz10 A		
DIAZED-Fuse fast-acting according to DIN VDE 0635			Dz 16 A		
MCB with A C-Characteristics according to IEC 60898 (VDE 0641)			10		
Mechanical endurance			10 × 10 ⁶ operating cycles		
Electrical endurance at utilization category AC-15 with contactors LSDD up to LSDO at utilization category DC-12, DC-13			10 × 10 ⁶ operating cycles At DC life span of switching contacts depends not only from switching off current, it also depends on the operational voltage, the inductivity of the current circuit and the speed of switching.		
Switching frequency 1/h			1000 operating cycles		
Protection degree according to IEC 60529					
Connections	IP20			IP40 --	--
Device	IP40	--		IP40 --	--
Protection against contact according to EN 50274 and BGV A2			finger save		finger save
Conductor cross section¹⁾ finely stranded, without end sleeve finely stranded, with end sleeve according to DIN 46228 solid		--		2 × (0.25 ... 1.5) 2 × (0.25 ... 0.75) 2 × (0.25 ... 1.5)	
AWG-cables, solid or stranded		2 × AWG 18 ... 14		2 × AWG 24 ... 16	
Tightening torque of terminal screw Nm		0.8		--	
Sold pins		--		--	

1) for standard screwdrivers size 2 or Pozidriv 2

Technical Data According to UL and cUL

Type	MSZK	MSZL	MSZK...C	MSZL...C
Data according to UL and CSA				
Rated operating voltage AC V	300	--	300	--
Conventional thermal current (continuous current) A	10	--	10	--
Switching capacity	A 300, R 300, A 600 same polarity			
Rated voltage (lamps)				
Lamps with socket BA 9s AC V	--	125	--	125
Lampe with socket Wedge-Base AC V	--	60	--	60
Lamp socket with integrated LED V	--	AC/DC 24, AC 110, AC 230	--	AC/DC 24, AC 110, AC 230
Rated power (lamps) W	--	2.5	--	2.5

Series MS - Command and Signalling Devices

Technical Data

Type	MSK, MSN, MST, MSM, MSL	
Command and signalling devices		
Housing material	plastic	
Design	round	
Connection designation according to EN 50013	Reference number on the holder, function number on the switching element	
Device identification	snapping shield	
Torque specification		
Screw at the holder	Nm	max. 1
Mechanical life		
Pushbutton		10 × 10 ⁶ operations
Illuminated pushbutton		3 × 10 ⁶ operations
Actuators, rotatable or latching		3 × 10 ⁵ operations
Key switch with key monitoring		1 × 10 ⁵ operations
Switching frequency	1/h	1000 operations
Climatic conditions according to DIN EN ISO 6270-2	climate-proof KTW24; suitable for use in ship installations	
Ambient temperature		
In operation, not illuminated and with LED	°C	-25 ... +70
In operation, devices with incandescent lamp	°C	-25 ... +60
During storage, transport	°C	-40 ... +80
Protection according to IEC 60529		
Command and signalling devices, standard		IP66
With protective caps		IP67
Lock with key monitoring		IP54
Double pushbutton (3SB31)		IP65
Precautions	<p>When installed in metallic front panels and housing, the actuators and light fixtures are not included in the protective measure</p> <p>When in protective-insulated housings installed, the protective measure protective insulation remains intact.</p>	
Shock resistance according to IEC 60068-2-27		
In shock form half sinus, shock duration 11 ms		
Devices without light bulb		≤ 50g
Devices with light bulb		≤ 30g
Fatigue resistance according to IEC 60068-2-6		
Acceleration at frequency 20 ... 200Hz		5g

Technical Data

Type	MSG
Housing, housing material	plastic
Actuating and signalling elements	plastic, round
Degree of protection according to IEC 60529	IP65
Climatic resistance according to DIN 50017	KTW 24

Series MSI - Command and Signalling Devices

General Data

Type	MSIM, MSIA	
Approvals		
Light and acoustic elements		
Rated voltage, current consumption		
flashlight		DC 24V/125mA; AC 115V/20mA; AC 230V/35mA
max. inrush current, blink light, flash light		500mA
Lighting elements with integrated LED		
continuous light		AC/DC 24V/45mA; AC/DC 115V/25mA; AC 230V/25mA
blink light		AC/DC 24V/40mA
acoustic elements		
buzzer element		AC/DC 24V/25mA; AC/DC 115V/25mA; AC 230V/25mA
(Key: pulsating or continuous tone, 85dB)		
Power inputs		
Flashlight, flash energy	Ws	2
Endurance		
Flashlight		4 × 10 ⁶ blitz
Operating temperature	°C	-30 ... +50
Enclosures		
Enclosure material		
Thermoplastic (polyamide), impact-resistant, black		
Mounting		
Horizontal (for floor mounting, foot with Ø 25-mm pipe)		yes
Horizontal (single-hole mounting)		--
Vertical with bracket		yes
Degree of protection		
Light elements		IP65 (seal pre-mounted with every module)
Acoustic elements, AS-i adapter elements		IP65
Operating temperature		
-20 ... +50		
Connection		
M3 screw terminal		
Conductor cross-sections	mm ²	2 max 2.5
Tightening torque	Nm	max. 0.5

Series MM - Command and Signalling Devices

Technical Data

			Contacts elements	Double-contact elements	LED elements	Luminous push-buttons, push-buttons, mushroom push-buttons momentary	Double push-button
Standards			IEC/EN 60947, VDE 0660				
Endurance, mechanical	Operations	x10 ⁶	5	–	–	5	0,2
Operating frequency	Operations		≤ 3600	≤ 3600	–	≤ 3600	≤ 3600
Operating force		N	5	10	–	5	5
Operating torque (screw terminals)		Nm	0,8	–	0,8	–	–
Degree of protection (IEC/EN 60529)			IP20	IP20	IP20	IP67, IP69K	IP66
Climatic proofing			Damp heat as defined in IEC 60068-2-78 Damp heat, cyclic as defined in IEC 60068-2-30				
Ambient temperature (open)		°C	-25 ... +70				
Mounting position			any	any	any	any	any
Mechanical shock resistance according to IEC 60068-2-27		g	30	30	30	30	30
Shock duration 11 ms, half sinus							
Conductor cross-sections							
solid		mm ²	0.75 - 2.5	0.5 - 1.5	0.75 - 2.5	–	–
stranded		mm ²	0.5 - 2.5	0.5 - 1.5	0.5 - 2.5	–	–
finely stranded with end sleeve/round sleeve		mm ²		0.5 - 1.0	–	–	–
Contacts							
Rated impulse with stand voltage U _{imp}		VAC	6000	4000	6000	–	–
Rated insulation voltage U _i		V	500	250	500	–	–
Overvoltage category/degree of pollution			III/3	III/3	III/3	–	–
Control circuit reliability							
at 24VDC/5mA			< 10 ⁻⁷ (e.g. 1 failure every 10 ⁷ operations)	–	–	–	–
	H _f fault probability						
at 5VDC/1mA			< 5x10 ⁻⁶ (e.g. 1 failure every 5x10 ⁶ operations)	–	–	–	–
	H _f fault probability						
Max. short circuit protective device							
Fuseless (MCB)		type	B6/1	B6/1	–	–	–
Fuse		gG/gL	10	10	–	–	–
Switching capacity							
Rated operational current							
AC-15	115V	A	6	6	–	–	–
	230V	A	6	6	–	–	–
	400V	A	4	–	–	–	–
	500V	A	2	–	–	–	–
DC-13	24V	A	3	3	–	–	–
	42V	A	1,7	–	–	–	–
	60V	A	1,2	–	–	–	–
	110V	A	0,8	0,6	–	–	–
	220V	A	0,3	0,3	–	–	–
Endurance, electrical							
AC-15	230V/0.5A		1,6	–	–	–	–
	230V/1.0A		1	–	–	–	–
	230V/3.0A		0,7	–	–	–	–
DC-13	12V/2.8A		1,2	–	–	–	–

Series MM - Command and Signalling Devices

Technical Data

			Knob-switches, Knob-switches illuminated	Key-switches	Signal lamps, buzzer compact, signal lamps compact, potentiometer	Push buttons illuminated, Push buttons, palm switches latching	Emergency - stop push buttons, emergency - off push buttons
Rules and regulations							
Mechanical endurance	operating cycles	$\times 10^6$	0,1	0,1	–	1	0,1
Actuating frequency	operating cycles	1/h	≤ 2000	≤ 100	–	≤ 1800	≤ 600
Actuating force	N		–	–	–	5	50
Actuating torque	Nm		0,3	0,5	–	–	–
Protection degree (IEC/EN 60529)			IP66	IP66	Signal lamps compact: IP65 Buzzers compact: IP40 Potentiometer: IP66	IP67, IP69K	IP67, IP69K
Climate proof	Damp heat as defined in EC 60068-2-78 Damp heat, cyclic as defined in IEC 60068-2-30						
Ambient temperature, open	°C		-25 ... +70				
Mounting Position			any	any	any	any	any
Resistance to shock according to IEC 60068-2-27	g		30	30	30	30	30
Shock time 11 ms, half sine-wave							
Cable cross section connectors							
solid	mm ²		–	–	0.5 - 1.5	–	–
finely stranded	mm ²		–	–	0.5 - 1.5	–	–
finely stranded, with end sleeve	mm ²		–	–	–	–	–
Current Path							
Rated impulse withstand voltage U_{imp}	VAC		–	–	4000	–	–
Rated insulation voltage U_i	V		–	–	250	–	–
Overvoltage category/degree of pollution			–	–	III/3	–	–

■ Mains Analysers NA96



■ Analogue-Ammeter



■ Digital-kWh-Meter with MID, Series MIZ



■ Modular Operating Hour Meter



■ Modular Current Transformers



■ Current-Transformers for Cable



Measuring Instruments and Mains Analysers

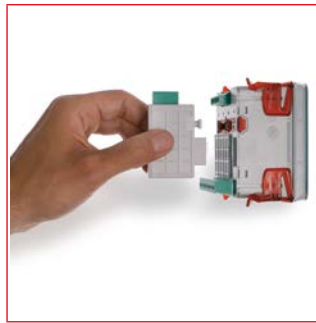
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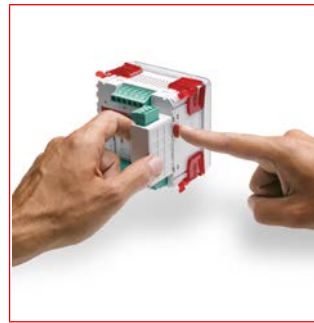
■ Mains Analyser NA96



MGF39000



NA96 and Module



NA96 and Module



MGF3900A



MGF3900R



MGF3900E



MGZEM001

■ Schrack-Info

- Multifunction measurements (4 quadrants)
- Active energy metering (2 quadrants)
- AC supply
- Single-phase, three-phase or 4-wire (adjustable)
- Voltage – phase - phase
- Minimum voltage per phase
- Maximum voltage per phase
- Harmonic content of each phase
- Current – phase and neutral, average per phase, maximum average per phase, total current, harmonic content of each phase
- Total output – active, reactive and apparent power, power per phase – active, reactive and apparent power, average, maximum average
- Power factor – overall, per phase
- Frequency
- Working hours
- Active energy – positive overall, positive for each phase
- Reactive energy – positive overall, positive for each phase
- Active energy – negative overall
- Reactive energy – negative overall

■ Mains Analyser NA96

■ Technical data - Part 1

HOUSING

Panel cut-out flush mounting	92 x 92 mm
Front frame	96 x 96 mm
Depth	62 mm, 81 mm (including optional module)
Connection	Connection Screw terminal, voltage – max. 4 mm ² , current – max. 6 mm ²
Housing material	Polycarbonate (self-extinguishing)
Degree of protection	IP 54 (front) – IP 20 (terminals)

DISPLAY

LCD backlit 68 x 65 mm	Backlighting switches off automatically after 20 seconds without operation
Measuring display	4 lines – 4 digits
Reading update	1.1 seconds
Energy count	8 digits (6+2 decimals)
Accuracy (+ 1 digit)	Active energy NA96: Class 1 (EN62053-21), NA96+: Class 0.5 (EN62053-21)
	Reactive energy Class 2 (EN62053-23)
	Voltage NA96: ± 0.5% (80 500 V phase-phase), NA96+: ± 0.2% (80 690 V phase-phase)
	Current NA96: ± 0.5% (10 120% I _n), NA96+: ± 0.2% (10 120% I _n)
	Power NA96: ± 1% (10 120% P _n , Q _n , S _n), NA96+: ± 0.5% (10 120% P _n , Q _n , S _n)
Power factor NA96: ± 1% (0.5 ind 0.5 cap), NA96+: ± 0.5% (0.5 ind 0.5 cap)	
Frequency	± 0.15 Hz
Programming	4 front keys, access protected by password
	Parameter retention in non-volatile memory

PROGRAMMABLE PARAMETERS

Mains type	1-phase or 3/4-phase connection
Current rating	1 – 5 A
Transformer ratio	NA96: 1...10 (voltage – max. primary voltage 1,200 V)
	NA96+: 1...3000 (voltage – max. primary voltage 300,000 V)
	1...9999 (current – max. primary current 50 kA/5 A – 10 kA/1 A)
Communication (optional modules)	RS 485, Ethernet, Profibus
Pulse value (optional modules)	Active or reactive energy, significance, pulse duration
Relay (optional modules)	Allocation of measured variable, threshold, min. or max. – NO or NC,
	hysteresis, On delay, Off delay
Current and power average	Integration time 5/8/10/15/20/30/60 minutes
Display	Contrast: 4 levels
Backlight	0–30 – 70–100%
Display page	After switch-on (measured quantity)

■ Mains Analyser NA96

■ Technical Data - Part 2

INPUT

Input	AC, three-phase mains 3- and 4-wire connection
Voltage	NA96: 80 500 V (three-phase AC mains phase-phase),
	NA96+: 80 690 V (three-phase AC phase-phase)
	NA96: 50 290 V (AC mains), NA96+: 50 400 V (AC mains)
Current rating	Current rating 5 A – 1 A – only current transformer connection
Max. current I_{max}	Max. current I_{max} 1.2 I_n continuous
Overload	Overload 20 $I_n/0.5$ s
Nominal frequency	Nominal frequency 50 Hz
Operating frequency	Operating frequency 47 63 Hz
Type of measurement	Type of measurement True RMS value
Harmonic content	Harmonic content NA96: up to the 16th harmonic, NA96+: up to the 22nd harmonic
Start of measurement (energy meter)	< 5 s
Intrinsic consumption	Voltage path: < 0.5 VA (per phase), current path: < 0.5 VA (per phase)

AUXILIARY VOLTAGE

Auxiliary voltage	80 265 V AC
Nominal frequency	50 Hz
Operating frequency	47 63 Hz
Intrinsic consumption	< 4 VA (without optional modules)
Auxiliary voltage	110 300 V DC
Intrinsic consumption	< 3.5 W (without optional modules)
Reverse polarity protection	yes

INSULATION

Installation category	III
Pollution degree	2
Insulation voltage rating	300 V (phase - neutral)
Surge voltage protection	6 kV, 1.2/50 μ s, 0.5 J
Test circuit	Measurement input, auxiliary voltage
Test voltage	4 kV, rms, 50 Hz/1 min
Test circuit	All circuits and earth

ELECTROMAGNETIC COMPATIBILITY

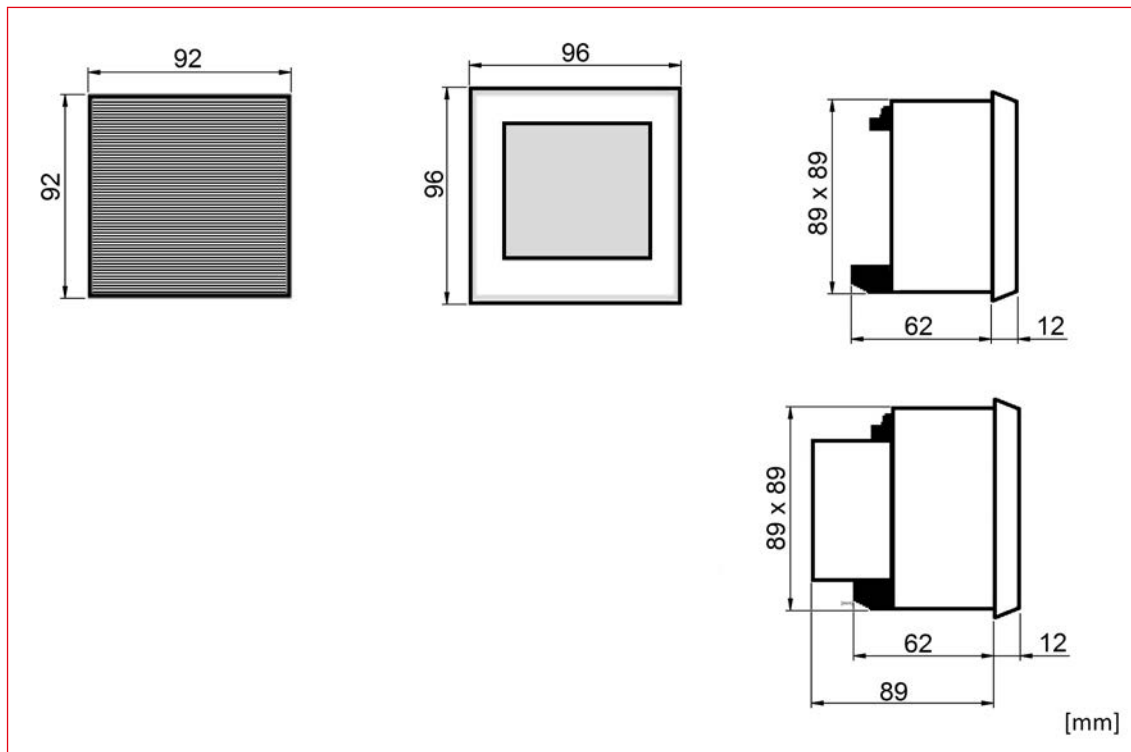
Emission and immunity tests	Acc. to EN 62052-11
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AMBIENT CONDITIONS

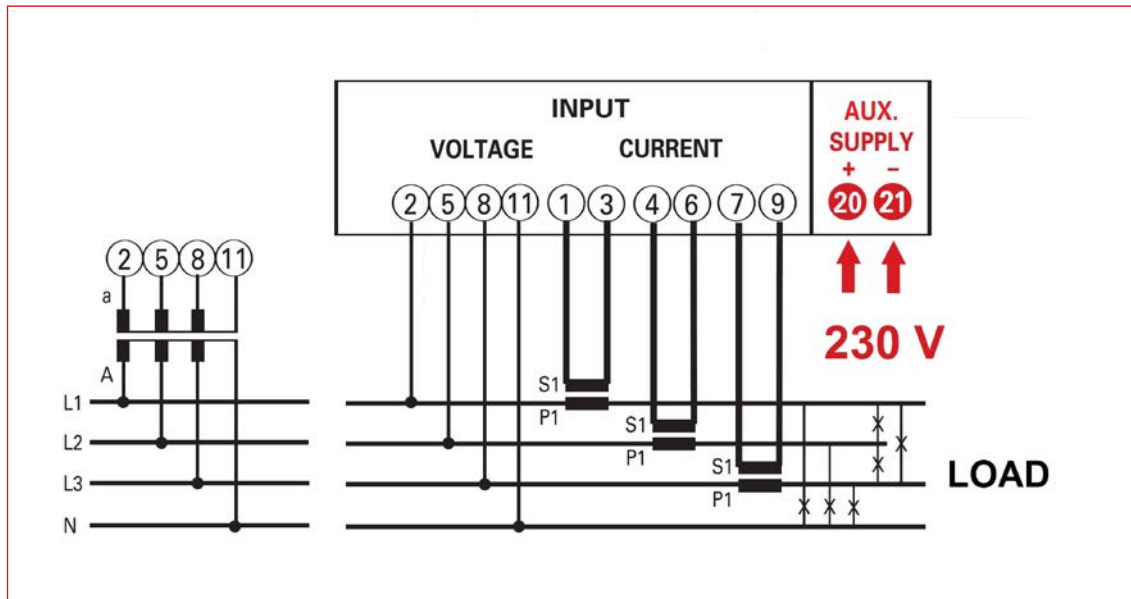
Reference temperature	23 °C \pm 2 °C
Operating temperature	-5 ... 55 °C
Limit range for storage and transport	-25 ... 70 °C
Temperature influence	< 0.1%/°C
Power dissipation for thermal dimensions of the control cabinet	< 5 W

■ Mains Analyser NA96

■ MGF39000 / MGF39001 Dimensions



■ MGF39000 Wiring Diagram



■ Mains Analyser NA96

■ Plug-in Module for Alarm Contacts for NA96/NA96+ - MGF3900A--

DESCRIPTION

Programming of: measured quantity, limit value, type of alarm, relay behaviour, hysteresis, On delay, and Off delay. The NA96 and NA96+ modules in conjunction with the multifunction module allow the monitoring of two measured quantities by two limit contacts. Each multi-function module, NA96 and NA96+, can accommodate up to two MGF3900A modules so that 4 limit contacts are available.

PROGRAMMABLE PARAMETERS

Values: 4-wire three-phase mains, 3 current transformers (3n3E)	U1, U2, U3 Phase voltage	
	U12, U23, U31 Phase-to-phase voltage	
	A1, A2, A3 Phase current	
	P Active power (total)	
	P1, P2, P3 Active power (phase)	
	VAr Reactive power (total)	
	VAr1, VAr2, VAr3 Reactive power (phase)	
	PF Power factor	
	FrEq Frequency	
	U12, U23, U31 Phase-to-phase voltage	
Values: 3-wire three-phase main, 3 current transformers (3-3E) 3-wire three-phase power, 2 current transformers (ARON) (3-2E)	A1, A2, A3 Phase current	
	P Active power (total)	
	VAr Reactive power (total)	
	PF Power factor	
	FrEq Frequency	
	U1 Phase voltage	
	A1 Phase current	
	P Active power	
	VAr Reactive power	
	PF Power factor	
Values: AC mains (1-n1E)	FrEq Frequency	
	U1 Phase voltage	
	A1 Phase current	
	P Active power	
	VAr Reactive power	
	PF Power factor	
	FrEq Frequency	
	Alarm type: Min and Max contact	
	Relay state: Relay On or Off in normal state	
	Hysteresis: 0...20%	
On delay: 0...99 s		
Limit value	Off delay: 0...99 s	
	OUTPUT	
	Output:	2 relays with CO contacts SPDT-NO, potential-free
	Contact load:	5A 250V AC $\cos\phi$ 1 – 3A 250V AC - $\cos\phi$ 0,4 – 5A 30V DC
	AUXILIARY VOLTAGE (data apply to a combination of NA96 + MGF3900A module)	
	Intrinsic consumption MGF3900A:	≤ 1VA
	Intrinsic consumption NA96 + module MGF3900A:	≤ 5VA
	Intrinsic consumption NA96 + 2 modules MGF3900A:	≤ 6VA
	ELECTRICAL SAFETY (data apply to a combination of NA96 + MGF3900A module)	
	Test voltage:	2 kV rms 50 Hz/1 min
Test circuits:	Measurement input, auxiliary voltage, output 1 - output 2	
HOUSING		
Housing:	Module with connector (for connecting to NA96)	
Housing depth:	81 mm (NA96 + module)	
Connection:	Screw terminal	
	Rigid cable max. 4 mm ² , flexible cable max. 2.5 mm ²	
Housing material:	Polycarbonate, self self-extinguishing	

■ Mains Analyser NA96

■ Plug-in Module for Impulse Contacts for NA96/NA96+ - MGF39001--

DESCRIPTION

Programming of: Energy allocation (active and/or reactive), pulse value and pulse duration. The module MGF39001 in combination with a device of type NA96 and NA96+ allows the transfer of energy values. Both independent and galvanically isolated pulse outputs can be freely allocated to active and/ or reactive energy. For each device (NA96), a maximum of two modules MGF39001 can be used, resulting in 4 pulse outputs.

PROGRAMMABLE PARAMETERS (for each output)

Allocatable quantity:	Active or reactive energy
Pulse value:	1 imp/10Wh - 100Wh - 1kWh - 10kWh - 100kWh - 1MWh - 10MWh
Pulse duration:	1 imp/10varh - 100varh - 1kvarh - 10kvarh - 100kvarh - 1Mvarh - 10Mvarh
	50 - 100 - 200 - 300ms

OUTPUT

Output:	2 optical relays with potential-free contacts SPST-NO
Loading capacity:	110 V AC/DC - 50mA

AUXILIARY VOLTAGE (data apply to a combination of NA96 + module MGF39001)

Intrinsic consumption MGF39001:	≤ 1VA
Intrinsic consumption NA96 + module MGF39001:	≤ 5VA
Intrinsic consumption NA96 + 2 modules MGF39001:	≤ 6VA

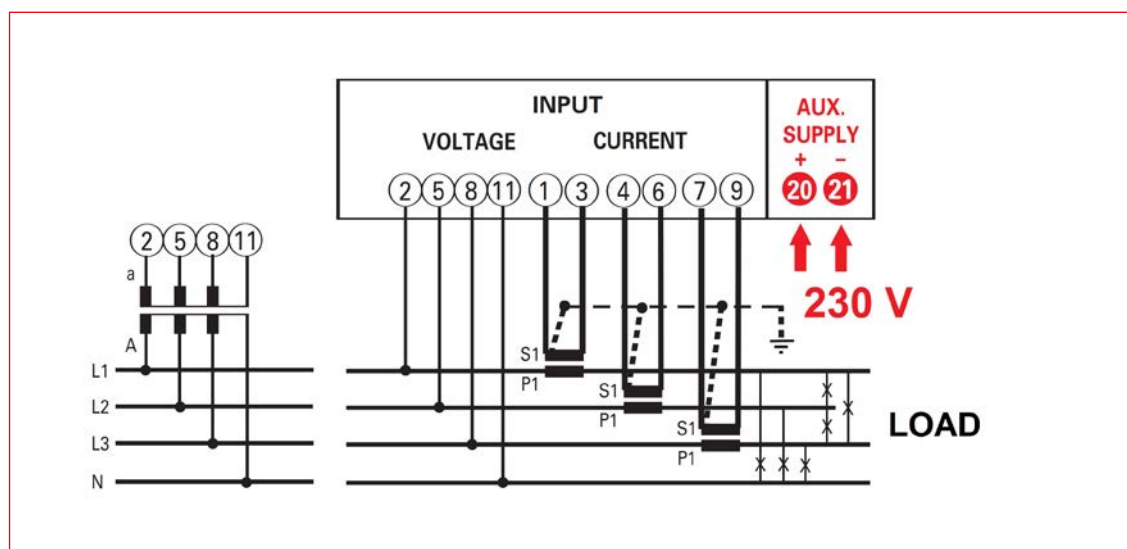
ELECTRICAL SAFETY (data apply to a combination of NA96 + module MGF39001)

Test voltage:	2 kV R.M.S. 50Hz/1 min
Test circuits:	Measurement input, auxiliary voltage, output 1 - output 2

HOUSING

Housing:	Module with connector (for connecting to NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	Screw terminal
	Rigid cable max. 4 mm ² , flexible cable max. 2.5 mm ²
Housing material:	Polycarbonate, self-extinguishing

■ MGF39001 Wiring Diagram



■ Mains Analyser NA96

■ Plug-in Module for Analog Contacts for NA96/NA96+ - MGF3900M--

DESCRIPTION

Programming of: Measured quantity, initial value of the measuring range, final value of the measuring range, output 0...20 mA - 4...20 mA. The module MGF3900M in conjunction with the multi-function module NA96 and NA96+ allows the mapping of two measured quantities to the analogue signal 0... 20 mA signal and/or 4... 20 mA. Each multi-function module NA96 and NA96+ can accommodate a maximum of 2 modules MGF3900M so that 4 analogue outputs are available.

PROGRAMMABLE PARAMETERS

Values: 4-wire three-phase mains, 3 current transformers (3n3E)	U1, U2, U3 Phase voltage
	U12, U23, U31 Phase-to-phase voltage
	A1, A2, A3 Phase current
	P Active power (total)
	P1, P2, P3 Active power (phase)
	VAr Reactive power (total)
	VAr1, VAr2, VAr3 Reactive power (phase)
	PF Power factor
	FrEq Frequency
	U12, U23, U31 Phase-to-phase voltage
Values: 3-wire three-phase main, 3 current transformers (3-3E) 3-wire three-phase power, 2 current transformers (ARON) (3-2E)	A1, A2, A3 Phase current
	P Active power (total)
	VAr Reactive power (total)
	PF Power factor
	FrEq Frequency
Values: AC mains (1-n1E)	U1 Phase voltage
	A1 Phase current
	P Active power
	VAr Reactive power
	PF Power factor
	FrEq Frequency

OUTPUT

Output signal:	0...20mA, 4...20mA
Initial value of the measuring range:	Value of the measured quant. that is 0 mA (for output 0 .. 20 mA or 4 mA (for output 4...20 mA).
Final value of the measuring range:	Value of the measured quantity that is 20 mA
Type:	Unidirectional
Accuracy:	Class 0.5
Set time:	≤ 600ms
Nominal current:	0...20 und 4...20mA
Output burden:	≤ 750 Ω

AUXILIARY VOLTAGE (data apply to a combination of NA96 + module MGF3900M)

Intrinsic consumption MGF3900M:	≤ 1VA
Intrinsic consumption NA96 + module MGF3900M:	≤ 6VA
Intrinsic consumption NA96 + 2 modules MGF3900M:	≤ 8VA

ELECTRICAL SAFETY (data apply to a combination of NA96 + module MGF3900M)

Test voltage:	2 kV rms 50 Hz/1 min
Test circuits:	Measurement input, auxiliary voltage, output 1 - output 2

HOUSING

Housing:	Module with connector (for connecting to NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	Screw terminal
	Rigid cable max. 4 mm ² , flexible cable max. 2.5 mm ²
Housing material:	Polycarbonate, self-extinguishing

■ Mains Analyser NA96

■ Plug-in Module Energy Value Storage - RS485 Interface for NA96/NA96+ - MGF3900S--

DESCRIPTION

Module MGF3900S combined with meters of NA 96HD/HD+ series makes available, by RS485 communication, all the data relevant to carried out measurement as well as the configuration parameters. Thanks to the internal storage, it is possible to store the energy counts of the main measured parameters. By the RS485 communication it is possible to query the device having access to the stored data.

PROGRAMMABLE PARAMETERS - MEMORY	
Values:	U1, U2, U3 Phase voltage
	U12, U23, U31 Phase-to-phase voltage
	A1, A2, A3 Phase current
	P Active power (total)
	P1, P2, P3 Active power (phase)
	VAR Reactive power (total)
	VAR1, VAR2, VAR3 Reactive power (phase)
	PF Power factor
	FrEq Frequency
	State of alarms
Clock:	hour, minutes, seconds
Date:	day, month, year
Daylight saving time: s	starting date and time, ending date and time
Time interval between the data backup:	2-5-10-30-60 seconds – 2-5-10 minutes
Reset saved data	possible
RS485 COMMUNICATION	
Isolation:	Galvanically insulated from input and aux. supply (NA 96HD/HD+)
Standard:	RS485 - 3 wire
Transmission:	serial asynchronous
Protocol:	compatible JBUS/MODBUS
Bit number:	8
Stop bit:	1
Required response time to request:	≤ 200ms
Meters that can be connected on the bus:	32 (up to 255 with RS485 repeater)
Highest distance from supervisor:	1200 m
PROGRAMMABLE PARAMETERS - RS485	
Address:	1...255
Baud rate:	4.800 - 9.600 - 19.200 - 38.400 bit/s
	138.400 : only for NA 96 / NA96+
Parity bit:	none - even - odd
AUXILIARY SUPPLY	
Value referred to combination NA 96 and MGF3900S interface	≤ 5VA
INSULATION (EN61010)	
A.C. voltage test:	2 kV R.M.S. 50Hz/1min
Considered circuits:	measure, aux. supply, RS485 communication
HOUSING	
Housing:	Module with connector (for connecting to NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	Screw terminal
	Rigid cable max. 4 mm ² , flexible cable max. 2.5 mm ²
Housing material:	Polycarbonate, self-extinguishing

■ Mains Analyser NA96

■ Plug-in Module with RS485 Interface for NA96 - MGF3900R--

DESCRIPTION

The module MGF3900R in conjunction with the device of type NA 96 and NA96+ allows read-out of all available parameterized data through the RS485 interface.

RS485 INTERFACE

Isolation:	Galvanic isolation between input and supply (NA96)
Standard:	RS485 - 3 wire
Transfer:	Asynchronous serial
Protocol:	Compatible with JBUS / MODBUS
Number of bits / stop bits:	8 / 1
Data read-out time:	≤ 200ms
Number of devices to be connected:	32 (up to 255 with RS485 repeater)
Maximum distance of devices:	1200m

PROGRAMMABLE PARAMETERS

Address:	1...255
Transfer speed:	4.800 - 9.600 - 19.200 - 38.400 bit/s
Parity bit:	none - even - odd

AUXILIARY VOLTAGE (data apply to a combination of NA96 + module MGF3900R)

Intrinsic consumption:	≤ 5VA
------------------------	-------

ELECTRICAL SAFETY (data apply to a combination of NA96 + module MGF3900R)

Test voltage:	2 kV rms 50 Hz/1 min
Test circuits:	Measurement input, auxiliary voltage, output 1 - output 2

HOUSING

Housing:	Module with connector (for connecting to NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	Screw terminal Rigid cable max. 4 mm ² , flexible cable max. 2.5 mm ²
Housing material:	Polycarbonate, self-extinguishing

■ Interface Communication Ethernet for NA96/NA96+ - MGF3900E--

DESCRIPTION

Modul MGF3900E combined with meters of NA96/NA96+ series makes available by ethernet communication the relevant date measurements.

ETHERNET COMMUNICATION

Isolation:	Galvanically insulated from input and aux. supply (NA96/NA96+)
Standard:	IEEE802.3
Baud rate:	10 Mb/s

PROGRAMMING

For programming use a browser (for instance Internet Explorer), by consulting the manual supplied with module MGF3900E.

AUXILIARY SUPPLY

Value referred to combination NA96/NA96 and interface MGF3900E	≤ 5VA
--	-------

HOUSING

Housing:	Module with connector (for connecting to NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	RJ45
Housing material:	Polycarbonate, self-extinguishing

■ Plug-in Module for M-Bus for NA96/NA96+ - MGF3900B--

DESCRIPTION

The module MGF3900B in conjunction with the device of type NA 96 allows reading of kWh by the M-bus interface. Not calibratable!

M-BUS COMMUNICATION

Isolation:	Galvanic isolation between input and supply (NA96/NA96+)
Standard:	EN 1434-3
Transfer:	Asynchronous serial
Protocol:	M-BUS
Number of bits:	8
Stop bit:	1

PROGRAMMABLE PARAMETERS

Address:	0..250
Baud rate:	300 - 600 - 1.200 - 2.400 - 4.800 - 9.600 bit/s

AUXILIARY VOLTAGE (data apply to a combination of NA96 + module MGF3900B)

Intrinsic consumption:	≤ 5VA
------------------------	-------

ELECTRICAL SAFETY (data apply to a combination of NA96 + module MGF3900B)

Test voltage:	2 kV rms 50 Hz/1 min
Test circuits:	Measurement input, auxiliary voltage, output 1 - output 2

HOUSING

Housing:	Module with connector (for connecting to NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	Screw terminal Rigid cable max. 4 mm ² , flexible cable max. 2.5 mm ²
Housing material:	Polycarbonate, self-extinguishing

■ Mains Analyser NA96

■ Plug-in Module with Profibus Interface for NA96/NA96+ - MGF3900P--

DESCRIPTION

The module MGF3900P in conjunction with the multi-function module NA 96 and NA96+ allows the readout of all measured values and configuration parameters via PROFIBUS communication.

PROFIBUS COMMUNICATION

Isolation:	Galvanic isolation between input and auxiliary voltage (NA96)
Standard:	PROFIBUS EN50170
Response time:	≤ 10ms
Maximum distance from master:	Standard
Baud rate:	up to 3 Mbps

PROGRAMMABLE PARAMETERS

Address:	1...127
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AUXILIARY VOLTAGE (data apply to a combination of NA96 + module MGF3900P)

Intrinsic consumption:	≤ 5VA
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ELECTRICAL SAFETY (data apply to a combination of NA96 + module MGF3900P)

Test voltage:	2 kV rms 50 Hz/1 min
Test circuits:	Measurement input, auxiliary voltage, output 1 - output 2

HOUSING

Housing:	Module with connector (for connecting to the device NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	SUB-D, 9-pole
Housing material:	Polycarbonate, self-extinguishing

■ Plug-in Module for Lonworks for NA96 and NA96+ - MGF3900L--

DESCRIPTION

The module MGF3900L in conjunction with the multi-function module NA 96 and NA96+ allows the readout of all measured values and configuration parameters via LONWORKS communication.

LONWORKS COMMUNICATION

Isolation:	Galvanic isolation between input and auxiliary voltage (NA96)
Standard:	FTT10

AUXILIARY VOLTAGE (data apply to a combination of NA96 + module MGF3900L)

Intrinsic consumption:	≤ 5VA
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ELECTRICAL SAFETY (data apply to a combination of NA96 + module MGF3900L)

Test voltage:	1 kV R.M.S. 50Hz/1min
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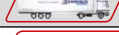


HOUSING

Housing:	Module with connector (for connecting to NA96)
Housing depth:	81 mm (NA96 + module)
Connection:	Screw terminal
	Rigid cable max. 4 mm ² , flexible cable max. 2.5 mm ²
Housing material:	Polycarbonate, self-extinguishing

■ Software

Functions:	Data acquisition via RS485 serial port and/or Ethernet up to 15 channels
	Instantaneous displays of parameters measured by devices (multifunction NA96 or NA96+) concentrators used for accounting of electricity or other sources
	Analogic or digital display
	Realization of graphic trends for one or more magnitudes with the opportunity to export in a tabular form
	Setting of software alarm thresholds to password-enabled users
	Display of active alarms
	Historical archive of events and alarms
	Monitoring of energy consumption for each device or for set creating one or more tariff calendars
Connection:	Web-server function to grant remote access to the central system where MIDAs Evo is installed using a simple Internet browser by specifying the IP address in the address bar
	The standard RS485 can support up to 31 devices, but using a repeater interface every 31 units it can be increased up to 247 units. Using a PC connected to a company LAN network or to a local switch, through multiple interfaces MGZEM001 or MGF3900E, it is possible to create networks up to 1020 devices (max. number that the MIDAs Evo software can manage).
Versions:	NA96-Software MIDAsEvo1 up to 5 devices (MGF39SE1)
	NA96-Software MIDAsEvo2 up to 20 devices (MGF39SE2)
	NA96-Software MIDAsEvo3 unlimited devices (MGF39SE3)

Mains Analyser NA96

DESCRIPTION	AVAILABLE	ORDER NO.
Mains Analyser NA96		
Netanalyser 96x96mm, NA96		MGF39000
Netanalyser 96x96mm, NA96+		MGF39001
Modules		
for alarm contacts		MGF3900A
for Impulse Contacts		MGF3900I
for analog contacts		MGF3900M
energy value storage - RS485 interface		MGF3900S
with RS485 interface, Modbus/JBUS compatible		MGF3900R
Interface communication Ethernet with MIDAsEvo-software		MGF3900E
for M-Bus		MGF3900B
with profibus interface		MGF3900P
for lonworks		MGF3900L
Accessories and Software		
Ethernet module, din-rail		MGZEM001
Software MIDAsEvo1 up to 5 devices with E-Mail licence		MGF39SE1
Software MIDAsEvo2 up to 20 devices with USB-dongle		MGF39SE2
Software MIDAsEvo3 unlimited devices/USB-dongle		MGF39SE3

■ Mains Analyser MF9



MGF37900

■ Schrack-Info

- Three-phase line 80...500V (phase-phase)
- Connection on dedicated CT
- Programmable external CT ratio
- Active energy class 1
- Pulse output
- RS485 communication by ModBus RTU/TCP protocol
- Phase sequence correction, diagnostic

Housing

Front frame	96 x 96 mm
Depth	62 mm
Panel cut-out flush mounting	92 x 92 mm
Housing material	Polycarbonate (self-extinguishing)
Degree of protection	IP 54 (front) – IP 20 (terminals)

Display

Display	LCD backlit
Measuring display	4 lines – 4 digits, size 9 mm
Energy count	8 digits, size 6 mm
Accuracy (+ 1 digit)	Active energy: class 1
	Reactive energy: class 1
	Voltage: class 0,5
	Current: class 0,5
	Power: class 1
	Reactive power: class 1
	Apparent power: class 1
Programming	Frequency: $\pm 0,1$ Hz
	THD: class 2
Programming	4 front keys, access protected by password

Programmable parameters

Parameters	Customized display page
	Connection (1+N or 3+N)
	Average power /current delay time
	Start time (run hour meter)
	RS485 communication
	Impulse output
	CT - ratio

Mains Analyser MF9

Input	
Input	Single-phase, three phase network 4-wire
Rated voltage U_n	400V (three-phase, phase-phase)
Max. input voltage	80 500V (three-phase, phase-phase) 50 290V (single-phase)
Rated current	5A – only with current transformer
Max. current I_{max}	1.2 I_n
Overload	20 x I_n /0.5s
Rated frequency	50Hz - 60 Hz (automatic selection)
Frequency tolerance:	45 65 Hz
Harmonic contents:	up to 40. harmonic
Peak factor:	Current 2 - Voltage 1,5
Starting time (energy count):	< 5s
Rated burden:	Voltage: < 0,2VA (phase - neutral to the voltage rating) Current: < 0,4VA (for phase to the max. current 6A)

Auxiliary supply	
Auxiliary supply:	Taken from measurement (Phase L1 - N)

Insulation	
Installation category:	III
Pollution degree:	2
Insulation voltage rating:	300 V (phase-neutral conductor)
Impulse withstand resistance:	Considered circuits: 6 kV, 1,2/50 μ s, 0,5 J, 3 kV alternating voltage r.m.s 50Hz 1 min Measure inputs: 6 kV, 1,2/50 μ s, 0,5 J, 3 kV alternating voltage r.m.s 50Hz 1 min All circuits and earth: 4 kV alternating voltage r.m.s 50Hz 1 min

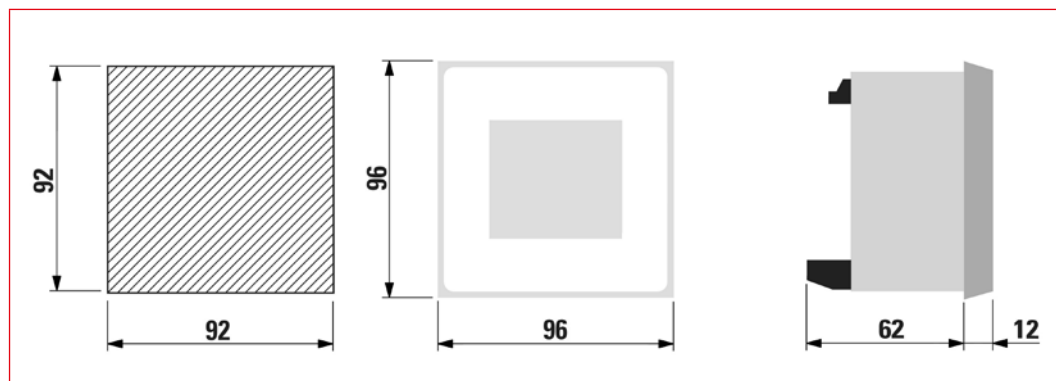
Elektro magnetic compatibility	
Emission according to:	EN 61326-1 class B, IEC 61326-1 class B
Immunity according to:	EN 61326-1, IEC 61326-1

Environmental conditions	
Reference temperature:	23 °C \pm 2 °C
Operation temperature:	-5 ... 55 °C
Max. temperature range (storage, transport)	-25 ... 70 °C
Max. powerloss	\leq 5W

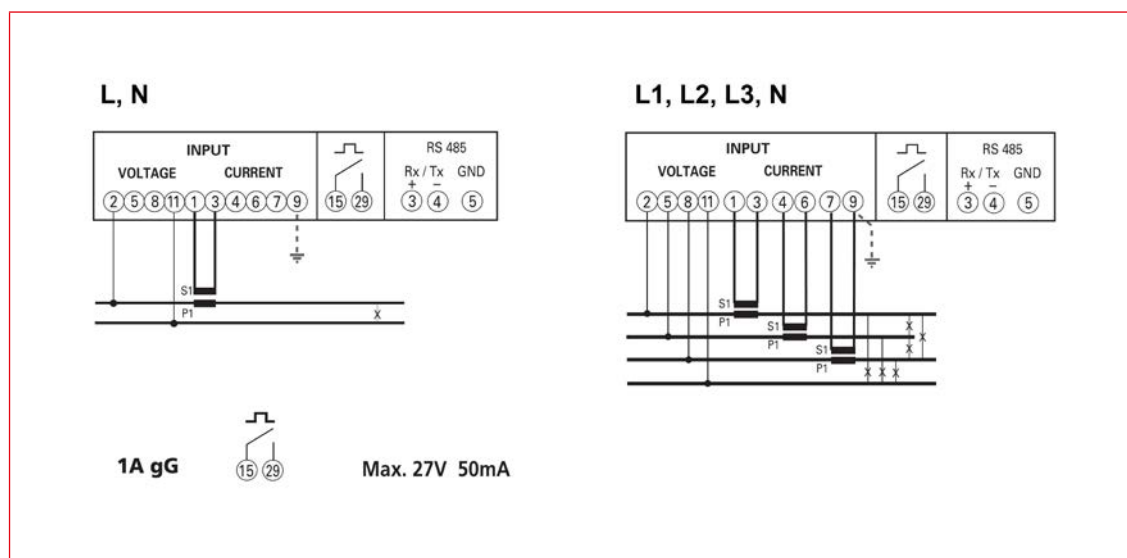
Terminal capacity	
Terminal type	Screw terminals
Voltage input:	Rigid wire 0.05mm ² - 4 mm ² Flexible wire 0.05mm ² - 2.5 mm ² Torque: 0.6 Nm
Current input:	Rigid wire 0.05mm ² - 6 mm ² Flexible wire 0.05mm ² - 4 mm ² Torque: 1 Nm
Outputs:	Rigid wire 0.05mm ² - 4 mm ² Flexible wire 0.05mm ² - 2.5 mm ² Torque: 0.6 Nm

■ Mains Analyser MF9

■ MGF37900 Dimensional Drawing



■ MGF37900 Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Netanalyser MF9, 96x96mm, with RS 485 connection for ModBus RTU/TCP		MGF37900

■ Mains Analyser MF7



MGF37000

■ Schrack-Info

- Low voltage network monitor
- Three-phase network 340...450 V (phase - phase)
- Single-phase network 195...260 V (phase - neutral)
- Connection with dedicated CT
- Programmable primary CT 5...8000 A (41 range)
- True RMS value measurement

■ Technical Data - Part 1

DISPLAY

Values	Display Voltage phase-phase and phase-N Current wire and neutral wire current Frequency Average current Maximum value of average current Working hours (hours and minutes)
Display	LCD backlit
Backlight	Turns off automatically after 20 seconds without operation
Display	10,000 points (4 digits)
Engineering units	Automatic, depending on the setting of the transformer primary current
Resolution	Automatic, with the highest possible decimal places
Reading	update 1.2 seconds
ACCURACY (OF READING)	
Voltage	± 0,5% (80...450 V Phase - Phase)
Current	± 0,5% (10...120% In)
Neutral wire current	± 2%
Frequency	± 0,2 Hz
CURRENT DEMAND	
Display	Current demand and max. current demand
Calculation	Average for current and power on the selected period
Averaging period	5/8/10/15/20/30/60 minutes selectable
Max. demand reset	By hand, by keyboard
PROGRAMMING	
Parameters programming	Front keyboard, 2 keys
Programming access	Key combination
Data and configuration parameters retention	Non-volatile memory (no battery)
PROGRAMMABLE PARAMETERS	
Connection	Single-phase - three-phase (3 and 4 wires)
Programmable primary currents (A)	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 75, 80, 100, 120, 125, 150, 160, 200, 250, 300, 400, 500, 600, 700, 750, 800, 1000, 1200, 1250, 1500, 1600, 2000, 2500, 3000, 3200, 4000, 5000, 6000, 7000, 7500, 8000 A
Current max. demand	Delay time, reset
Working hours	Reset

■ Mains Analyser MF7

■ Technical Data - Part 2

INPUT

Power system	Single-phase and three-phase 4-wire network
Three-phase voltage	340...450V (phase-phase)
Single-phase voltage	195...260V
Current rating I _n	In: 5A or 1A
Continuous overload:	1,2I _n
Instantaneous overload	20I _n /0,5 seconds
Connection	with external dedicated current transformer Inputs have a common point
Frequency rating f _n	50Hz
Tolerance:	47...63Hz
Type of measurement	True RMS
Harmonic content	Up to the 16th harmonic
Voltage rated burden	< 1VA (each phase)
Current rated burden	< 0,5VA (each phase)

AUXILIARY SUPPLY

Supply	Taken from measurement (self supplied)
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INSULATION

Installation category	III
Pollution degree	2
Insulation voltage rating	660V
Voltage test	A.C. voltage test 4kV r.m.s. value 50Hz/1 min
Considered circuits	All circuits and earth

TESTS FOR ELETROMAMAGNETIC COMPATIBILITY

Emission tests	according to EN 61000-6-3
Immunity tests	according to EN 61000-6-2

ENVIRONMENTAL CONDITIONS

Reference temperature	23°C ± 2°C
Specified operating range	-5...55°C
Limit range for storage and transport	-25...70°C
Variation of the class index	< 0,1% /°C
RH	0-95% non-condensing
Max. power dissipation for switchboard thermal calculation	< 6,8W

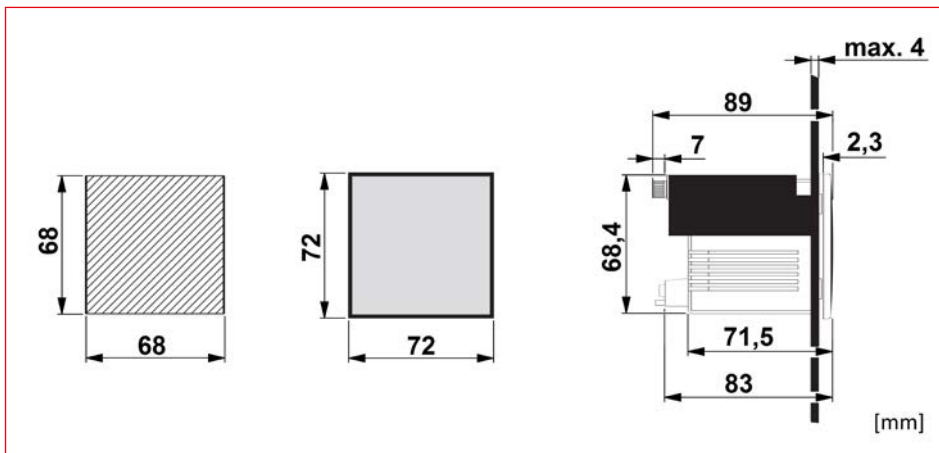
HOUSING

Housing	Flush mounting (panel cutout 68x68mm)
Front frame	72x72mm
Depth	75 mm
Ammetric terminals range	Rigid cable min.0,05mm ² / max. 4mm ² Flexible cable min.0,05mm ² / max. 2,5mm ²
Volmetric terminals range	Rigid cable min. 0,05mm ² / max. 4mm ² Flexible cable min.0,05mm ² / max. 2,5mm ²
Housing material	self-extinguishing makrolon
Protection degree (EN60529)	IP54 front frame, IP20 terminals
Weight	250 grams

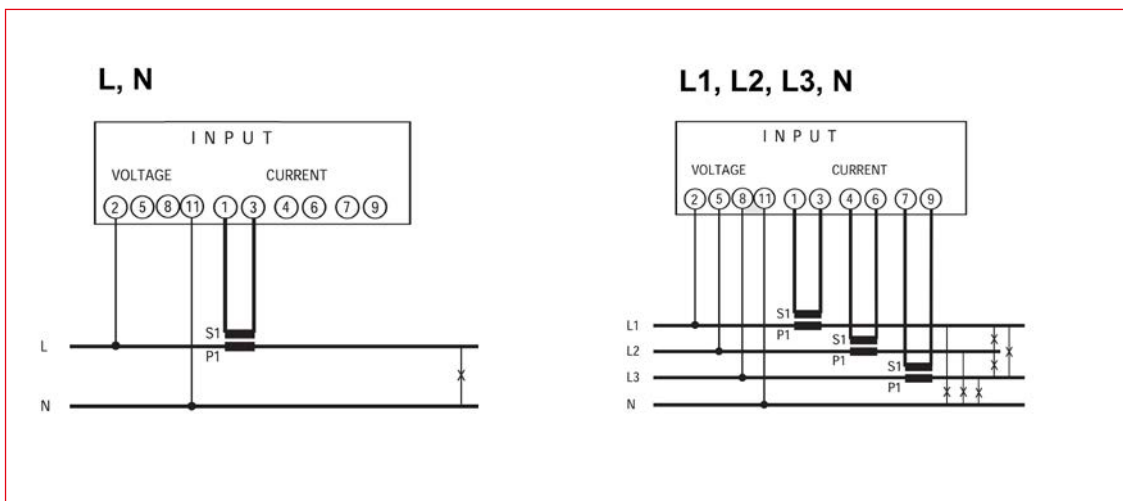
Measuring Instruments and Mains Analysers

■ Mains Analyser MF7

■ MGF37000 Dimensions



■ MGF37000 Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Netanalyser MF7, 72x72mm, base unit, no accessories		MGF37000

■ Mains Analyser SD



MGF33000

■ Schrack-Info

- The MGF33000 model is a digital device, able to measure all the variables associated with an electrical line.
- It accepts the three current and three voltages signals in a 4 wire configuration.
- It is also possible to use it in 3 wire configuration, using two or three current transformers.
- Two relay programmable outputs and one serial port RS485 for Modbus RTU protocol

■ Technical Data MGF33000 - Part 1

MAIN FEATURES

Features:	DIN-size 96 x 96
	LCD 64 x 64 display, with backlight
	True RMS voltage and current measurement
	Neutral current
	Harmonic distortion (THD on V and I)
	Over 55 parameters total
	Maximum demand
	Maximum and minimum values
	4 quadrant measurement
	Two relay outputs, programmable as: energy meter, alarms or dedicated contacts
	Serial port RS485
	Modbus RTU protocol
	Programmable through front keys or serial line

MEASURING ENVIRONMENT

Electrical Parameter:	Voltage (Line-to-Neutral)
	Voltage (Line-to-Line)
	Neutral current
	Current
	Active power (P)
	Reactive power (Q)
	Apparent power (S)
	Power factor (cos φ)
	Maximum: Current, active -, reactive - and apparent power
	Frequency
	THD current

INPUT

Rated voltage:	400 VAC, max. 300 V Phase-Ground
Burden:	1 mA per phase
Measuring range:	20-120 % Vn
Rated current	5 A
Burden:	0,3 VA per phase
Measuring range:	0-120 % In
Frequency	50-60 Hz
Power supply:	85-264 VAC
Consumption:	4 VA
Overload:	2 x In permanent, 20 x In 1 s
	1,2 x Vn permanent, 2 x Vn 10 s

■ Mains Analyser SD

■ Technical Data MGF33000 - Part 2

ACCURACY (Operating range 20-120%)

Voltage	0,3% reading + 0.3% F.S.
Current	0,3% reading + 0.3% F.S.
Act. Power	0,3% reading + 0.3% F.S.
React. Power	0,3% reading + 0.3% F.S.
App. Power	0,3% reading + 0.3% F.S.
P.F.	1% F.S.
Freq.	0,2% F.S.
Act. Energy	0,5% F.S.
React. Energy	1% reading

RELAY-OUTPUT

Number of outputs	2
Type	N.O. relay
Contact specification:	250V-AC, 3A

RS485-OUTPUT

Type:	RS485
Application:	The serial line is isolated from the main circuit, allowing leaving the communication bus floating, or connected to ground at the best point in the installation.
Connection	2 wire, half duplex
Baudrate	Programmable (1.200-19.200 bps)
Baudrate (standard)	9600 bauds
Max. No. of instruments per line	32
Net maximum length per line	1250 m

LCD DISPLAY

Height of digits:	14mm. (4 parameters per page)
Built-in keypad	5 keys
Back lighting	yes

DIMENSIONS

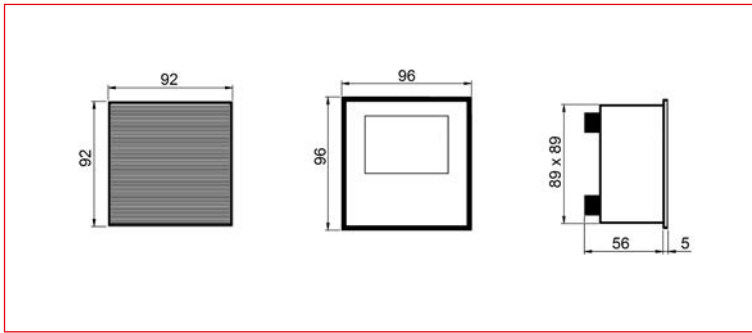
Device:	96 x 96 x 61 mm
	Allow additional clearance in the backside of 30 mm for

ENVIRONMENTAL

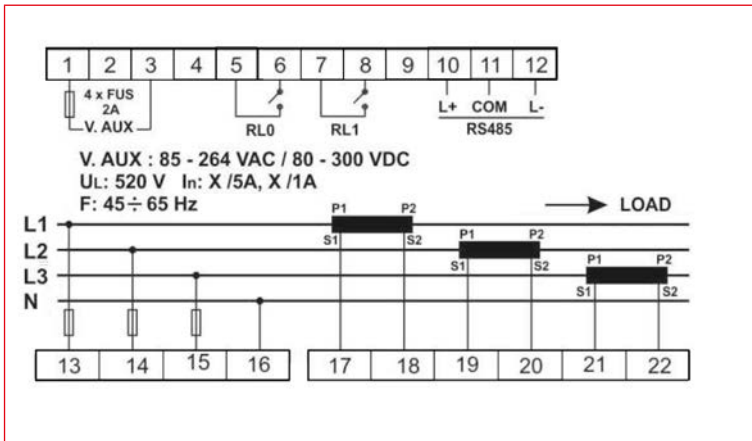
Operating Temp	-10/60 °C
Storage Temp	-20/70 °C
RH	0-95% non-condensing
Ventilation	not required
Protection degree Front	IP54. Back IP20

■ Mains Analyser SD

■ MGF33000 Dimensions



■ MGF33000 Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Network analyser SD, 96 x 96		MGF33000
Network analyser SD9, 96 x 96		MGF33000-A



Digital Multimeter



MGFM9000

Schrack-Info

- Three phase programmable digital multimeter
- 3 current
- 3 voltage phase-phase
- 3 voltage phase-neutral
- Frequency
- Display LEDs 4 digits
- Separate display for current, voltage and frequency

Technical Data

DESCRIPTION

The MGF9000 is a multimeter designed to measure current, voltage and frequency in a three phase network, through the connection to current transformers. A five line display allows to represent simultaneously the three currents, one voltage and frequency.

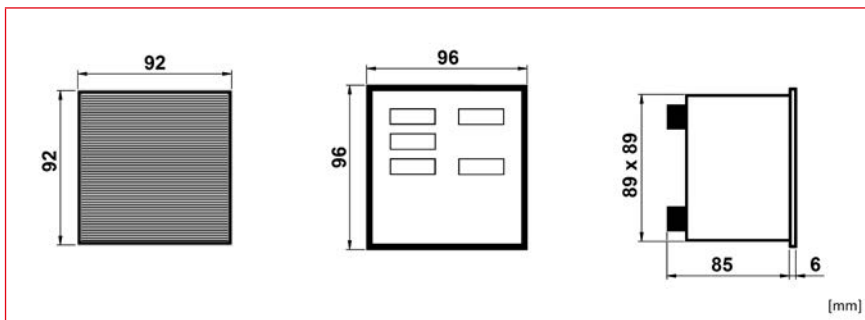
MEASURING ENVIRONMENT

Voltage	3x230 (400) V
Primary nominal current	1, 5, 10, 15, 20, 25, 30, 40, 50, 70, 75, 80, 90, 100, 120, 125, 150, 160, 200, 250, 300, 400, 500, 600, 700, 750, 800, 900, 1000, 1200, 1250, 1400, 1500, 1600, 1750, 1800, 2000, 2200, 2250, 2400, 2500, 2750, 3000, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8000, 9000
Current input	x / 5 A
Frequency	10-100 Hz
Auxiliary supply	230 V AC ± 20%
Accuracy	0,5% + 2 LSD

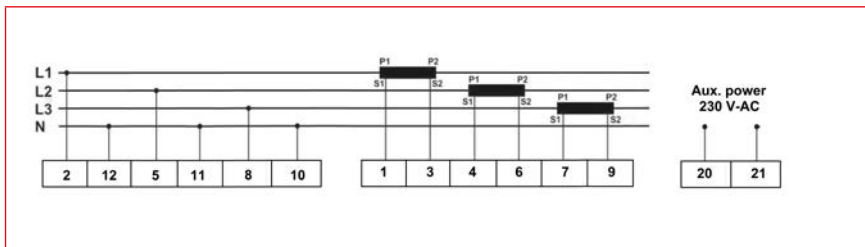
DIMENSIONS / CONNECTIONS

Instrument	96x96x85 mm
Type	pluggable
Conductor size	2,5 mm ²

MGFM9000 Dimensions



MGFM9000 Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Three phase programmable digital multimeter		MGFM9000

Modular Mains Analyser



MGR30000

Schrack-Info

- Three-phase network 80...600 V (phase - phase)
- Single-phase network 50...350 V (phase - neutral)
- Connection with dedicated CT
- Primary CT 5...8000 A
- 41 primary currents settable
- True RMS measurement
- Display with manual or automatic scanning

Technical Data - Part 1

DISPLAY

Values	Display Voltage phase-phase and phase-N Current wire and neutral wire current Frequency Average current Maximum value of average current Working hours (hours and minutes)
Display	LCD backlit
Backlight	Turns off automatically after 20 seconds without operation
Display	10,000 points (4 digits)
Engineering units	Automatic, depending on the setting of the transformer primary current
Resolution	Automatic, with the highest possible decimal places
Reading	update 1.2 seconds
ACCURACY (OF READING)	
Voltage	± 0,5% (80...450 V Phase - Phase)
Current	± 0,5% (10...120% In)
Power	± 1,5% (10...120% Pn/qn/sn cosφ 0,5 ind...0,5cap)
Neutral wire current	± 2%
Frequency	± 0,2 Hz
CURRENT DEMAND	
Display	Current demand and max. current demand
Calculation	Average for current and power on the selected period
Averaging period	5/8/10/15/20/30/60 minutes selectable
Max. demand reset	By hand, by keyboard
PROGRAMMING	
Parameters programming	Front keyboard, 2 keys
Programming access	Key combination
Data and configuration parameters retention	Non-volatile memory (no battery)
PROGRAMMABLE PARAMETERS	
Connection	Single-phase - three-phase 3 and 4 wire
Programmable primary currents (A)	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 75, 80, 100, 120, 125, 150, 160, 200, 250, 300, 400, 500, 600, 700, 750, 800, 1000, 1200, 1250, 1500, 1600, 2000, 2500, 3000, 3200, 4000, 5000, 6000, 7000, 7500, 8000 A
Current - Power max. demand:	Averaging time, max. demand reset
Working hours	Reset

Modular Mains Analyser

Technical Data - Part 2

INPUT

Power system	Single-phase and three-phase 4-wire network
Three-phase voltage	80...600V (phase-phase)
Single-phase voltage	50...350V
Current rating I _n	I _n 5A
Continuous overload:	1,2I _n
Instantaneous overload	20I _n /0,5 seconds
Connection	with external dedicated current transformer Inputs have a common point (terminals 3 - 6 - 9)
Frequency rating f _n	50Hz
Tolerance:	47...63Hz
Type of measurement	True RMS
Harmonic content	Up to the 16th harmonic
Voltage rated burden	≤ 1VA (each phase)
Current rated burden	≤ 0,5VA (each phase)

AUXILIARY SUPPLY

Supply	U _{aux} 115 – 230 / 240 - 400V
Tolerance	0,85...1,1U _{aux}
Rated frequency	50Hz
Working frequency	47...63Hz
Rated burden	≤ 5VA – 2,5W

INSULATION

Installation category	III
Pollution degree	2
Insulation voltage rating	660V
Voltage test	A.C. voltage test 4kV r.m.s. value 50Hz/1 min
Considered circuits	All circuits and earth

TESTS FOR ELECTROMAGNETIC COMPATIBILITY

Emission tests	according to EN 61000-6-3
Immunity tests	according to EN 61000-6-2

ENVIRONMENTAL CONDITIONS

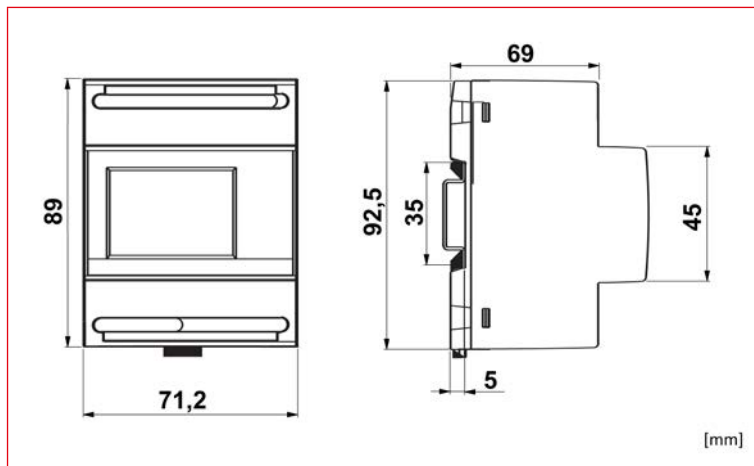
Reference temperature	23°C ± 2°C
Specified operating range	-5...55°C
Limit range for storage and transport	-25...70°C
Variation of the class index	≤ 0,1% /°C
Max. power dissipation for switchboard thermal calculation	≤ 6,8W

HOUSING

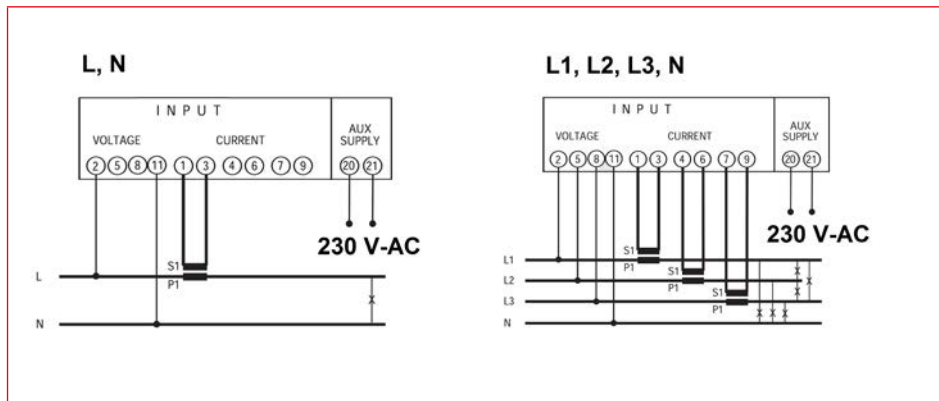
Custodia	4 moduli DIN 43880
Connections	Screw terminals
Ammetric terminals range	Rigid cable min.0,05mm ² / max. 4mm ² Flexible cable min.0,05mm ² / max. 2,5mm ²
Volmetric terminals range	Rigid cable min. 0,05mm ² / max. 4mm ² Flexible cable min.0,05mm ² / max. 2,5mm ²
Mounting	Snap-on 35mm rail
Rail type	Top hat TH35-15 (EN60715)
Housing material	self-extinguishing polycarbonate
Protection degree (EN60529)	IP54 front frame, IP20 terminals
Weight	260 grams

Modular Mains Analyser

MGR30000 Dimensions



MGR30000 Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Modular netanalyser MF7-45 for current transformer		MGR30000

Analogue-Ammeter AC



MGF57025-A

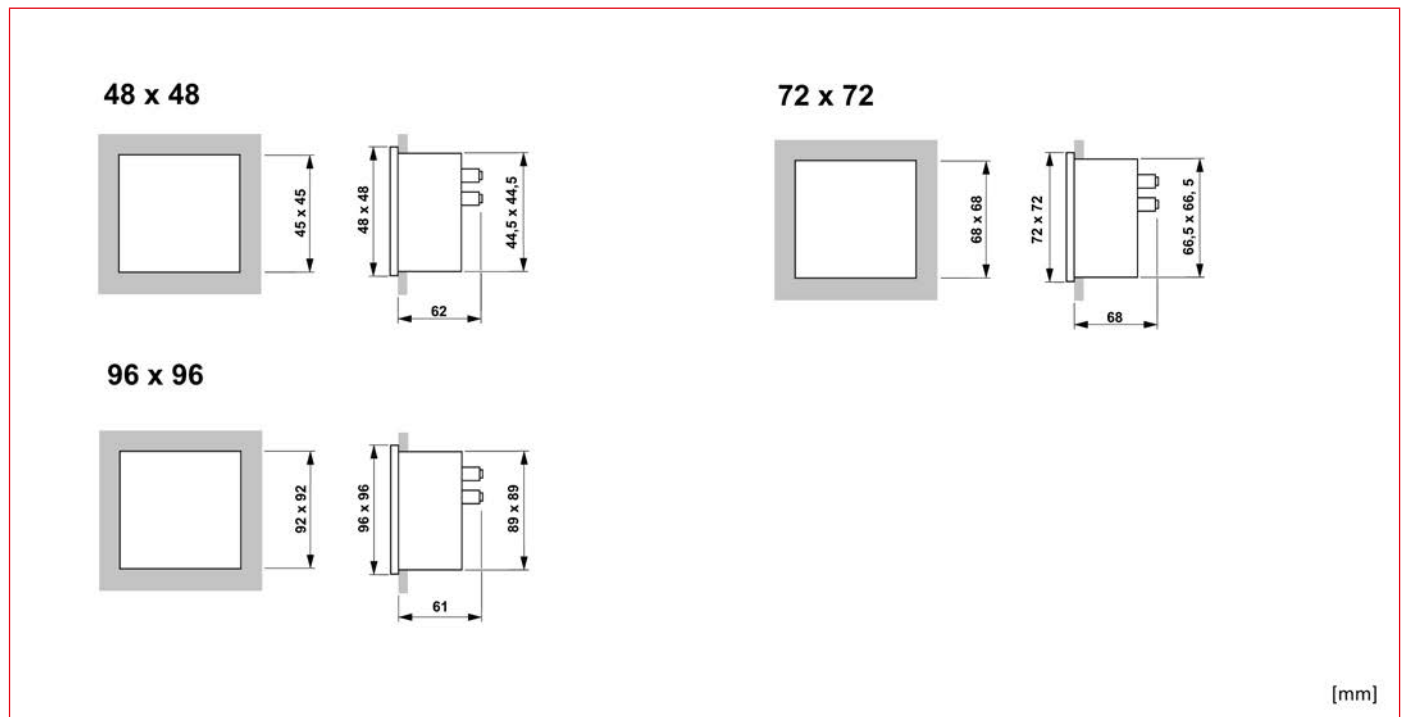
Schrack-Info

The instruments with transformer connection are delivered without a scale-plate. The scale plate is chosen according to the CT. Therefore, the scale plate must be ordered separately.

Technical Data

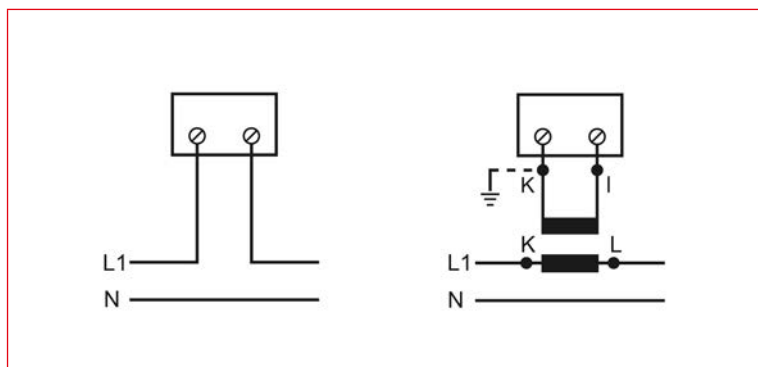
Size:	48 x 48	72 x 72	96 x 96
Measuring range:	5 A, 10 A, 25 A, x/5 A	5 A, 10 A, 25 A, 50 A x/5 A	15 A, 25 A, 50 A x/5 A
Standards:	EN 60051, VDE 0410, BS-89, EN 50081, EN 50082, EN 61010		
Display:	Analog		
Frequency:	15..100 Hz		
Accuracy:	1,5%		
Burden:	0,4 VA		
Power supply:	-		
Working position:	Instruments to use with the dial vertical		
Test voltage:	2kV, 50 Hz, 1 min.		
Overloads:	1.5 In continuous, 5 In 30 s, 10 In 5 s, 40 In 1 s		
Vibration resistance:	VDE 0410, Section 27: 2.5 g, ±0.25 mm, 50 Hz		
Shock resistance:	VDE 0410, Section 28: 15 g		
Operating temperature:	-25°C up to +40°C		
Reference temperature:	+10°C up to +30°C (for accuracy class)		
Protection:	IP52, casings		
	IP00, terminals		

Dimensions






















Analogue-Ammeter AC

Wiring Diagrams



DESCRIPTION	AVAILABLE	ORDER NO.
Analogue-Ammeter AC, 48 x 48		
5A, AC, direct, 48x48		MGF54005-A
10A, AC, direct, 48x48		MGF54010-A
15A, AC, direct, 48x48		MGF54015-A
25A, AC, direct, 48x48		MGF54025-A
for current-transformer 5A, AC, 48x48		MGF54000-A
Analogue-Ammeter AC, 72 x 72		
5A, AC, direct, 72x72		MGF57005-A
10A, AC, direct, 72x72		MGF57010-A
25A, AC, direct, 72x72		MGF57025-A
50A, AC, direct, 72x72		MGF57050-A
for current-transformer 5A, AC, 72x72		MGF57000-A
Analogue-Ammeter AC, 96 x 96		
15A, AC, direct, 96x96		MGF59015-A
25A, AC, direct, 96x96		MGF59025-A
50A, AC, direct, 96x96		MGF59050-A
for current-transformer 5A, AC, 96x96		MGF59000-A
Scale-Plates Analogue-Ammeter AC, 48 x 48		
25A/5A, AC, 48x48		MGS54025-A
50A/5A, AC, 48x48		MGS54050-A
100A/5A, AC, 48x48		MGS54100-A
Scale-Plates Analogue-Ammeter AC, 72 x 72		
50/5A, AC, 72x72		MGS57050-A
60/5A, AC, 72x72		MGS57060-A
80/5A, AC, 72x72		MGS57080-A
100/5A, AC, 72x72		MGS57100-A
150/5A, AC, 72x72		MGS57150-A
200/5A, AC, 72x72		MGS57200-A
250/5A, AC, 72x72		MGS57250-A
300/5A, AC, 72x72		MGS57300-A
400/5A, AC, 72x72		MGS57400-A
500/5A, AC, 72x72		MGS57500-A
600/5A, AC, 72x72		MGS57600-A
800/5A, AC, 72x72		MGS57800-A
1000/5A, AC, 72x72		MGS571K0-A
1500/5A, AC, 72x72		MGS571K5-A
Scale-Plates Analogue-Ammeter AC, 96 x 96		
50/5A, AC, 96x96		MGS59050-A
60/5A, AC, 96x96		MGS59060-A

Analogue-Ammeter AC

DESCRIPTION	AVAILABLE	ORDER NO.
Scale-Plates Analogue-Ammeter AC, 96 x 96		
80/5A, AC, 96x96		MGS59080-A
100/5A, AC, 96x96		MGS59100-A
150/5A, AC, 96x96		MGS59150-A
200/5A, AC, 96x96		MGS59200-A
250/5A, AC, 96x96		MGS59250-A
300/5A, AC, 96x96		MGS59300-A
400/5A, AC, 96x96		MGS59400-A
500/5A, AC, 96x96		MGS59500-A
600/5A, AC, 96x96		MGS59600-A
800/5A, AC, 96x96		MGS59800-A
1000/5A, AC, 96x96		MGS591K0-A
1500/5A, AC, 96x96		MGS591K5-A
2000/5A, AC, 96x96		MGS592K0-A
2500/5A, AC, 96x96		MGS592K5-A
3000/5A, AC, 96x96		MGS593K0-A
Analogue-Ammeter AC for DIN-Rails		
5A direct oder Wandler		MG159005
10A direct		MG159010
25A direct		MG159025
40A direct		MG159040
20A direct		MG109020
Scale-Plates for Analogue-Ammeter AC for DIN-rails		
50A		MG95A050
60A		MG95A060
100A		MG95A100
150A		MG95A150
200A		MG95A200
400A		MG95A400

Analogue-Ammeter DC



MGF17025-A

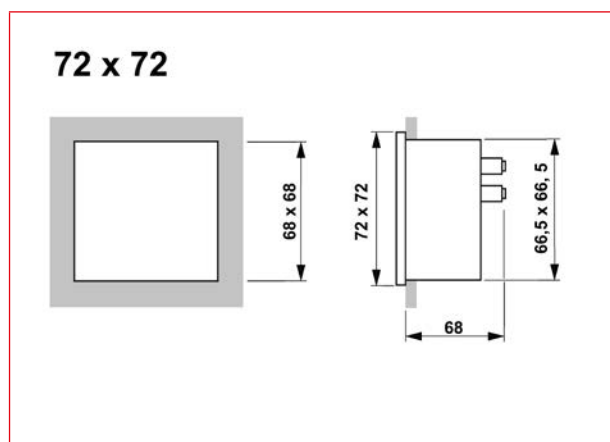
Schrack-Info

The instruments with shunt connection 60 mV are delivered without a scale-plate. The scale plate is chosen according to the shunt. The scale plate must be ordered separately.

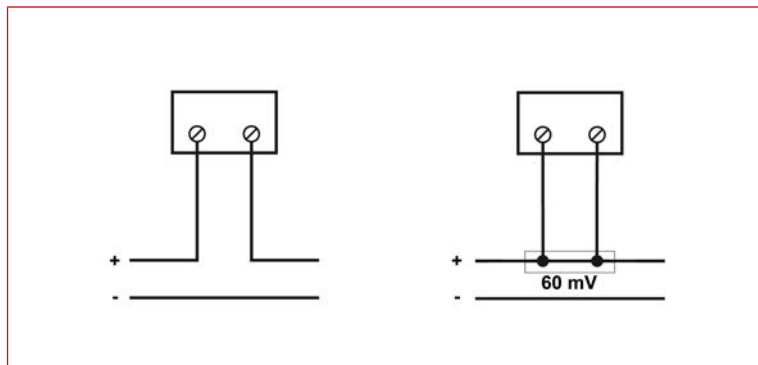
Technical Data

Size:	72 x 72
Measuring range:	25 A, 60 A, for Shunt 60 mV
Standards:	EN 60051, IEC 51, VDE 0410
Display:	Analog
Accuracy:	1,5%
Burden:	1 VA
Power supply:	-
Working position:	Instruments to use with the dial vertical
Test voltage:	2kV
Overloads:	1.5 In continuous, 5 In 30 s
Vibration resistance:	VDE 0410, Section 27: 2.5 g, ±0.25 mm, 50 Hz
Shock resistance:	VDE 0410, Section 28: 15 g
Operating temperature:	-25°C up to +40°C
Reference temperature:	+10°C up to +30°C (for accuracy class)
Protection:	IP52, casings IP00, terminals







Dimensions



Wiring Diagrams



Analogue-Ammeter DC

DESCRIPTION	AVAILABLE	ORDER NO.
Analogue-Ammeter DC, 72 x 72		
25A, DC, direct, 72x72		MGF17025-A
60A, DC, direct, 72x72		MGF17060-A
For shunt, DC, 72x72		MGF17000-A
Scale-Plates for Analogue-Ammeter DC, 72 x 72		
60A, DC, 72x72		MGS17060-A
100A, DC, 72x72		MGS17100-A
300A, DC, 72x72		MGS17300-A
Analogue-Ammeter DC for DIN-Rails		
10A direct		MG154010
25A direct		MG154025

Analogue-Voltmeter AC



MGF67300-A

Schrack-Info

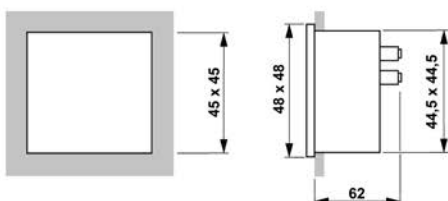
- Voltmeter for AC

Technical Data

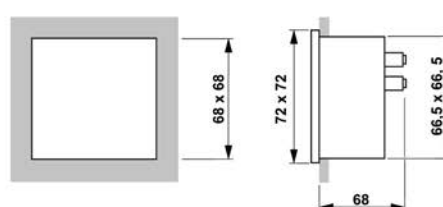
Size:	48 x 48	72 x 72	96 x 96
Measuring range:	500 V	300 V, 500 V	300 V, 500 V
Standards:	EN 60051, VDE 0410, BS-89, EN 50081, EN 50082, EN 61010		
Display:	Analog		
Frequency:	45..65 Hz		
Accuracy:	1,5%		
Burden:	3 VA		
Working position:	Instruments to use with the dial vertical		
Test voltage:	2kV, 50 Hz, 1 min.		
Overloads:	1.2 Vn continuous, 2 Vn 5 s		
Vibration resistance:	VDE 0410, Kapitel 27: 2.5 g, ±0.25 mm, 50 Hz		
Shock resistance:	VDE 0410, chapter 28: 15 g		
Operating temperature:	-25°C up to +40°C		
Reference temperature:	+10°C up to +30°C (for accuracy class)		
Protection:	IP52, casings		
	IP00, terminals		

Dimensions

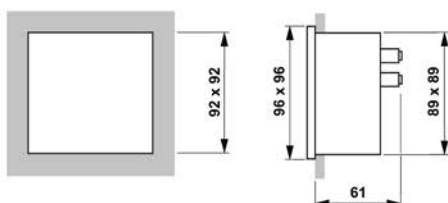
48 x 48



72 x 72



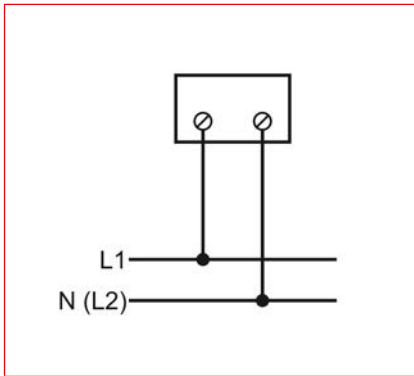
96 x 96








[mm]

Analogue-Voltmeter AC

Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Analogue-Voltmeter AC, 48 x 48		
500V-AC,48x48		MGF64500-A
Analogue-Voltmeter AC, 72 x 72		
300V-AC,72x72		MGF67300-A
500V-AC,72x72		MGF67500-A
Analogue-Voltmeter AC, 96 x 96		
500V-AC,96x96		MGF69500-A
Analogue-Voltmeter AC, for DIN-Rails		
250V-DC		MG059250
500V-DC		MG059500

Analogue-Voltmeter with Integrated Switch



MGF77500-A

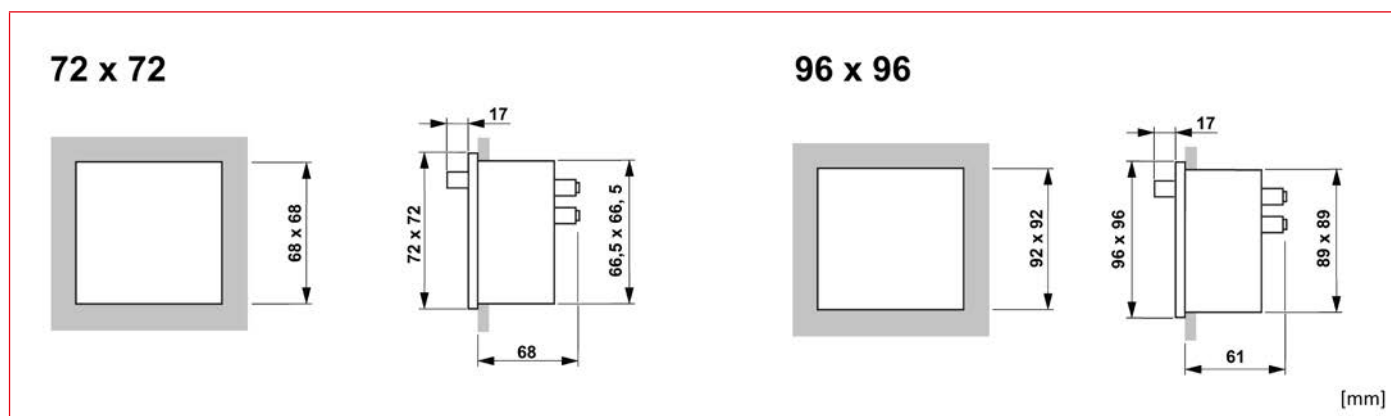
Schrack-Info

- AC voltmeter with integrated switch (L1-N, L2-N, L3-N, L1-L2, L2-L3, L3-L1)

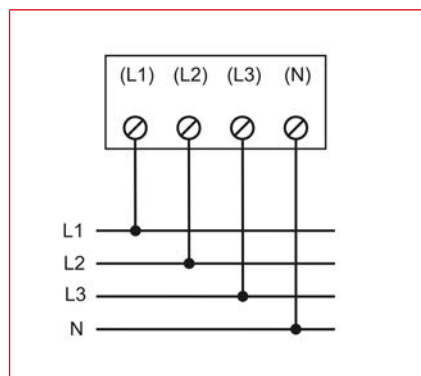
Technical Data

Size:	72 x 72	96 x 96
Measuring range:	500 V	
Standards:	EN 60051, VDE 0410, BS-89, EN 50081, EN 50082, EN 61010	
Version:	Analog with switch (L1, L2, L3, L12, L23, L31)	
Frequency:	45..65 Hz	
Accuracy:	0,015	
Burden:	3 VA	
Working position:	Instruments to use with the dial vertical	
Test voltage:	2kV, 50 Hz, 1 min.	
Overloads:	1.2 Vn continuous, 2 Vn 5 s	
Vibration resistance:	VDE 0410, chapter 27: 2.5 g, ±0.25 mm, 50 Hz	
Shock resistance:	VDE 0410, chapter 28: 15 g	
Operating temperature:	-25°C up to +40°C	
Reference temperature:	+10°C up to +30°C (for accuracy class)	
Protection:	IP30, casings IP00, terminals	

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
Analogue-Voltmeter AC, 72 x 72 with Integrated Switch		
500V-AC,72x72		MGF77500-A
Analogue-Voltmeter AC, 96 x 96 with Integrated Switch		
500V-AC,96x96		MGF79500-A

Analogue-Voltmeter DC



MGF27060-A

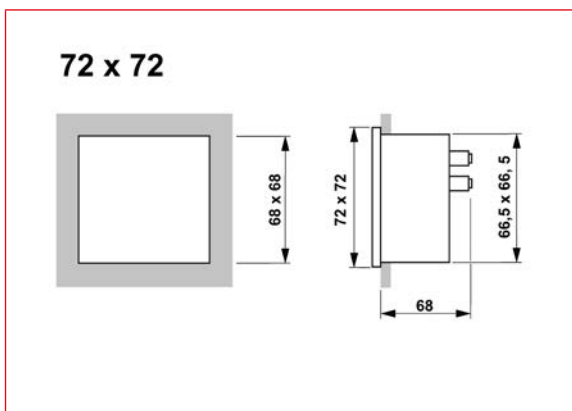
Schrack-Info

- Voltmeter for DC

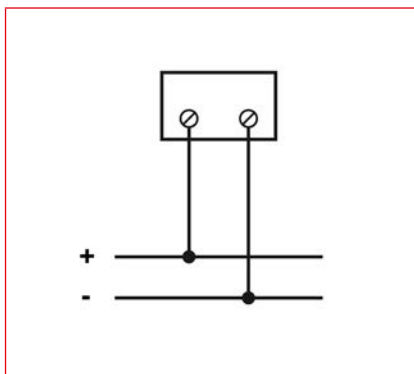
Technical Data

Size:	72 x 72
Measuring range:	15 V, 30 V, 60 V, 300 V
Standards:	EN 60051, IEC 51, VDE 0410
Display:	Analog
Accuracy:	1,5%
Burden:	3 VA
Power supply:	-
Working position:	Instruments to use with the dial vertical
Test voltage:	2kV
Overloads:	1.2 Vn continuous, 2 Vn 5 s
Vibration resistance:	VDE 0410, chapter 27: 2.5 g, ±0.25 mm, 50 Hz
Shock resistance:	VDE 0410, chapter 28: 15 g
Operating temperature:	-25°C up to +40°C
Reference temperature:	+10°C up to +30°C (for accuracy class)
Protection:	IP52, casings
	IP00, terminals





Dimensions



Wiring Diagram



Analogue-Voltmeter DC

DESCRIPTION	AVAILABLE	ORDER NO.
Analogue-Voltmeter DC, 72 x 72		
15V-DC, 72x72		MGF27015-A
30V-DC, 72x72		MGF27030-A
60V-DC, 72x72		MGF27060-A
300V-DC, 72x72		MGF27300-A
Analogue-Voltmeter DC for DIN-Rails		
100V-DC		MG054100
100(120)V-DC / 500(600)V-DC		MG004600-A



Modular Measurements - Volt/Ammeter



MGU076K8

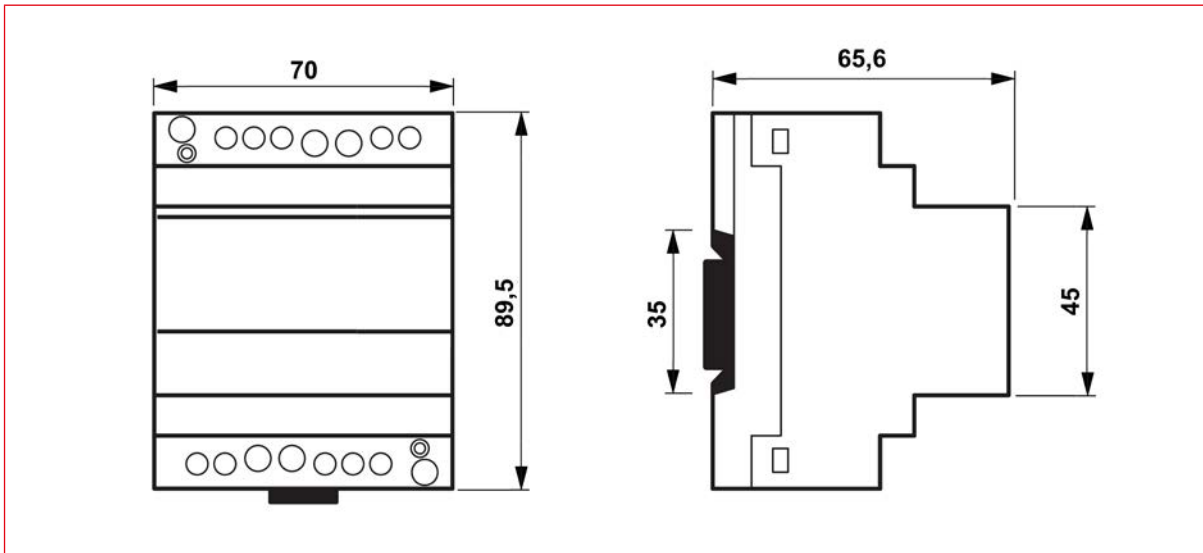
Schrack-Info

- Can be used as voltmeter or ammeter
- Current measuring ranges settable from 5-8000 A by key (CT connection)
- Voltage range 0-500 V with overload indicator up to 600 V
- Auxiliary voltage 230 V, 50 Hz

Technical Data

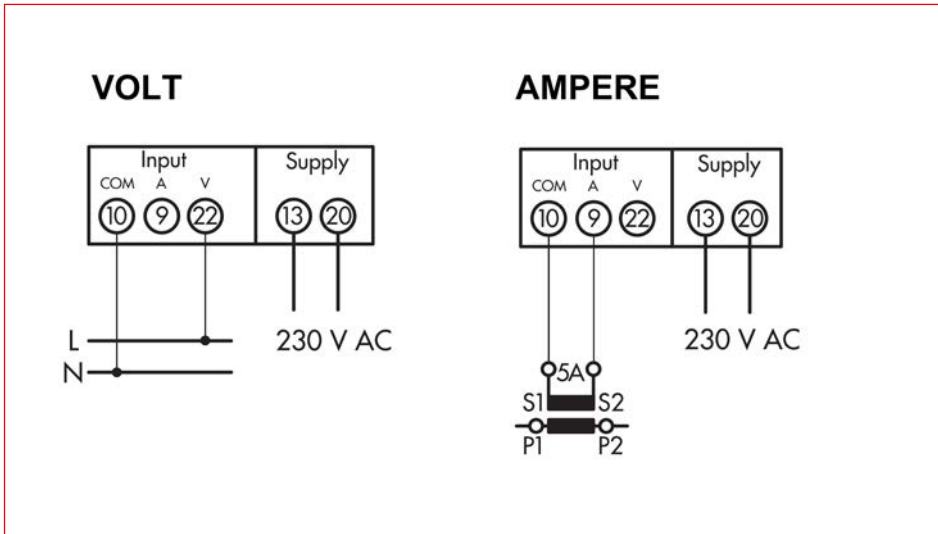
Size:	45mm - Din
Measuring range:	Can be used as voltmeter or ammeter
	Voltage range 0-500 V
	Current measuring ranges settable from 5-8000 A (CT connection)
Standards:	EN 60051
Measurement type:	TRMS
Display:	3-digit display
	Display digits: green, 14 mm high
	Overload indicator
Frequency:	Nominal frequency 50 Hz, working frequency h 47-420 Hz
Accuracy:	1% + 1 Digit
Burden:	1 VA
Power supply:	230 V-AC
Working position:	Instruments to use with the dial vertical
Test voltage:	2 kV, 50 Hz
Overloads:	Continuous overload: 1,2 x Un, 1,2 x In
	Short overload: 2 x Un / 5 s, 10 x In / 10 s
Operating temperature:	-40° C up to +70° C
Reference temperature:	5° C up to +40° C
Protection:	IP30, casings
	IP20, terminals

Dimensions



Modular Measurements - Volt/Ammeter

Wiring Diagrams



DESCRIPTION	AVAILABLE	ORDER NO.
Ammeter for current transformer 5-8000A/5A and Voltmeter 0-500V-AC		MGU076K8
5-8000A for shunt 60/100/150mV		MG10D999-A

Analogue-Frequency Meter



MGF89050-A

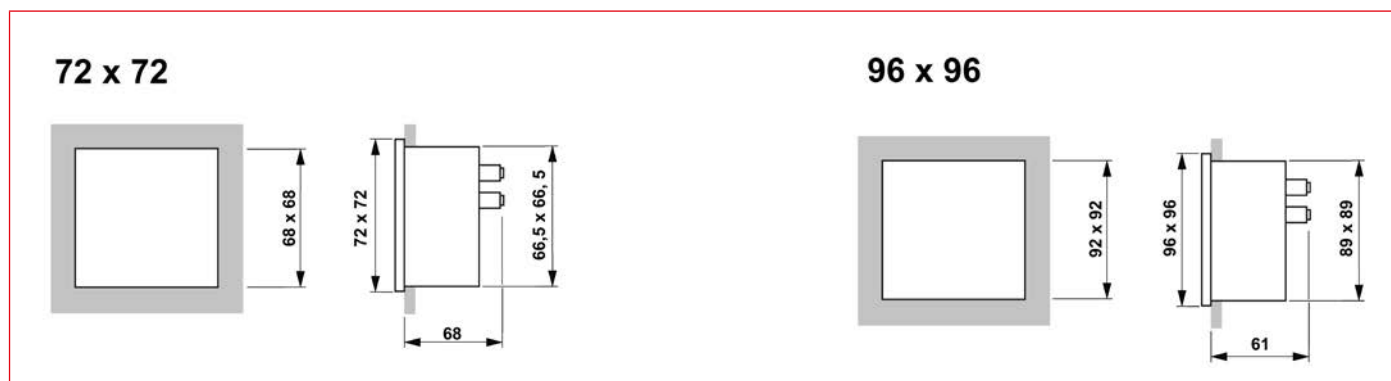
Schrack-Info

- Direct-reading instrument for measuring of frequency

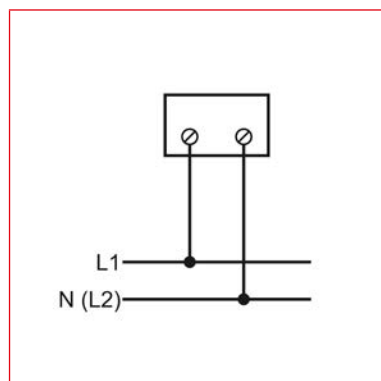
Technical Data

Size:	72 x 72	96 x 96
Measuring range:	45 up to 55Hz	45 up to 55Hz
Standards:	EN 60051, VDE 0410, BS-89, EN 50081, EN 50082, EN 61010	
Display:	Analog	
Voltage:	max. 500 V	
Accuracy:	0,5%	
Burden:	5 VA	
Working position:	Instruments to use with the dial vertical	
Test voltage:	2kV, 50 Hz, 1 min.	
Operating temperature:	-25°C up to +40°C	
Reference temperature:	+10°C up to +30°C (for accuracy class)	
Protection:	IP52, casings	
	IP00, terminals	



Dimensions



Wiring Diagram



Analogue-Frequency Meter

DESCRIPTION	AVAILABLE	ORDER NO.
Analogue-Frequency Meter, 72 x 72		
45-65Hz, 72x72		MGF87050-A
Analogue-Frequency Meter, 96 x 96		
45-65Hz, 96x96		MGF89050-A
Frequency Meter for DIN-rails		
45-55Hz, 400V-AC		MG359055

Accessories for Measurements








MG900012-A



MGZD7000-A

Schrack-Info

- Accessories for measuring instruments

DESCRIPTION	AVAILABLE	ORDER NO.
Terminal cover		
48x48		MG900010-A
72x72		MG900011-A
96x96		MG900012-A
Front Protection IP65		
Front protection IP65- for 72x72		MGZD7000-A
Front protection IP65- for 96x96		MGZD9000-A



Digital-kWh-Meter with MID, Series MIZ



MGMIZ132

Schrack-Info

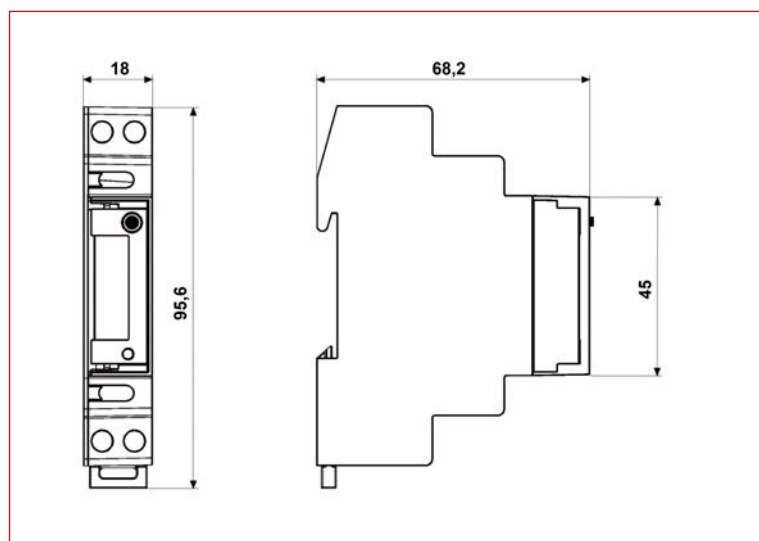
- LCD-display with 6 digits
- Measuring of instantaneous values
- Scrolling display
- With impulse output S0
- For billing purposes, because certificated according EC type-examination acc. To directive 2014/32/EU, formerly 2004/22/EC (MID)
- Option: display lighting and M-bus-interface (MGMIZ632)

Technical Data

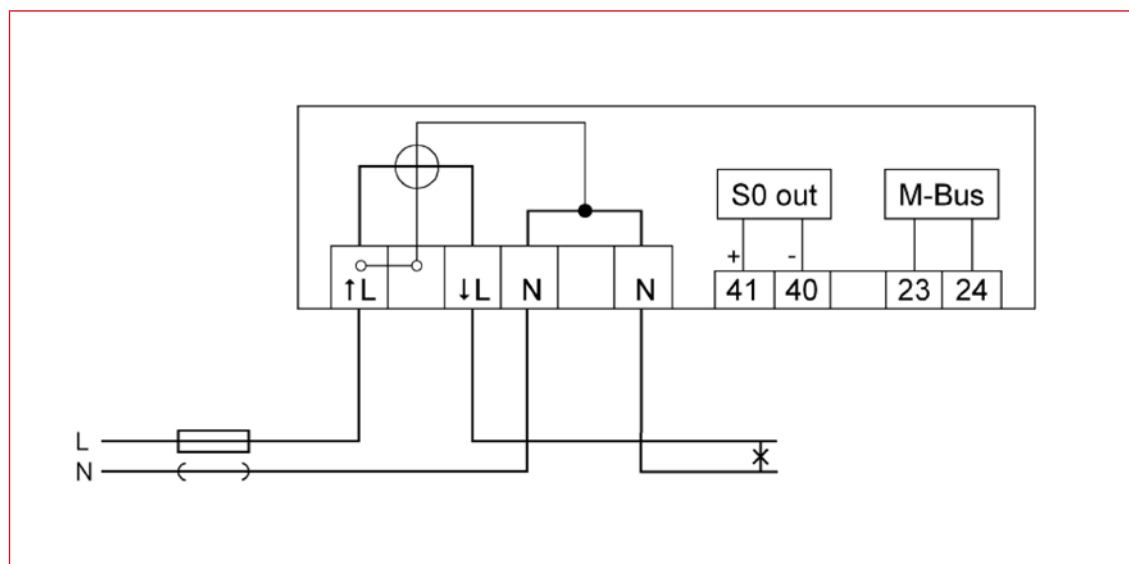
Voltage	2 wire meter 1x230V
Current	0,25-5(32) A
Starting current	20 mA
Frequency	50 Hz
Accuracy (active energy)	Cl. B according to EN 50470-1, -3
Measuring types	+A
Meter constant	LED: 5 000 Imp./kWh Output: 1 000 Imp./kWh
Energy register	1 tariff register
Data retention time	without voltage in the FLASH/EEPROM, at least 20 years
Display	version: LCD number of digits: 6 dinginess: 5, 1 digit size in the value range: appr. 2,7 x 6,25 (w x h) mm display of instantons values: scrolling
Operation of button (MGMIZ632)	for operation of display
Data interfaces	1 So-output: maximum 27 V DC, 27mA (passive) pulse length: 50ms voltage path: < 0,4 W
Energy supply	
EMC-characteristics	isolation resistance: Isolation: 4 kV AC, 50 Hz, 1 min surge voltage: EMC: 4 kV, impulse 1,2/50 ms, 2Ω ISO: 6 kV, impulse 1,2/50 ms, 500Ω resistance against HF-fields: 10 V/m (under load)
Temperature range	operating: -25°C...+55°C limit: -40°C...+70°C storage: -40°C...+70°C
Relative humidity	95%, non-condensing accord. To IEC 62052-11, EN 50470-1 and IEC 60068-2-30
Housing	dimensions: DIN 43880 (1 SU pitch wide = 18 mm) class of protection: 2 degree of protection: housing, terminals: IP20 material: polycarbonate glass-fibre-reinforced fire characteristics: accord. To IEC 62052-11 weight: appr. 67,5g
Connection-cross section	current- / neutral conductor: maximum 6mm ² auxiliary terminals: maximum 2,5mm ²
Features (MGMIZ132)	impulse output instantaneous values
Features (MGMIZ632)	impulse output instantaneous values M-Bus-interface operation button display lightning

Digital-kWh-Meter with MID, Series MIZ

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
S0-Connection		
32A direct with MID		MGMIZ132
M-Bus-Connection		
32A direct with MID and M-Bus-connection		MGMIZ632

Modular Operating Hour Meter for Flush Mounting 48x48 mm



BZ326413-A

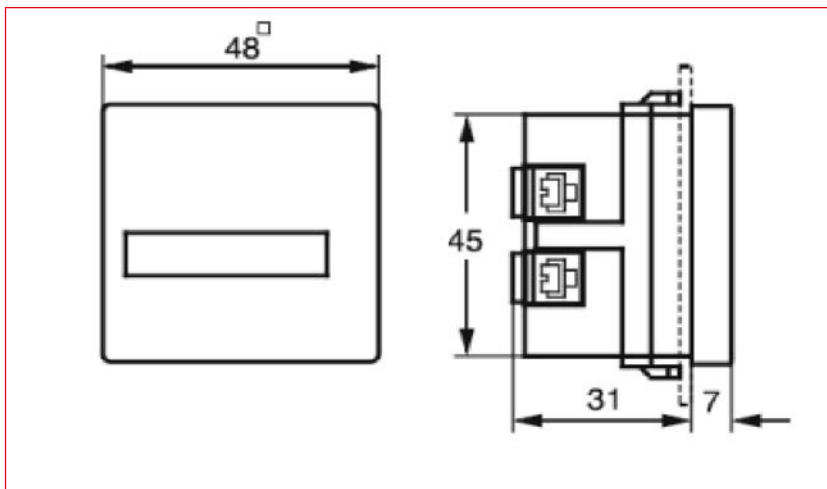
Schrack-Info

- With screw terminals for installation
- Durable, maintenance-free technology
- Robust and reliable
- Applications: Operating hour control in machines and pumps

Technical Data

Rated voltage	230 V, 50 Hz
Frequency	50 Hz, 60 Hz
Tolerance of voltage	±15%
Power consumption	0,15 W
Counting capacity	99.999 hour
Accuracy	0,01 hour
Digit-size	4,4 mm
Digit color	white, decimal red
Tap-change in progress indicator (without zero position)	tip speed
Ambient temperature	-15°...+55°C
Cover	self-extinguishing thermoplastic
Panel-mounting	cover according DIN EN 43700
Connection	Universal Connection: threaded, soldering and AMP connector 6.3 x 0.8 mm
Protection class	Front IP 50 according DIN EN 60529 (with adapter frame BZ326416-A: IP 54)
Insulation class	II

Dimensions



DESCRIPTION	AVAILABLE	ORDER NO.
230V AC, IP20		BZ326413-A
230V AC, IP54		BZ326414-A
Adapter frame 55x55 for BZ326413-A & BZ326414-A		BZ326416-A

Modular Hour Meter for DIN-Rail Mounting



BZ326418-A

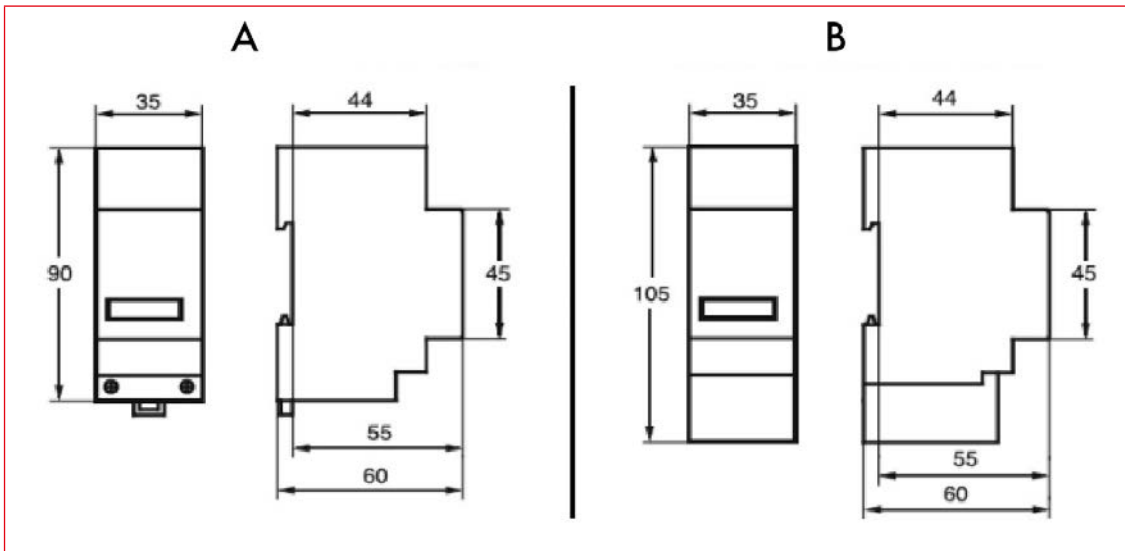
Schrack-Info

- With screw terminals for DIN-rail mounting
- Durable, maintenance-free technology
- Space-saving - only 2 MW wide
- Applications: Operating hour control in machines and pumps

Technical Data

Rated voltage	230 V, 50 - 60 Hz
Tolerance of voltage	±15%
Power consumption	0,26 W
Counting capacity	99.999 hour
Accuracy	0,01 hour
Digit-size	4,4 mm
Digit colour	white, decimal red
Tap-change in progress indicator (without zero position)	LED flashing
Ambient temperature	-15°...+55°C
Cover	self-extinguishing thermoplastic
Connection	screw-terminals
Protection class	IP 50 according EN 60529
Insulation class	II

Dimensions



Key

A	without terminal-cover
B	with terminal-cover

DESCRIPTION	AVAILABLE	ORDER NO.
230V AC		BZ326418-A
24V AC		BZ326423-A

Modular Current Transformers



MG900220

Schrack-Info

- Suitable for other REG devices
- Easy to feedthrough
- For coarse display of measured value
- Space-saving - only 2 MW wide

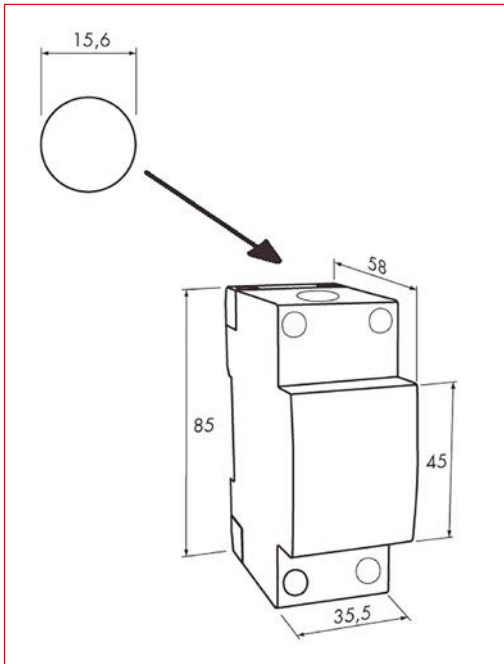
Technical Data

Primary current:	40 A, 50 A, 60 A, 80A, 100A, 150A
Secondary current:	5A
Nominal voltage:	400V
Frequency:	50Hz
Mounting:	DIN-rail

Rated Burden

Primary current	Class 1	Class 3
40 A	-	2 VA
50 A	-	2 VA
60 A	-	3 VA
80 A	-	3 VA
100 A	3 VA	-
120 A	5 VA	-
150 A	5 VA	-

Dimensions

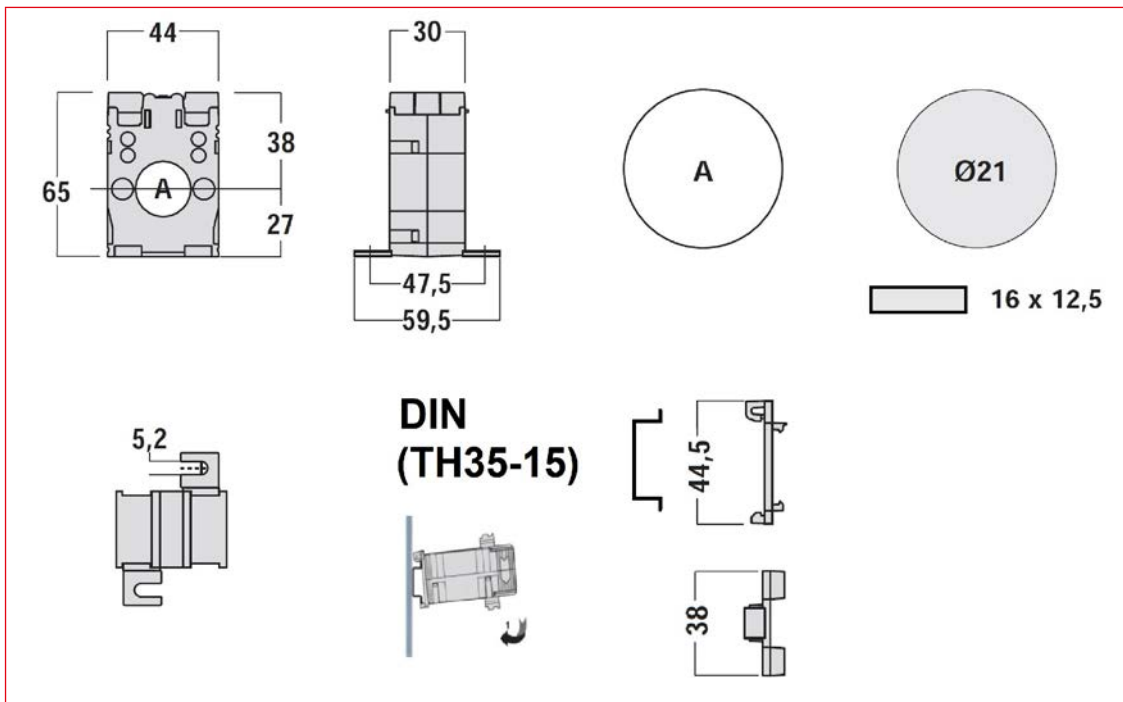


DESCRIPTION	AVAILABLE	ORDER NO.
40/5A		MG900220
50/5A		MG900221
60/5A		MG900222
80/5A		MG900224
100/5A		MG900225
150/5A		MG900227

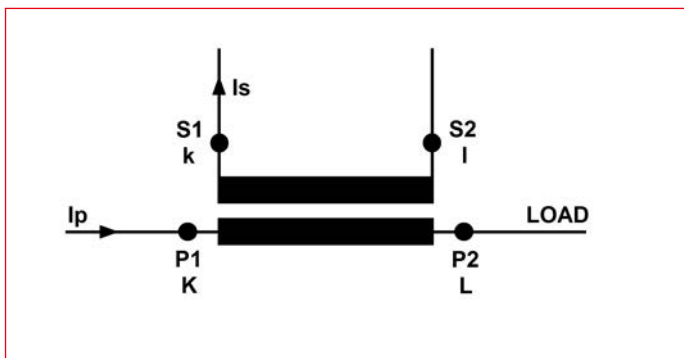
Current Transformers

Current-Transformers, for Cable 21 mm Ø

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
40/5A		MG952004-A
50/5A		MG952005-A
60/5A		MG952006-A
80/5A		MG952008-A
100/5A		MG952010-A
150/5A		MG952015-A
200/5A		MG952020-A
250/5A		MG952025-A

Current-Transformers, for busbar 30x10mm



MG954030-A

Schrack-Info

- Current transformers for low-voltage network
- Single-phase current transformer
- Passing cable up to 27mm diameter or busbar up to 30 x 10 mm, primary
- Primary current 50...600A
- Secondary current 5A

Technical Data

Reference Standards	EN 60044-1
Specifications	
Rated primary current I _{pr} :	50A, 60A, 100A, 150A, 200A, 250A, 300A, 400A, 500A, 600A
Rated frequency:	50Hz
Working frequency:	47 - 63Hz
Rated continuous thermal current according to EN60044-1 (I _{cth})	
Rated short-time thermal current I _{th} :	< 60I _{pr}
Rated dynamic current I _{dyn} :	2,5I _{th}
Instrument security factor (FS):	≤ 5
Rated secondary current I _{sr} :	5A
Rated burden:	1,5...20VA (according table)
Accuracy class:	0,5 - 1 - 3 (according table)
Max. power dissipation:	
for switchboard thermal calculation:	≤ 7W at I _{cth}
The allowed max cable or busbar temp is:	125°C

Isolation Requirements

Dry transformer, air insulation	
Highest voltage for equipment U _m :	0,72kV r.m.s.
Rated insulation level:	3kV r.m.s. 50Hz/1 min
Class of insulation (EN60044-1):	B

Environmental Conditions

Non-exposed installation (EN60044-1)	
Reference temperature:	23°C ± 1°C
Nominal temperature range:	- 25...50°C
Daily mean temperature:	≤ 30°C
Limit temperature range for storage:	- 40...85°C
Relative humidity:	≤ 85% (Suitable for tropical climates)

Limits of Currents Error and Phase Displacement (EN60044-1)

Accuracy class	± Percentage current (ratio) error at percentage of rated current shown below			
	5%I _n	20%I _n	100%I _n	120%I _n
0,5	1,5	0,75	0,5	0,5
1	3	1,5	1	1
3				3

Housing

Housing material:	self-extinguishing polycarbonate, classification VO according to UL-94
Protection degree (EN60529):	IP20
Fixing:	screw facility for wall mounting Option: fixing 35 mm rail mounting (EN50022)
DIN-rail-type:	TH35-15 (EN60715)
Weight:	260 gr.

Connections

Primary winding:	continuous wire
Secondary winding:	screw terminals
	max. 2 separated wires 2,5 mm ²

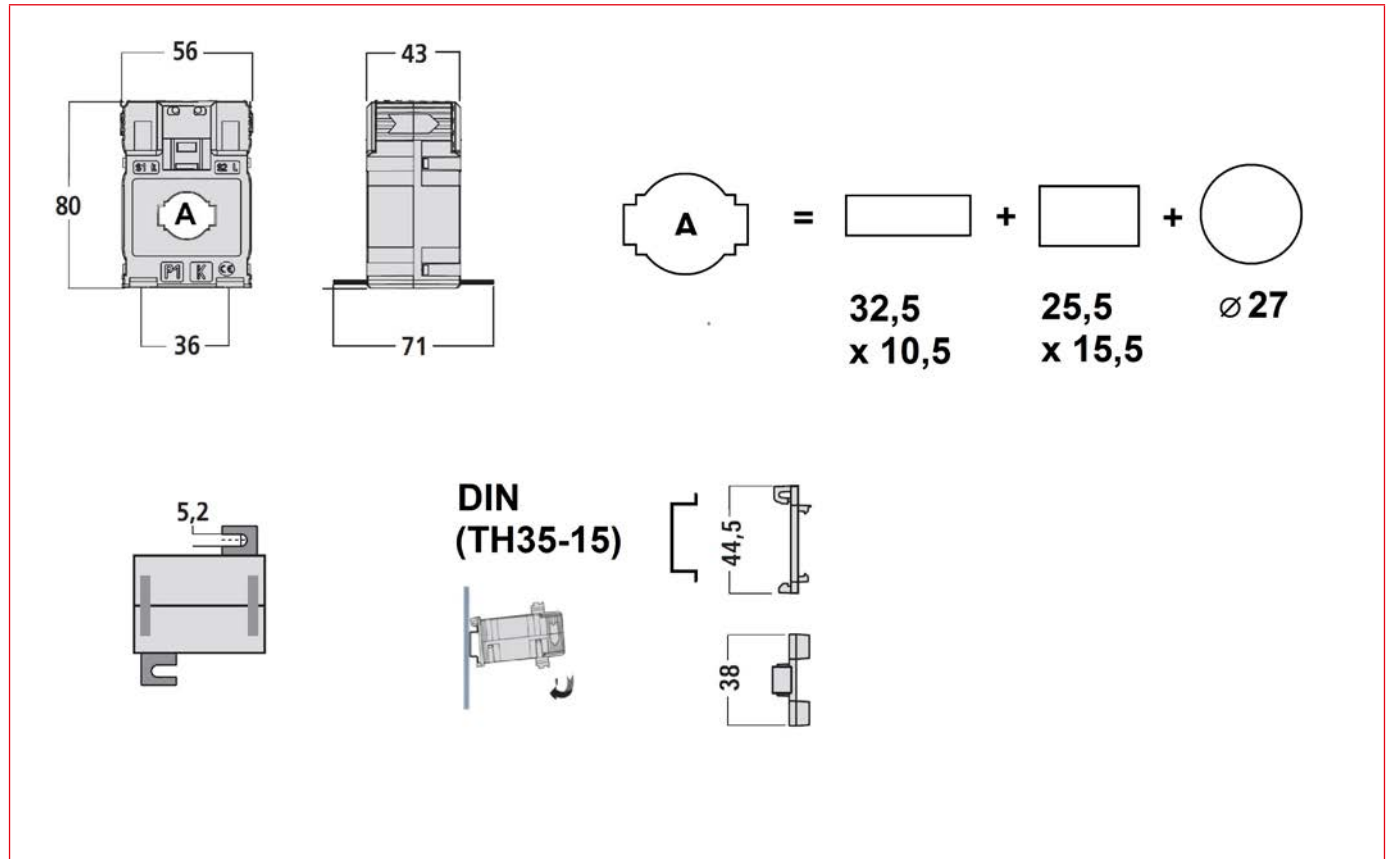
Current Transformers

Current-Transformers, for busbar 30x10mm

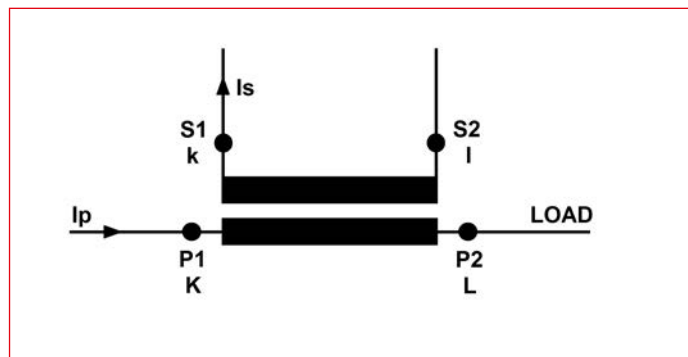
Rated Burden


Type:	Class 0,5	Class 1	Class 3
50/5A	-	-	1,5 VA
60/5A	-	-	2,5 VA
100/5A	1,5 VA	3 VA	-
150/5A	3 VA	5 VA	-
200/5A	4 VA	7 VA	-
250/5A	6 VA	8 VA	-
300/5A	8 VA	10 VA	-
400/5A	10 VA	12 VA	-
500/5A	12 VA	15 VA	-
600/5A	15 VA	20 VA	-











Dimensions



Wiring Diagram



 Current-Transformers, for busbar 30x10mm

DESCRIPTION	AVAILABLE	ORDER NO.
50/5A		MG954005-A
60/5A		MG954006-A
100/5A		MG954010-A
150/5A		MG954015-A
200/5A		MG954020-A
250/5A		MG954025-A
300/5A		MG954030-A
400/5A		MG954040-A
500/5A		MG954050-A
600/5A		MG954060-A



Current-Transformers, for busbar 40x10mm



MG955080-A

Schrack-Info

- Current transformers for low-voltage network
- Single-phase current transformer
- Passing cable up to 26 mm diameter or busbar 30 x 15 or 40 x 10 mm, primary
- Primary current 50...600A
- Secondary current 5A

Technical Data

Reference Standards	EN60044-1
Specifications	
Rated primary current I_{pr}	250A, 400A, 500A, 600A, 800A
Rated frequency:	50Hz
Working frequency:	47 - 63Hz
Rated continuous thermal current according to EN60044-1 (I_{cth})	
Rated short-time thermal current I_{th}	$< 60I_{pr}$
Rated dynamic current I_{dyn}	$2,5I_{th}$
Instrument security factor (FS):	≤ 5
Rated secondary current I_s	5A
Rated burden:	1,5...12VA (see table)
Accuracy class:	0,5 - 1 (see table)
Max. power dissipation for switchboard thermal calculation:	$\leq 11,5W$ at I_{cth}
The allowed max cable or busbar temp is:	125°C
Isolation Requirements	
Dry transformer, air insulation	
Highest voltage for equipment U_m :	0,72kV r.m.s.
Rated insulation level:	3kV r.m.s. 50Hz/1 min
Class of insulation (EN60044-1):	B
Environmental Conditions	
Non-exposed installation (EN60044-1)	
Reference temperature:	23°C \pm 1°C
Nominal temperature range:	- 25...50°C
Daily mean temperature:	$\leq 30^\circ C$
Limit temperature range for storage:	- 40...85°C
Relative humidity:	$\leq 85\%$ (Suitable for tropical climates)

Limits of Currents Error

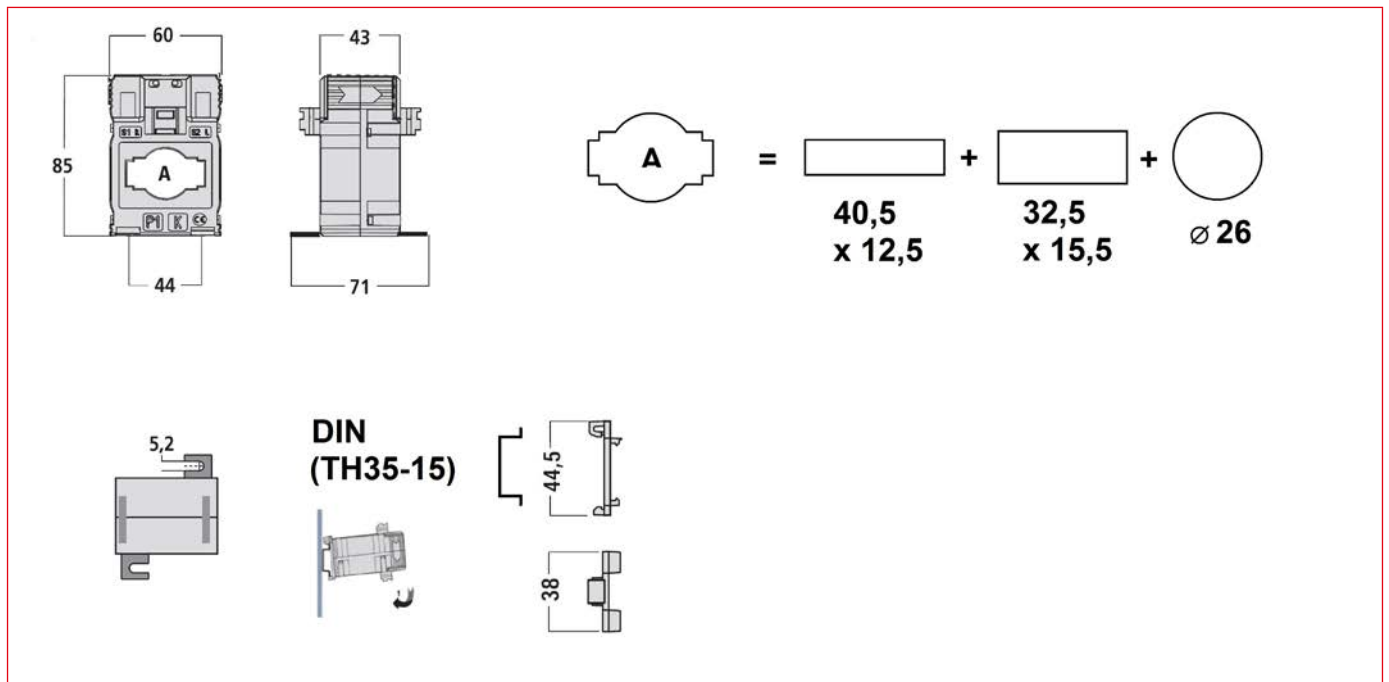
Accuracy-class	\pm Percentage current (ratio) error at percentage of rated current shown below			
	5% I_n	20% I_n	100% I_n	120% I_n
0,5	1,5	0,75	0,5	0,5
1	3	1,5	1	1

Rated Burden

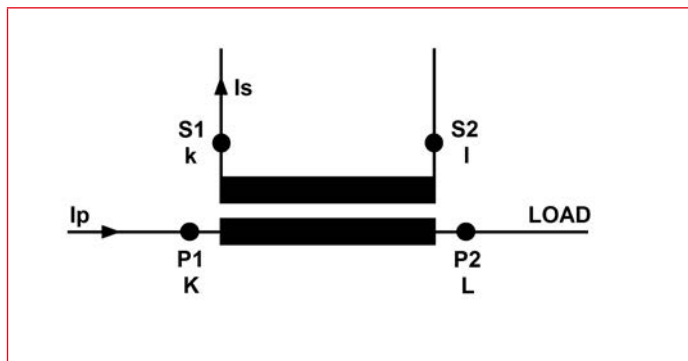
Type:	Class 0.5	Class 1
250/5A	3VA	4VA
300/5A	4VA	6VA
400/5A	6VA	8VA
500/5A	6VA	8VA
600/5A	6VA	8VA
800/5A	10VA	12VA

Current-Transformers, for busbar 40x10mm

Dimensions



Wiring Diagram



Technical Data

Housing	
Housing material:	self-extinguishing polycarbonate
Protection degree (EN60529):	IP20
Fixing:	screw facility for wall mounting, Option: fixing 35 mm rail mounting (EN50022)
DIN-rail-type:	TH35-15 (EN60715)
Weight:	300 gr.

Connections	
Primary winding:	continuous wire
Torque for busbar mounting	0,2 Nm
Secondary winding:	Screw-terminals 6 mm ² , Faston 4,8 x 0,8
Terminal description:	Primary winding P1 (K) – P2(L) Secondary winding s1(k) – s2(l)

DESCRIPTION	AVAILABLE	ORDER NO.
250/5A		MG955025-A
400/5A		MG955040-A
500/5A		MG955050-A
600/5A		MG955060-A
800/5A		MG955080-A

Current Transformers

Current-Transformers, for busbar 50x10mm



MG956040-A

Schrack-Info

- Passing busbar primary
- Single-phase current transformer
- For busbars up to 50 x 20 or 60 x 10 mm
- Primary current 400...600A
- Secondary current 5A

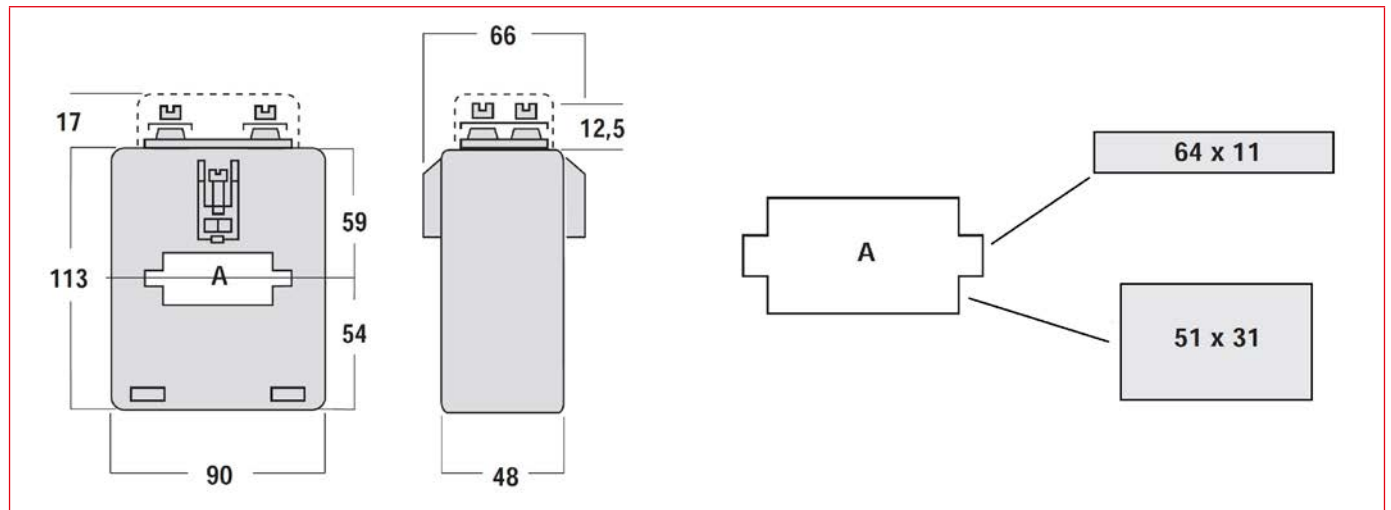
Technical Data

Reference Standards	EN60044-1
Specifications	
Rated primary current I_{pr} :	400A, 600A
Rated frequency:	50Hz
Rated secondary primary current I_{pr} :	5A
Housing	
Housing material:	self-extinguishing polycarbonate, classification V0 according to UL-94
Protection degree (EN60529):	IP00 terminals IP20 with terminal cover
Fixing:	screw facility for wall mounting
Weight:	500 gr.
Connections	
Secondary winding:	screw terminal M4 and Faston 6,3x0,8 mm

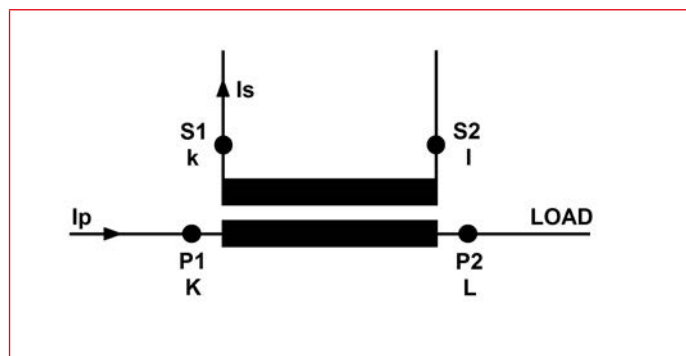
Rated Burden

Type:	Class 0,5	Class 1	Class 3
400/5A		4VA	6VA
600/5A	4VA	6VA	8VA

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
400/5A		MG956040-A
600/5A		MG956060-A

Current-Transformers, for busbar 65 x 32mm



MG957150-A

Schrack-Info

- Passing busbar primary
- Single-phase current transformer
- For busbars up to 65 x 32 mm
- Primary current 800...2000A
- Secondary current 5A

Technical Data

Reference Standards	EN60044-1, BS3938, BS7626
Specifications	
Rated primary current I_{pr} :	800A, 1000A, 1500A, 2000VA
Rated frequency:	50Hz
Rated secondary primary current I_{pr} :	5A
Housing	
Housing material:	self-extinguishing polycarbonate, classification V0 according to UL-94
Protection degree (EN60529):	IP00 terminals IP20 with terminal cover
Fixing:	screw facility for wall mounting
Weight:	750 gr.
Connections	
Secondary winding:	screw terminal M4

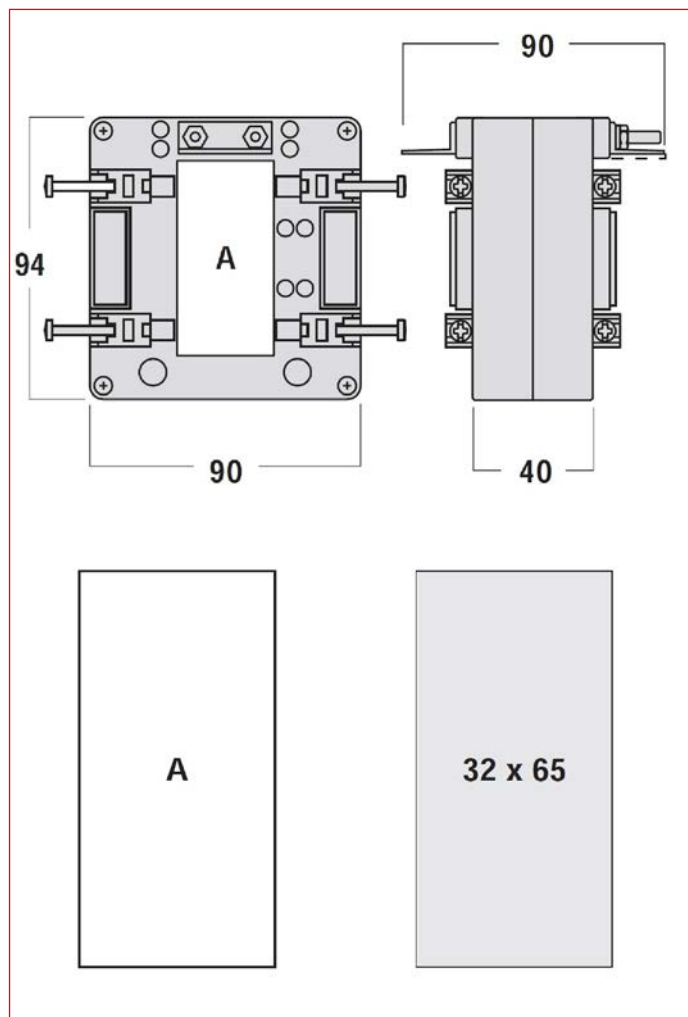
Rated Burden

Type:	Class 0,5	Class 1	Class 3
800/5A	12VA	15VA	20VA
1000/5A	15VA	20VA	25VA
1500/5A	20VA	25VA	30VA
2000/5A	20VA	25VA	30VA

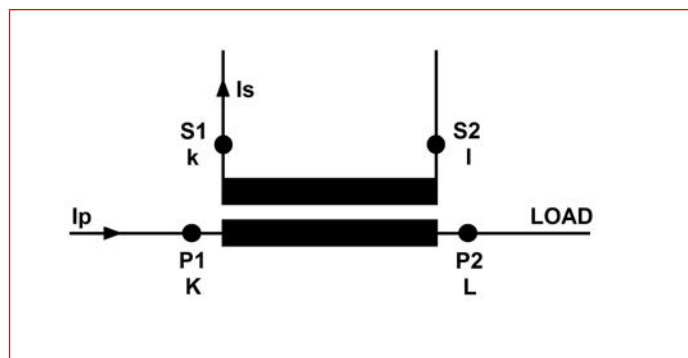
Current Transformers

Current-Transformers, for busbar 65 x 32mm

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
800/5A		MG957080-A
1000/5A		MG957100-A
1500/5A		MG957150-A
2000/5A		MG957200-A

Current-Transformers, for busbar 80x30mm



MG958100-A

Schrack-Info

- Passing busbar primary
- Single-phase current transformer
- For busbars up to 80 x 30 mm
- Primary current 1000...2500A
- Secondary current 5A

Technical Data

Reference Standards	EN60044-1, BS3938, BS7626
Specifications	
Rated primary current I_{pr} :	1000A, 1500A, 2000VA, 2500VA
Rated frequency:	50Hz
Rated secondary primary current I_{pr} :	5A
Housing	
Housing material:	self-extinguishing polycarbonate
Protection degree (EN60529):	classification V0 according to UL-94 IP00 terminals IP20 with terminal cover with shroud
Mounting:	Fixing screw facilities for bar
Weight:	700 grams
Connections	
Secondary winding:	tightening by nut M4

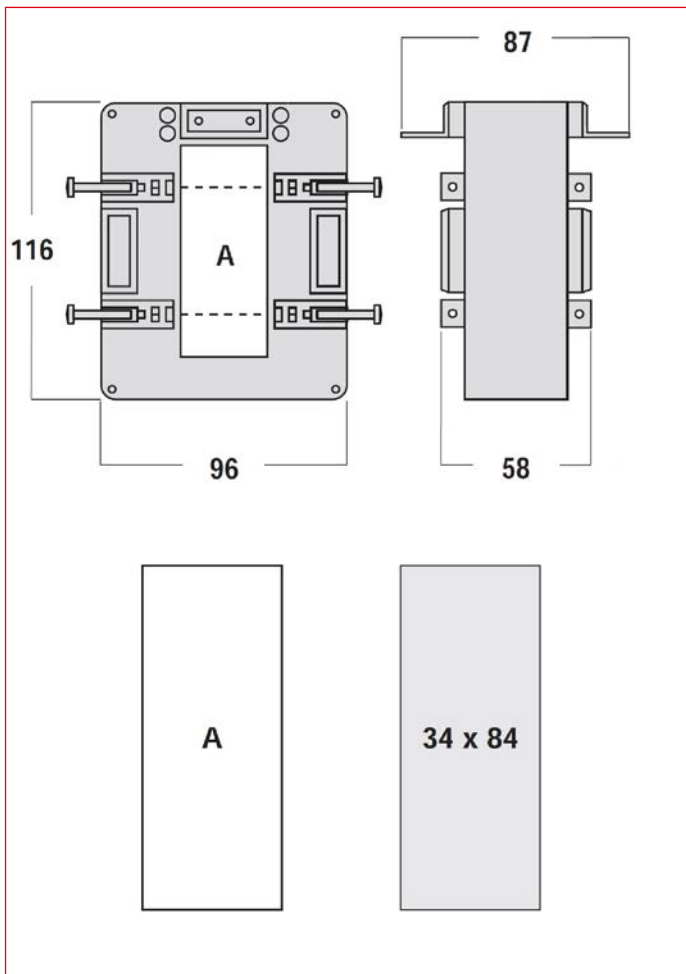
Rated Burden

Type:	Class 0,5	Class 1	Class 3
1000/5A	10VA	15VA	20VA
1500/5A	15VA	20VA	25VA
2000/5A	20VA	25VA	30VA
2500/5A	25VA	30VA	40VA

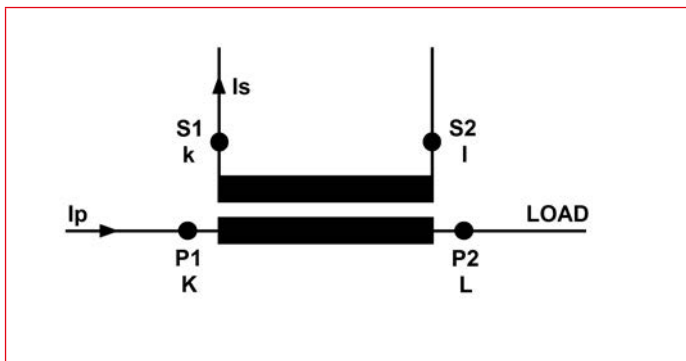
Current Transformers

Current-Transformers, for busbar 80x30mm

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
1000/5A		MG958100-A
1500/5A		MG958150-A
2000/5A		MG958200-A
2500/5A		MG958250-A

Current-Transformers, for busbar 125x50mm



MG959200-A

Schrack-Info

- Passing busbar primary, Single-phase current transformer
- For busbars up to 125 x 50 mm
- Primary current 2000...4000A
- Secondary current 5A

Technical Data

Reference Standards	EN60044-1, BS3938, BS7626
Specifications	
Rated primary current I_{pr} :	2000VA, 2500VA, 3000VA, 4000VA
Rated frequency:	50Hz
Rated secondary primary current I_{pr} :	5A
Housing	
Housing material:	self-extinguishing polycarbonate classification V0 according to UL-94
Protection degree (EN60529):	IP00 terminals IP20 with terminal cover with shroud
Mounting:	Fixing screw facilities for bar
Weight:	1300 grams
Connections	
Secondary winding:	tightening by nut M4

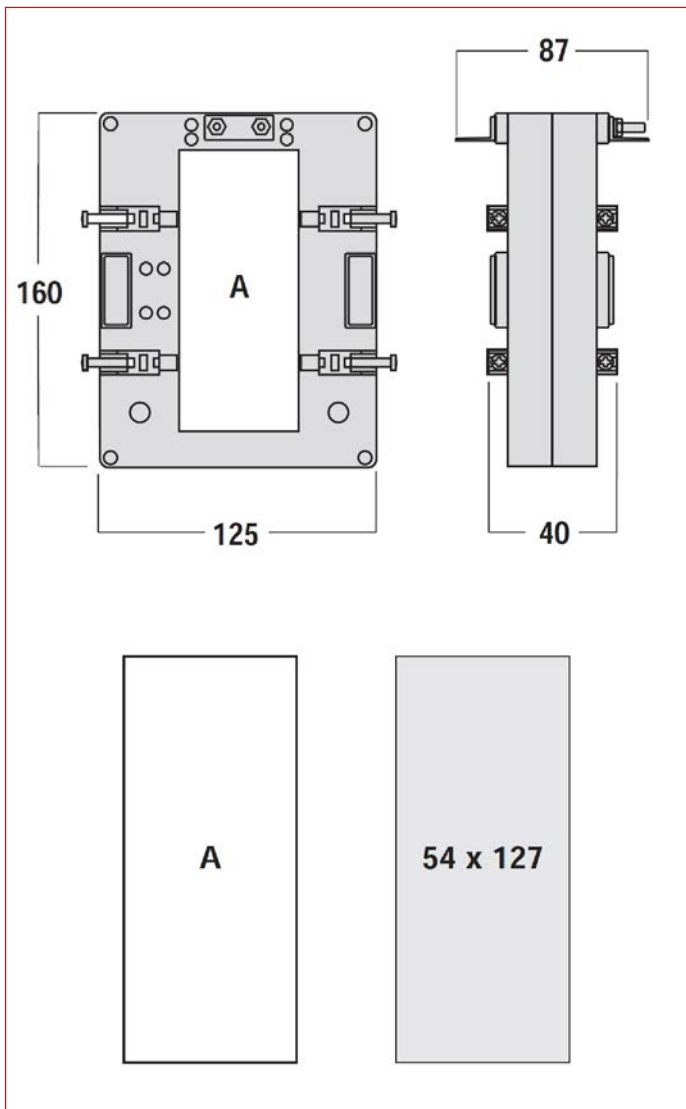
Rated Burden

Type:	Accuracy class		
	Class 0,5	Class 1	Class 3
2000/5A	25VA	40VA	50VA
2500/5A	30VA	50VA	60VA
3000/5A	30VA	50VA	60VA
4000/5A	30VA	50VA	60VA

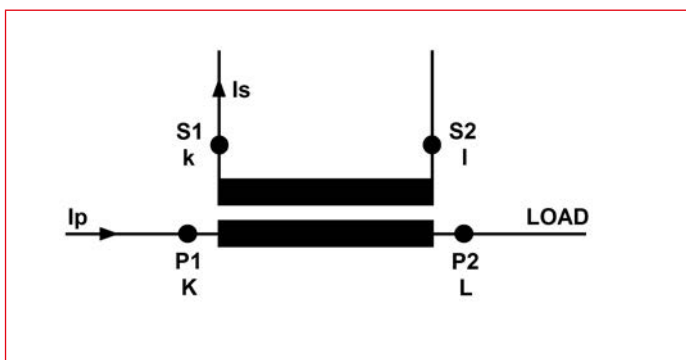
Current Transformers

Current-Transformers, for busbar 125x50mm

Dimensions



Wiring Diagram



DESCRIPTION	AVAILABLE	ORDER NO.
2000/5A		MG959200-A
2500/5A		MG959250-A
3000/5A		MG959300-A
4000/5A		MG959400-A

Current-Transformers, Split Version



MG967150

Schrack-Info

- Current transformer for easy mounting in an existing low-voltage system

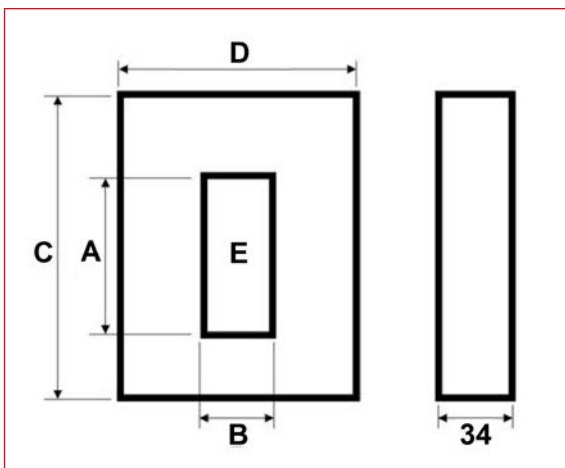
Technical Data

Primary current:	100 A, 150 A, 250 A, 400 A, 600 A
Secondary current:	5A
Nominal voltage:	0,72 kV
Frequency:	50-60 Hz
Test voltage:	3 kV for 1 minute (at 50 Hz)
Thermal class:	A
Thermal short-circuit current (I_{th}):	60 I_n
Dynamic limiting current (I_{dyn}):	2,5 I_n
Overcurrent limiting factor:	FS 5
Housing:	self-extinguishing plastic
Mounting:	Screw fastening

Rated Burden

Primary current	Class 0.5	Class 1	Class 3
100 A	-	-	3 VA
150 A	-	-	3,75 VA
250 A	-	3,75 VA	5 VA
400 A	2,5 VA	3,75 VA	7,5 VA
600 A	5 VA	7,5 VA	20VA

Dimensions



Key

Type	A	B	C	D	E	
100A	32 mm	22 mm	106 mm	90 mm	30 x 20 mm	20 mm
150A	32 mm	22 mm	106 mm	90 mm	30 x 20 mm	20 mm
250A	32 mm	22 mm	106 mm	90 mm	30 x 20 mm	20 mm
400A	62 mm	32 mm	136 mm	100 mm	60 x 30 mm	20 mm
600A	62 mm	32 mm	136 mm	100 mm	60 x 30 mm	20 mm

DESCRIPTION	AVAILABLE	ORDER NO.
100/5A		MG967100
150/5A		MG967150
250/5A		MG967250
400/5A		MG968400
600/5A		MG968600

Shunts 60mV

Shunt 135 x 30 x 23mm



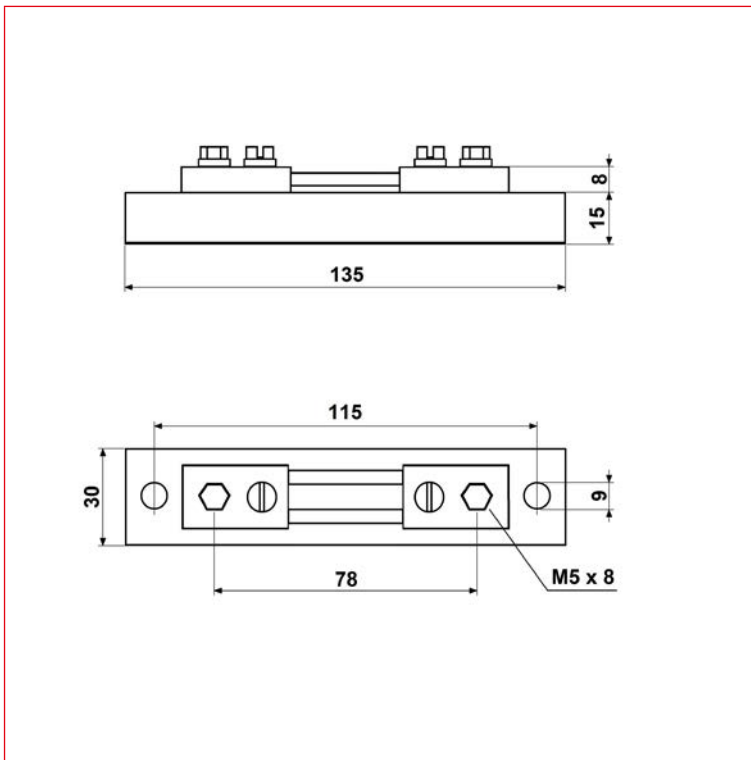
Schrack-Info

- For direct current instruments 60 mV
- Complies with the DIN-standard
- Available up to 25 A on insulated carrier part

MG900105

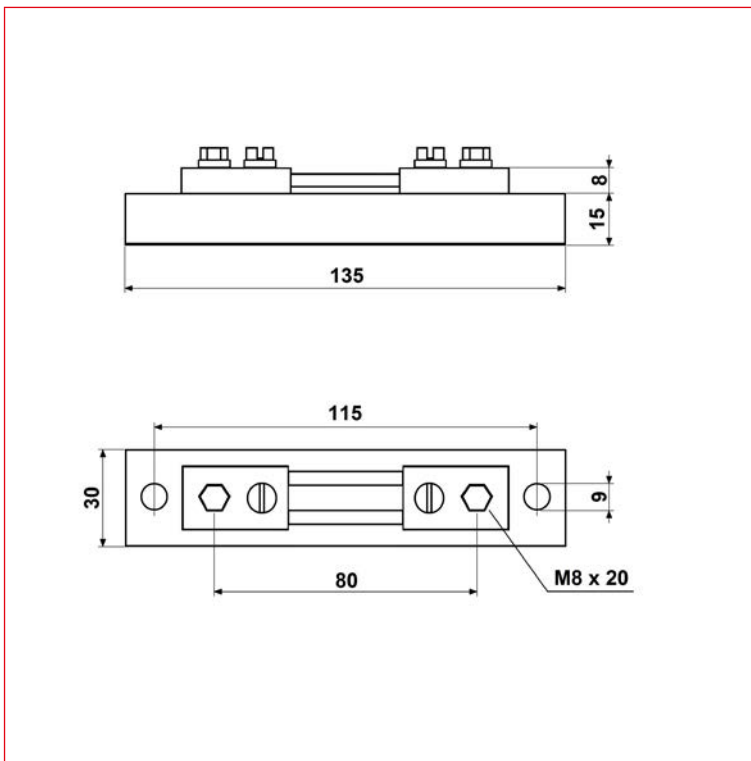
Rated current:	15 -200 A
Measuring voltage:	at $I_n = 60 \text{ mV}$
Accuracy:	Class 0.5
Overload capability:	$1,2 \times I_n$ continuous $10 \times I_n$ 5 s
Ambient temperatures:	-25 °C up to +60 °C
Relative humidity:	$\leq 95\%$



Dimensions MG900105 - MG900107



Shunt 135 x 30 x 23mm

Dimensions MG900109 - MG900114



DESCRIPTION	AVAILABLE	ORDER NO.
15A		MG900105
20A		MG900106
25A		MG900107
40A		MG900109
60A		MG900111
100A		MG900112
150A		MG900113
200A		MG900114



Shunts 60mV

Shunt 145 x 30 x 30mm



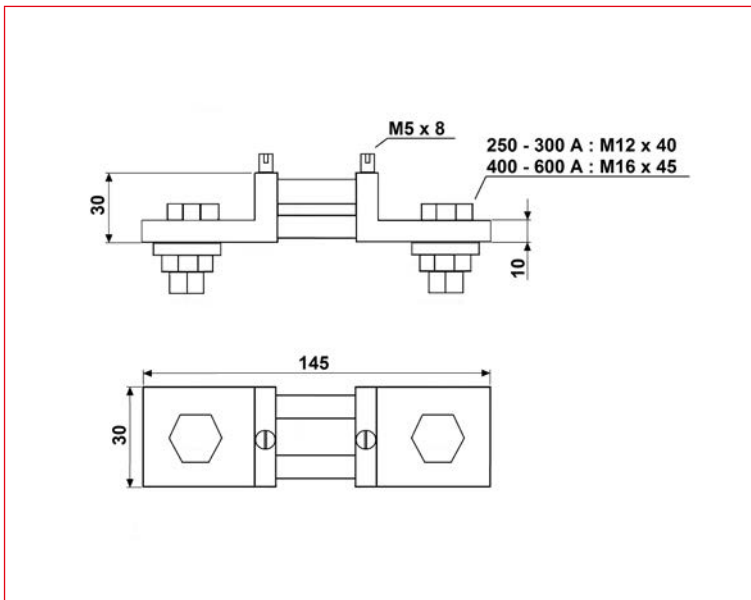
Schrack-Info

- For direct current instruments 60 mV
- Complies with the DIN-standard

MG9001xx

Rated current:	250 - 600 A
Measuring voltage:	at $I_n = 60 \text{ mV}$
Accuracy:	Class 0.5
Overload capability:	$1,2 \times I_n$ continuous
	$10 \times I_n$ 5 s
Ambient temperatures:	$-25 \text{ }^\circ\text{C}$ up to $+60 \text{ }^\circ\text{C}$
Relative humidity:	$\leq 95\%$

Dimensions MG900115 - MG900119



DESCRIPTION	AVAILABLE	ORDER NO.
250A		MG900115
300A		MG900116
400A		MG900117
500A		MG900118
600A		MG900119

Shunt 165 x 60 x 30mm



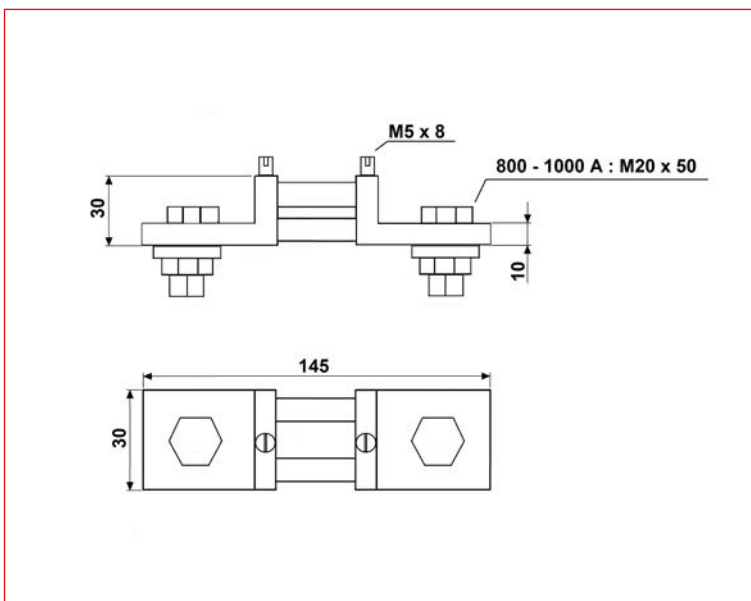
MG900120

Schrack-Info

- For direct current instruments 60 mV
- Complies with the DIN-standard

Rated current:	800 A, 1000 A
Measuring voltage:	at $I_n = 60 \text{ mV}$
Accuracy:	Class 0.5
Overload capability:	$1,2 \times I_n$ continuous
	$10 \times I_n$ 5 s
Ambient temperatures:	-25 °C up to +60 °C
Relative humidity:	≤ 95%

Dimensions MG900120 - MG900121



DESCRIPTION	AVAILABLE	ORDER NO.
800A		MG900120
1000A		MG900121



Transformers - Series T



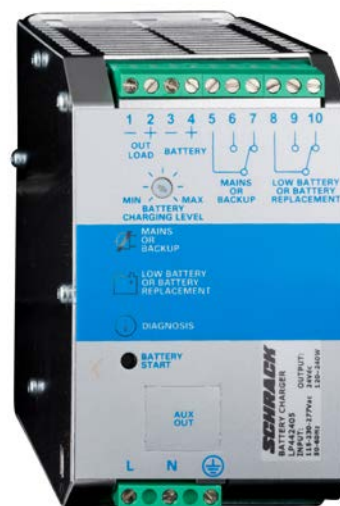
Transformers - Series T



Power Supply - Series LP4



Power Supply - Series LP4



Power Supply - Series LP4



Power Supply DIN-Rail



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Transformers & Power Supplies

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Transformers - Series T



LP601003T



LP603003T

Schrack-Info

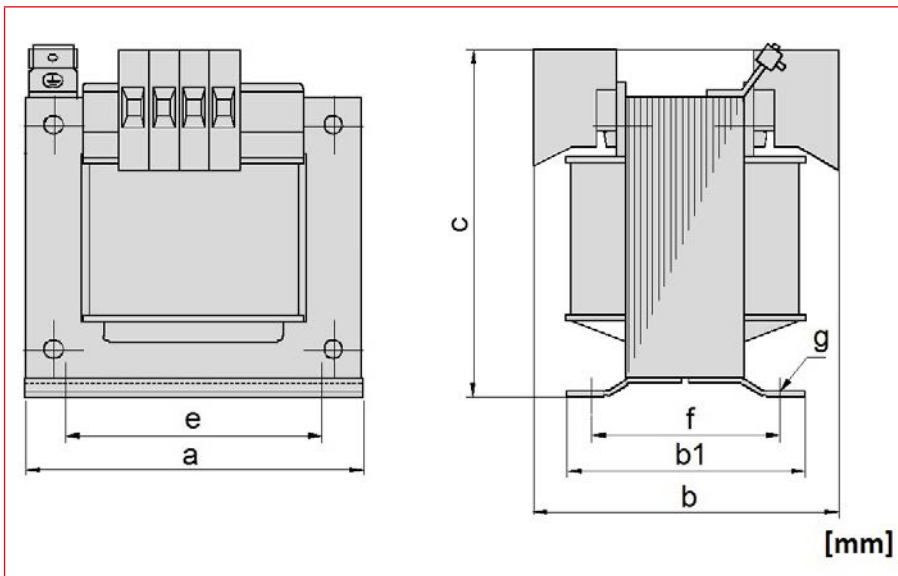
Compact quality transformers with

- Primary voltages 230 and 400VAC
- Secondary voltages from 12 - 230VAC
- Optional models including secondary fuse
- Safety transformer function

Compact control isolating transformers

- Primary voltage 200 - 500VAC
- Secondary voltage 230VAC
- Safety transformer function

LP60x Dimensions



Type	Rated output [W]	Short time rating [W]	12V			24V		230V		e [mm]	f [mm]	g [mm]	b1 [mm]	Total weight [kg]
			a [mm]	b [mm]	c [mm]	b [mm]	c [mm]	b [mm]	c [mm]					
LP60X003T	30	65	85	77	91	77	91	77	91	64	47	4,8x8	60	1,5
LP60X006T	60	130	85	77	91	77	91	77	91	64	47	4,8x8	60	1,5
LP60X010T	100	240	85	91	91	91	91	91	91	64	61	4,8x8	74	2
LP60X016T	160	360	85	100	91	100	91	100	91	64	70	4,8x8	83	2,3
LP60X020T	200	440	106	85	112	85	112	85	112	80	61	5,8x9	80	3
LP60X025T	250	600	106	94	112	94	112	94	112	80	70	5,8x9	89	3,8
LP60X032T	320	750	121	-	-	89	119	89	119	90	68	5,8x12	86	4,3
LP60X040T	400	1100	121	-	-	101	119	101	119	90	80	5,8x12	98	5,2
LP60X050T	500	1600	121	-	-	121	119	121	119	90	100	5,8x12	118	6,8
LP60X063T	630	1700	151	-	-	108	145	108	145	122	82	7x15	104	7,7
LP60X080T	800	2000	151	-	-	138	157	125	145	122	99	7x15	121	9,6
LP60X100T	1000	2800	151	-	-	164	157	151	145	122	125	7x15	147	13,4
LP60X130T	1300	3700	175	-	-	150	169	141	157	135	110	7x15	135	14,9
LP60X160T	1600	5500	195	-	-	142	240	142	174	150	110	10x18	140	17,4
LP60X200T	2000	7000	195	-	-	154	240	154	174	150	122	10x18	152	21,5
LP60X250T	2500	9000	195	-	-	154	240	154	174	150	122	10x18	152	21,5

X=1 (230/12VAC)

X=4
(400/230VAC)

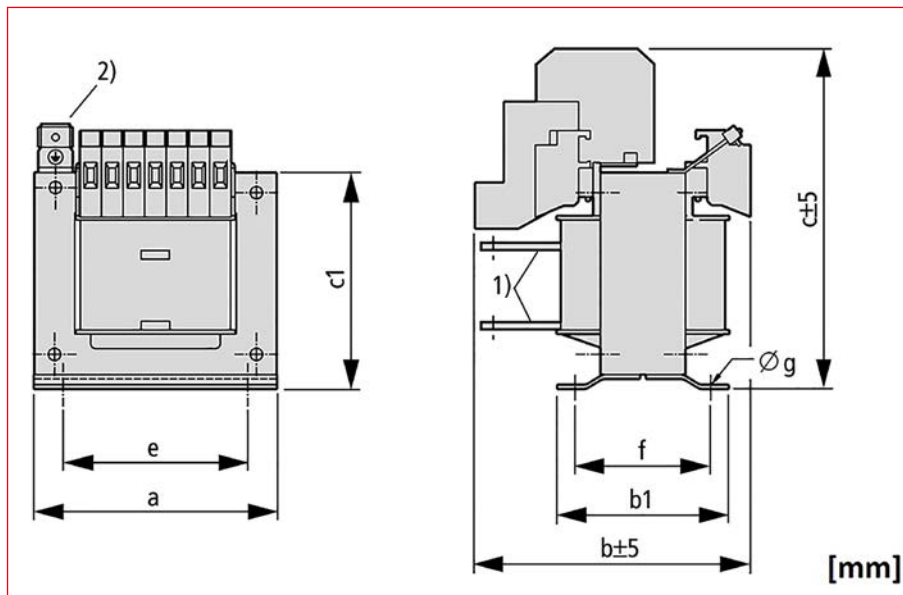
X=2 (230/24VAC)

X=5
(230/230VAC)

X=3 (400/24VAC)

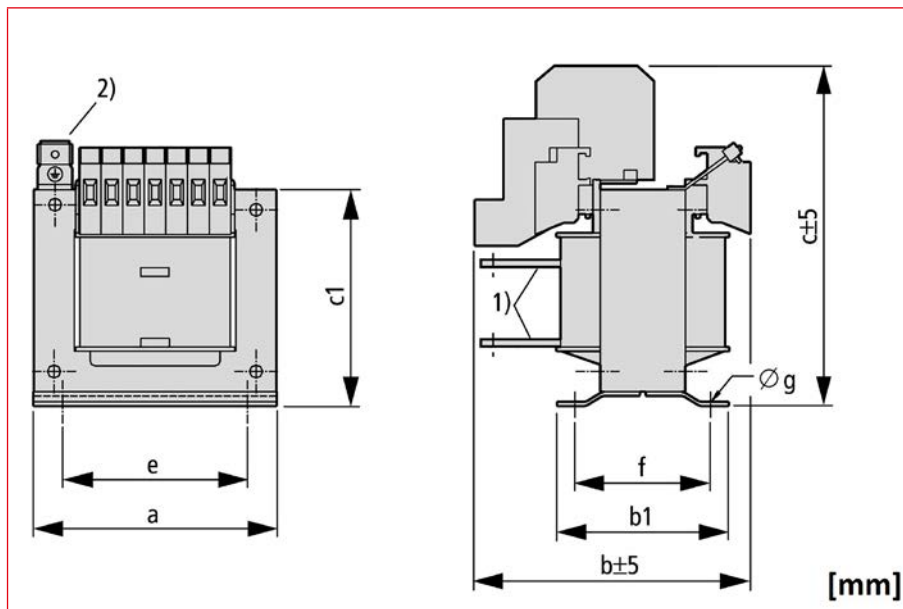
Transformers - Series T

LP612 Dimensions



Type	Rated output [W]	Short time rating [W]	12V		24V		230V		e [mm]	f [mm]	g [mm]	b1 [mm]	c1 [mm]	Total weight [kg]	
			a [mm]	b [mm]	c [mm]	b [mm]	c [mm]	b [mm]							c [mm]
LP612003T	30 VA	65 VA	121	-	-	88	119	88	119	90	69	5,8 x 12	86	106	4,3
LP612006T	60 VA	130 VA	85	75	91	91	75	75	91	64	47	4,8 x 8	60	76	1,5
LP612010T	100 VA	240 VA	85	89	91	89	91	89	91	64	61	4,8 x 8	74	76	2
LP612020T	200 VA	440 VA	106	83	112	83	112	83	112	80	61	5,8 x 12	80	97	3
LP612025T	250 VA	600 VA	106	111	124	91	112	91	112	80	70	5,8 x 12	89	97	3,8

LP614 Dimensions

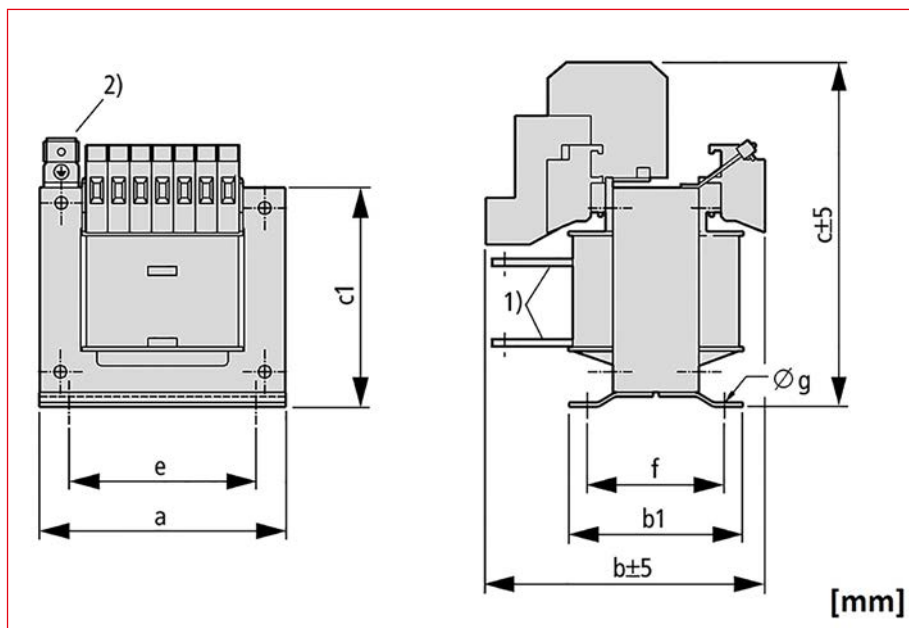


Type	Rated output [W]	Short time rating [W]	12V		24V		230V		e [mm]	f [mm]	g [mm]	b1 [mm]	c1 [mm]	Total weight [kg]	
			a [mm]	b [mm]	c [mm]	b [mm]	c [mm]	b [mm]							c [mm]
LP614006T	60 VA	130 VA	85	75	91	91	75	75	91	64	47	4,8 x 8	60	76	1,5
LP614010T	100 VA	240 VA	85	89	91	89	91	89	91	64	61	4,8 x 8	74	76	2
LP614020T	200 VA	440 VA	106	83	112	83	112	83	112	80	61	5,8 x 12	80	97	3
LP614040T	400 VA	1100 VA	121	-	-	100	119	100	119	90	80	5,8 x 12	98	106	5,2

Transformers

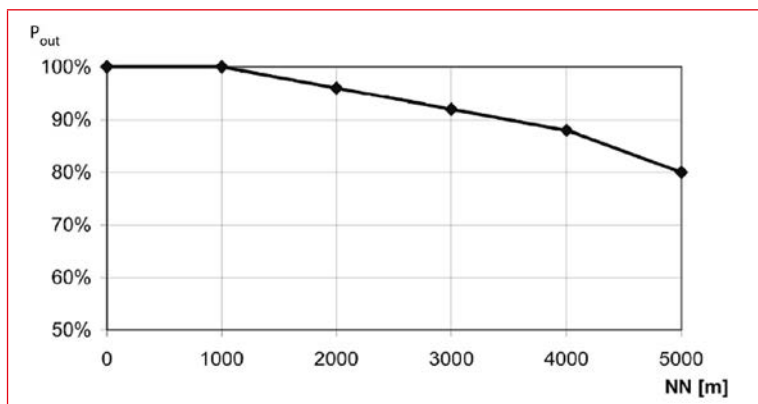
Transformers - Series T

LP691 Dimensions

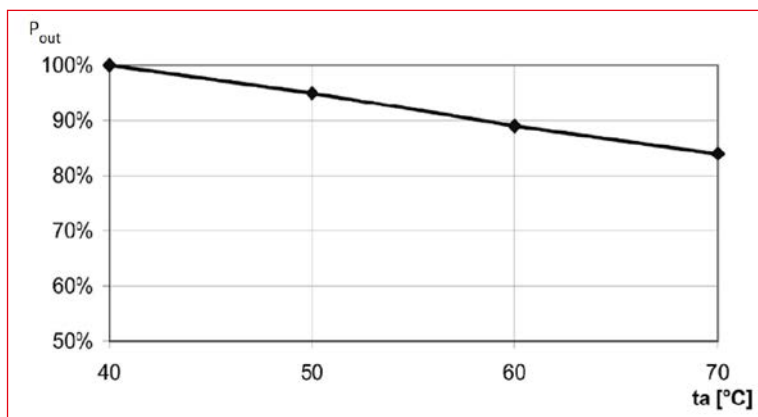


Type	Rated output [W]	Short time rating [W]	a [mm]	12V		24V		230V		e [mm]	f [mm]	g [mm]	b1 [mm]	c1 [mm]	Total weight [kg]
				b [mm]	c [mm]	b [mm]	c [mm]	b [mm]	c [mm]						
LP691041T	315 VA	750 VA	121	-	-	88	119	88	119	80	68	5,8 x 12	86	106	4,3
LP691042T	500 VA	1600 VA	121	-	-	140	131	120	119	90	100	5,8 x 12	118	106	6,8
LP691043T	200 VA	440 VA	106	83	112	83	112	83	112	80	61	5,8 x 12	80	97	3




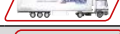
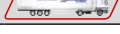


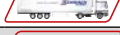
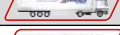



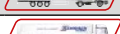

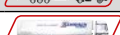




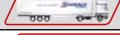
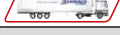






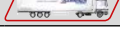





Installation Area



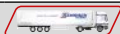

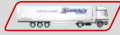


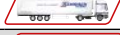
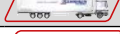










Ambient Temperature



Transformers - Series T

DESCRIPTION	AVAILABLE	ORDER NO.
Single-Phase Transformer 230/12VAC		
230/12V, 30VA		LP601003T
230/12V, 60VA		LP601006T
230/12V, 100VA		LP601010T
230/12V, 160VA		LP601016T
230/12V, 315VA		LP601032T
230/12V, 500VA		LP601050T
Single-Phase Transformer 230/24VAC		
230/24V, 30VA		LP602003T
230/24V, 60VA		LP602006T
230/24V, 100VA		LP602010T
230/24V, 160VA		LP602016T
230/24V, 200VA		LP602020T
230/24V, 250VA		LP602025T
230/24V, 315VA		LP602032T
230/24V, 400VA		LP602040T
230/24V, 500VA		LP602050T
230/24V, 630VA		LP602063T
230/24V, 800VA		LP602080T
230/24V, 1000VA		LP602100T
Single-Phase Transformer 230/24VAC with Secondary Fuse		
230/24V, 30VA and secondary fuse		LP612003T
230/24V, 60VA and secondary fuse		LP612006T
230/24V, 100VA and secondary fuse		LP612010T
230/24V, 200VA and secondary fuse		LP612020T
230/24V, 250VA and secondary fuse		LP612025T
Single-Phase Transformer 400/24VAC		
400/24V, 30VA		LP603003T
400/24V, 100VA		LP603010T
400/24V, 160VA		LP603016T
400/24V, 200VA		LP603020T
400/24V, 250VA		LP603025T
400/24V, 400VA		LP603040T
400/24V, 500VA		LP603050T
400/24V, 1000VA		LP603100T
Single-Phase Transformer 230/230VAC		
230/230V, 100VA		LP605010T
230/230V, 250VA		LP605025T
230/230V, 500VA		LP605050T
230/230V, 800VA		LP605080T
230/230V, 1000VA		LP605100T
230/230V, 1300VA		LP605130T
230/230V, 2000VA		LP605200T
230/230V, 2500VA		LP605250T
Single-Phase Transformer 400/230VAC with Secondary Fuse		
400/230V, 60VA and secondary fuse		LP614006T
400/230V, 100VA and secondary fuse		LP614010T
400/230V, 200VA and secondary fuse		LP614020T
400/230V, 400VA and secondary fuse		LP614040T

Transformers - Series T

DESCRIPTION	AVAILABLE	ORDER NO.
Single-Phase Transformer 400/230VAC		
400/230V, 60VA		LP604006T
400/230V, 100VA		LP604010T
400/230V, 160VA		LP604016T
400/230V, 200VA		LP604020T
400/230V, 250VA		LP604025T
400/230V, 320VA		LP604032T
400/230V, 400VA		LP604040T
400/230V, 500VA		LP604050T
400/230V, 630VA		LP604063T
400/230V, 800VA		LP604080T
400/230V, 1000VA		LP604100T
400/230V, 1600VA		LP604160T
400/230V, 2000VA		LP604200T
400/230V, 2500VA		LP604250T
400/230V, 3000VA		LP604300T
400/230V, 4000VA		LP604400T
400/230V, 5000VA		LP604500T
Control Isolation Transformer		
200-500/230V, 150VA		LP691041T
200-500/230V, 500VA		LP691042T
200-500/230V, 200VA		LP691043T
Accessories		
DIN-Rail mounting plate for control transformer up to 200VA		LP699001T

Power Supply Based on Transformer - Series T



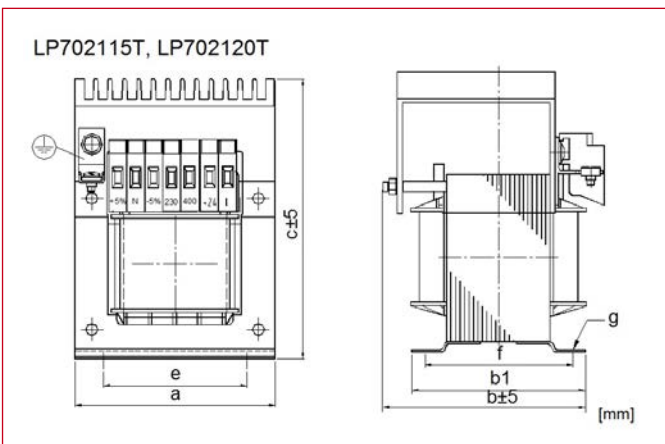
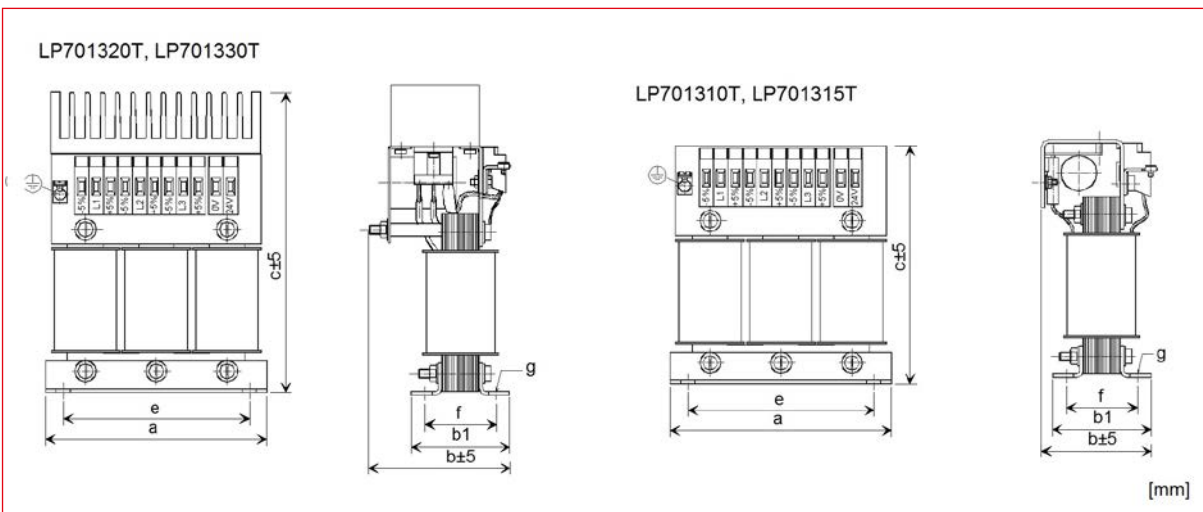
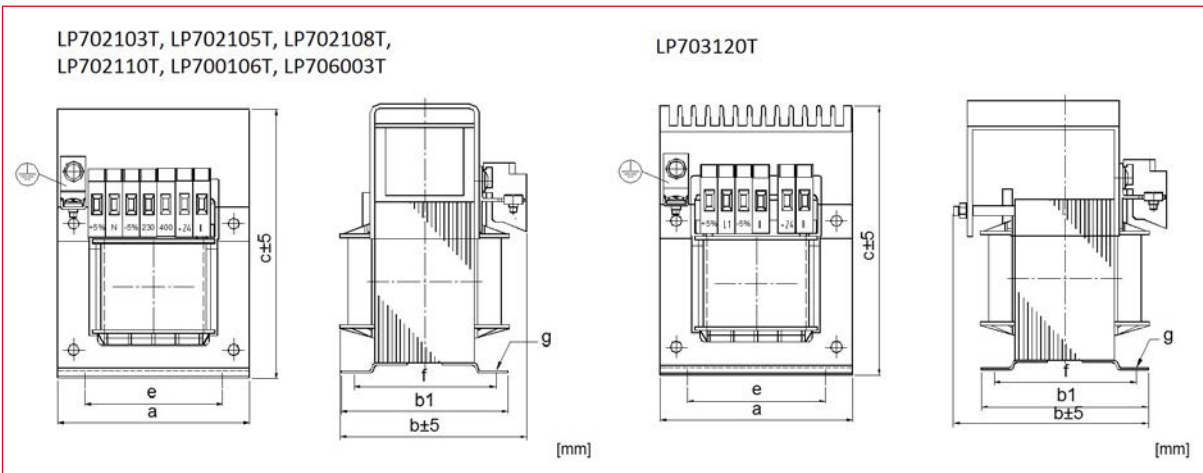
LP702115T

Schrack-Info

Power supply based on transformer with an output voltage of 24VDC

- Primary voltages 230VAC, 230 - 400VAC
- Up to 25A output current
- Low residual ripple < 5%
- Self-cooling

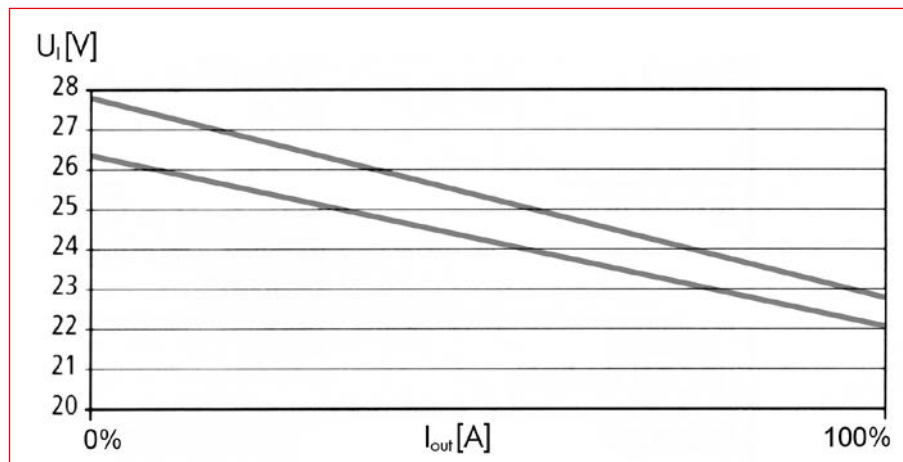
Dimensions






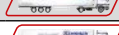



Power Supply Based on Transformer - Series T

Type	Output current DC [A]	a [mm]	b [mm]	b1 [mm]	c [mm]	e [mm]	f [mm]	g [mm]	Total weight [kg]
LP706003T	3	85	85	74	119	64	60,5	4,8	2
LP703120T	20	151	130	121	248	122	99	7	11,1
LP702103T	3	85	93	83	130	64	70	4,8	2,5
LP702105T	5	106	87	79	146	80,5	61,5	5,8	3
LP702108T	8	121	100	86	164	90	70	5,8	4
LP702110T	10	121	132	118	164	90	102	5,8	6,8
LP702115T	15	151	130	121	248	122	99	7	11,1
LP702120T	20	151	147	147	248	122	125	7	14
LP701310T	10	155	77	77	165	130	57	8	4,4
LP701315T	15	155	92	92	165	130	72	8	5,8
LP701320T	20	190	100	83	220	170	58	8	7,6
LP701330T	30	190	110	103	235	170	78	8	11,2
LP700106T	10	121	100	86	168	90	70	5,8	4,45

Characteristic Output Current



DESCRIPTION	AVAILABLE	ORDER NO.
Single-Phase Power Supply Smoothed 230-400V/24V		
230-400/24VDC, 8A		LP702108T
230-400/24VDC, 15A		LP702115T
230-400/24VDC, 20A		LP702120T
230/24VDC, 20A		LP703120T
Three-Phase Power Supply, not Controlled 400/24V		
400/24VDC, 10A		LP701310T
400/24VDC, 15A		LP701315T
400/24VDC, 20A		LP701320T
400/24VDC, 30A		LP701330T
Single-Phase Power Supply, not Controlled		
220-500/24VDC, 6A		LP700106T
230-400/24VDC, 3A		LP702103T
230-400/24VDC, 5A		LP702105T
230-400/24VDC, 10A		LP702110T
230/12VDC, 3A		LP706003T

Power Supply - Series LP4



LP412402



LP442405



LP412406

Schrack-Info

- LP4 industrial power supply series in robust construction
- Setting options for the right application
- 24VDC/12VDC output voltage
- Different power classes as well as UPS version possible

	LP411205	LP411210	LP412402	LP412405	LP412406	LP412412	LP412422	LP432422
Input Data								
Rated input voltage (2xVAC)	115 – 230VAC							400 – 500 VAC
Voltage range (115/230)	90 - 264VAC	90 – 135 (115), 180 – 264 (230)					90-135VAC/ 170-264VAC	330-550VAC
Frequency range	47 – 63Hz							
Input current	1 – 0,7A	2,8 – 1,3A	1 – 0,7A	1,8 – 0,9A	2,8 – 1,3A	3,3 – 2,2A	8A – 4,2A	0,95A – 0,85A
Inrush current ($V_n - I_n$)	$\leq 7A \leq 5ms$	$\leq 11A \leq 5ms$	$\leq 7A \leq 5ms$	$\leq 7A \leq 5ms$	$\leq 11A \leq 5ms$	$\leq 16A \leq 5ms$	$\leq 16A \leq 5ms$	$\leq 16A \leq 5ms$
Internal fuse	T 4A							
External fuse (recommended) (MCB curve B)	6A	10A	6A	10A	10A	16A	16A	16A
Output Data								
Output voltage (V_n) (factory setting)	12VDC	12VDC	24VDC	24VDC	24VDC	24VDC	24VDC	24VDC
Adjustment range ($I_{load\ adj}$)	10 – 15,5 VDC	10 – 14VDC	22 – 27VDC	22 – 27VDC	22 – 27VDC	22 – 27VDC	22 – 27VDC	22 – 27VDC
Capacitor load (max.)	$\leq 50.000\mu F$							
Continuous current at 24V <40°C	4A (115) 6A (230)	14A (permanent)	2A (115) 3A (230)	5A (permanent)	7,5A (permanent)	14A (permanent)	25A (permanent)	25A (permanent)
Continuous current at 24V <50°C	3A (115) 5A (230)	12A (permanent)	1,5A (115) 2,5A (230)	4,5A (permanent)	6A (permanent)	12A (permanent)	22A (permanent)	22A (permanent)
Continuous current at 24V <60°C	2A (115) 3A (230)	10A (permanent)		4A (permanent)	5A (permanent)	10A (permanent)	20A (permanent)	20A (permanent)
Max. current	$I_n @50^\circ C \times 1,8-2,2$							
Ripple and noise	$\leq 80mVpp$							
Efficiency	$\geq 88\%$	$\geq 91\%$	$\geq 88\%$	$\geq 91\%$	$\geq 91\%$	$\geq 91\%$	$\geq 92\%$	$\geq 91\%$
Hold up time	typ. 20ms							
Overheat protection	YES, shutdown with automatic restart							
Overload protection	YES							
Overvoltage protection	YES							
Short circuit protection	YES, Continuous Mode	1° Hiccup Mode, 2° Continuous Mode, 3° Restart After Main	YES, Continuous Mode	1° Hiccup Mode, 2° Fold Back, 3° Restart After Main			1° Manual Reset, 2° Hiccup Mode, 3° Continuous Out Mode	
Parallel operation	YES					YES "Easy Parallel"	YES "Easy Parallel"	YES "Easy Parallel"
Ambient conditions								
Ambient temperature	-25 - +70°C (>50° Derating 2,5%°C)							
Storage temperature	-40 - +85°C							
Ambient humidity	95% at 25°C							
General Data								
Isolation voltage (Input/Output)	3000VAC							
Isolation voltage (Input/PE)	1605VAC							
Isolation voltage (Output/PE)	500VAC							
Electrical safety	EN60950 / EN50178 / IEC60950 / SELV EN60950-1 / PELV EN 60204-1							
EMC standards	Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-6-2 Emission: EN61000-6-4							
Standards	EN60204-1 (safety of electrical equipment machines)							
Degree of protection	IP 20							
Protection class	I (PE connected)							
Reliability: MTBF IEC61709	>500.000h							
Remote contact	Max. DC1: 30VDC 1A; AC1: 60VAC 1A (min. 1mA at 5VDC)							
Dimensions (WxHxD mm)	50x120x50	55x110x105	50x120x50	55x110x105	55x110x105	72x115x135	85x120x140	85x120x140
Weight	~0,3kg	~0,6kg	~0,3kg	~0,5 kg	~0,6 kg	~0,65kg	~0,75 kg	~0,75 kg

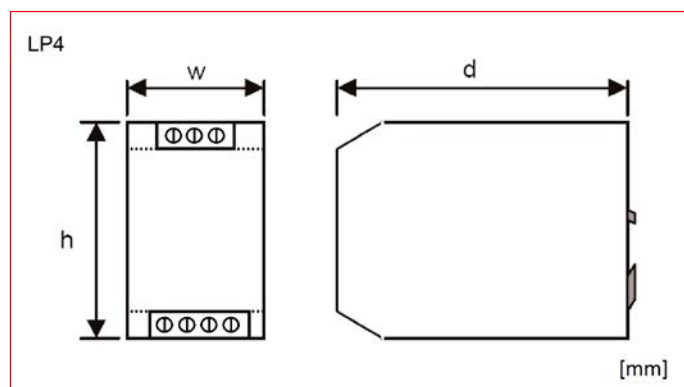
acc. EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU, RoHS Directive 2011/65/EU

Power Supply - Series LP4

Type	LP442405	LP442410
Input Data		
Input single phase	115 – 277VAC	115 – 277VAC
Voltage range	90 – 305VAC	90 – 135 (180 – 305)VAC
Frequency range	47 – 63Hz	47 – 63Hz
Input current	2,8A – 1,3A	3,3A – 2,2A
Internal fuse (unexchangeable)	4A	6,3A
External fuse (recommended) (MCB curve B)	10A	16A
Output Data		
Battery outlet		
Output voltage Battery high charge / rated current	Max 24VDC / 5A	Max 24VDC / 10A
Output voltage of the battery trickle charge / rated current	27,5VDC	27,5VDC
Battery charging current	Max. 5A ±5%	Max. 10A ±5%
Adjustment range ($I_{load\ adj}$)	20 – 100% I_n	20 – 100% I_n
Max. battery capacity	50Ah	100Ah
Charge output		
Rated voltage / rated current	24VDC	24VDC
Output voltage range (at I_n)	22 – 28,8VDC	22 – 28,8VDC
Max. Rated current	1,1 x 5A ±5%	1,1 x 10A ±5%
Charging current (main)	max. 15A	max. 30A
Charging current (secured)	max. 10A	max. 20A
Commissioning with capacitive load (max.)	unlimited	unlimited
Switching on according to the applied mains voltage	max. 1sec	max. 1sec
Ripple and noise	≤ 60mVpp	≤ 60mVpp
Efficiency	≥ 90%	≥ 83%
Overload protection	YES	YES
Overvoltage protection	YES	YES
Short circuit protection	YES	YES
Ambient conditions		
Ambient temperature	-25°C - +70°C	-25°C - +70°C
Storage temperature	-40°C - +85°C	-40°C - +85°C
Ambient humidity	95% to 25°C	95% to 25°C
General Data		
Isolation voltage (Input/Output)	3000VAC	3000VAC
Isolation voltage (Input/PE)	1605VAC	1605VAC
Isolation voltage (Output/PE)	500VAC	500VAC
Electrical safety	EN60950 / UL1950 / EN603	EN60950 / UL1950 / EN60335-2-29
EMC standards	Immunity: IEC 61000-6-2. CE, Emission: IEC 61000-6-3	
Standards	DIN41773 (charge cycle)	DIN41773 (charge cycle)
Degree of protection	IP 20	IP 20
Protection class	I (PE connected)	I (PE connected)
Remote contact	1A – 30VDC	1A – 30VDC
Dimensions (WxHxD mm)	65x115x135	65x115x135
Weight	~0,6kg	~0,6kg











acc. EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU, RoHS Directive 2011/65/EU

Dimensions



	w	h	d
LP411205	50	120	50
LP411210	55	110	105
LP412402	50	120	50
LP412405	55	110	105
LP412406	55	110	105
LP412412	72	115	135
LP412422	85	120	140
LP432422	85	120	140
LP442405	65	115	135
LP442410	100	115	135

Power Supply - Series LP4

DESCRIPTION	AVAILABLE	ORDER NO.
12V - Output Voltage		
230VAC/12VDC, 5A at 50°C		LP411205
230VAC/12VDC, 10A at 50°C		LP411210
24V - Output Voltage		
230VAC/24VDC, 2,5A at 50°C		LP412402
230VAC/24VDC, 4,5A at 50°C		LP412405
230VAC/24VDC, 6A at 50°C		LP412406
230VAC/24VDC, 12A at 50°C		LP412412
230VAC/24VDC, 22A at 50°C		LP412422
400VAC/24VDC, 22A at 50°C		LP432422
24V - Output Voltage with UPS Function		
230VAC/24VDC, 5A with UPS function		LP442405
230VAC/24VDC, 10A with UPS function		LP442410



Power Supply DIN-Rail



LP746201

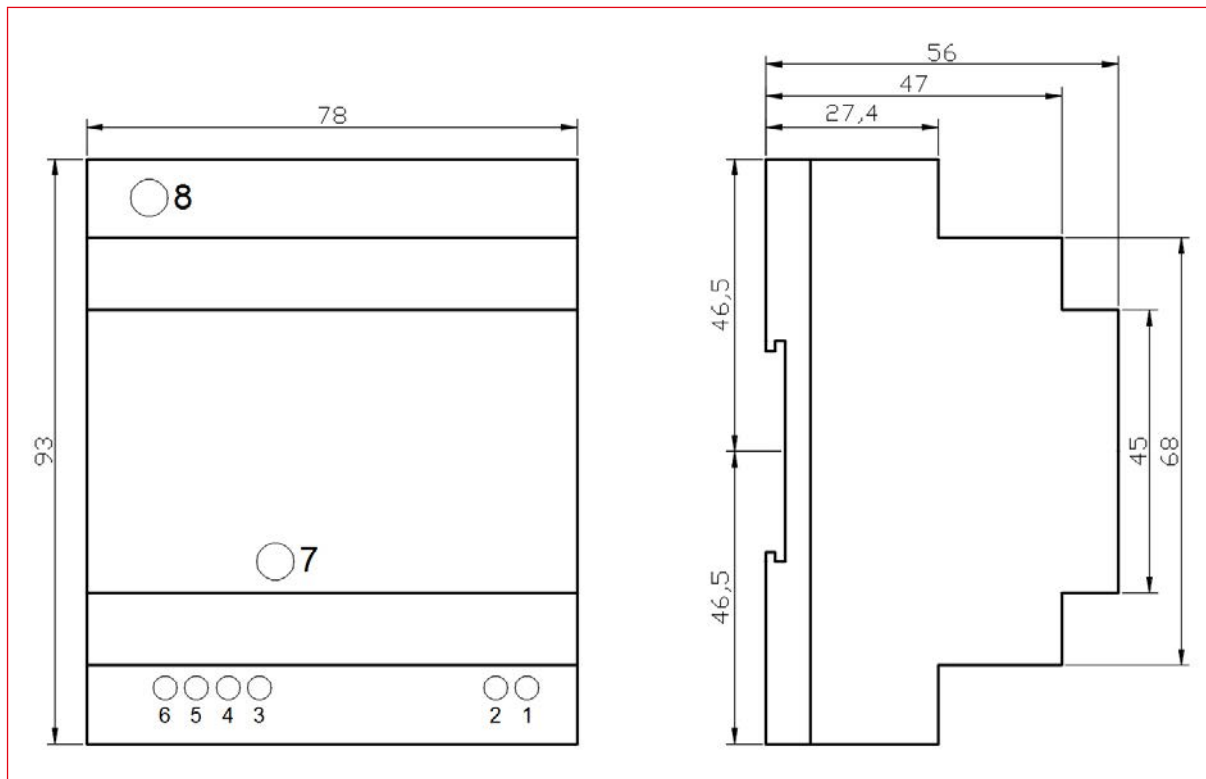
Schrack-Info

- Rail mounted power supply
- 230VAC supply
- 24VDC/12VDC output voltage

	LP746201	LP7432C2
Input Data		
Rated input voltage	100-240VAC (tolerance +10%; -15%)	
Rated input voltage	120-370VDC	
Frequency range	47-63Hz	
Inrush current	cool start 15A/115VAC, 30A/230VAC	
Input current	0,48A/230VAC	
Output Data		
Output voltage	24V	12V
Output current	1,5A	2A
Efficiency	0,83	0,81
Power backup	100ms/230VAC; 21ms/115VACat full load	
Rise time	30ms	
Ripple	±6,5%	±10%
Adjustment range	±10%	±10%
General Data		
Wide input range	YES	
Housing for building installation	YES	
Working temperature	-20°C up to +60°C	
Short circuit protection	YES	
Overvoltage protection / overload protection	115 – 135%	
Protection class	II (protection insulation)	
LED for Power ON	YES	
Burn in test	100% (routine test)	
Overload protection	105 – 160% rated load	
Humidity rel. Moist, not condensing	20 – 90%	
Storage temperature, humidity	-40 – 85°C, 10 – 95% RH	
Temperature coefficient	±0,03%/°C (0-50°C)	
Electric security	EN60950-1, UL60950-1, CE	
Insulation voltage	I/P-O/P:3KVAC	
Insulation resistance	I/P-O/P:100MΩ/500VDC	
EMV	EN55011 (CISPR11) Class B; EN61000-3-2,-3; EN61000-4-2,3,4,5,6,8,11; ENV50204; EN55024; EN61204-3	
Dimensions (WxHxD mm)	78x93x56mm	
Weight	270g	

Power Supply DIN-Rail

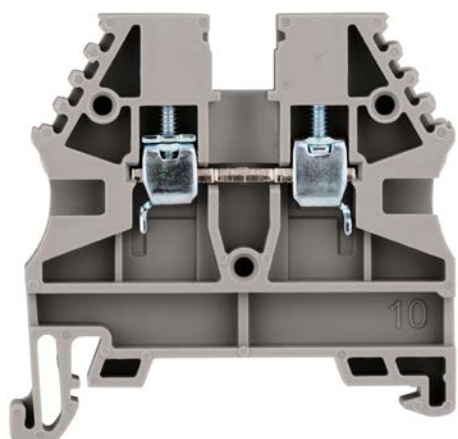
Dimensions



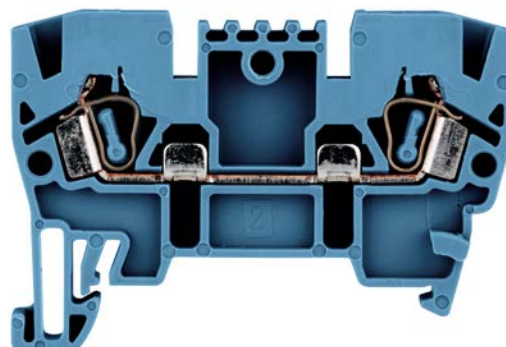
Connection	Description	Connection	Description
1	AC/N	5,6	-V
2	AC/L	7	LED
3,4	+V	8	+V ADJ.

DESCRIPTION	AVAILABLE	ORDER NO.
12V - Output Voltage		
230/12VDC, 2A		LP7432C2
24V - Output Voltage		
230/24VDC, 1,5A		LP746201

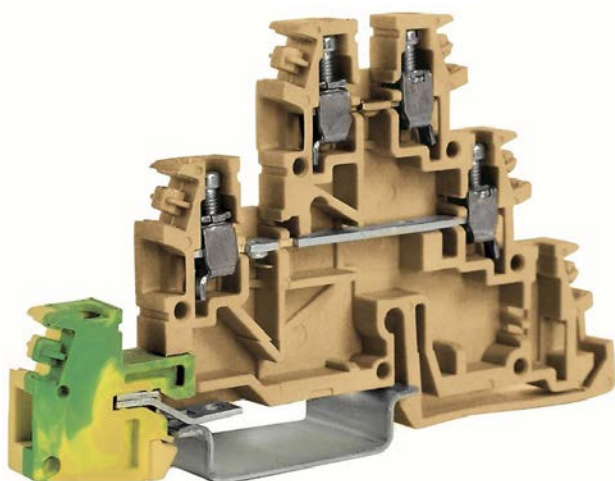
▀ Screw Terminals Series IK6



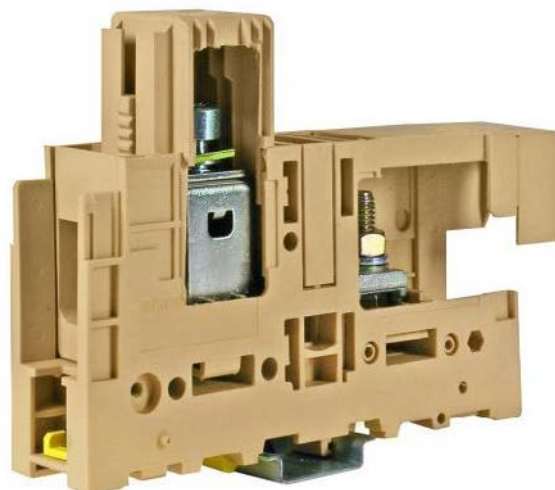
▀ Spring Clamp Terminals Series IK6



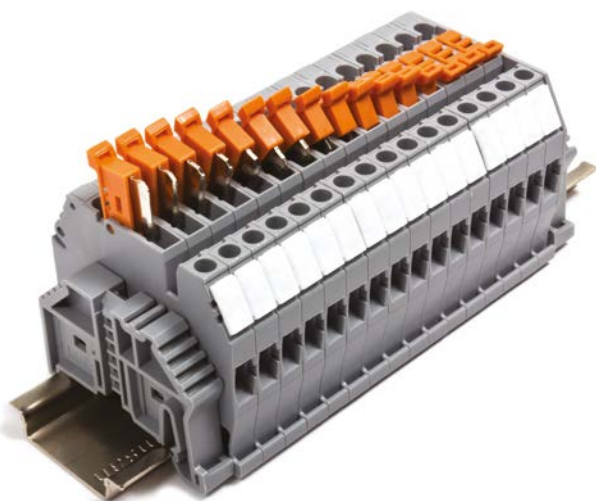
▀ Three-Level Terminal TLD.2 and TDE.2, Series IK1



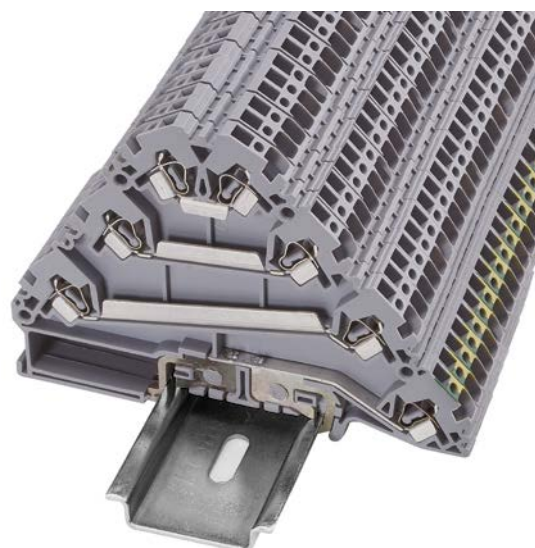
▀ High Current Terminal GPM.150, Series IK1



▀ Disconnect Terminal ASK, Series IK6



▀ Multi-Level Terminals YBK, Series IK6



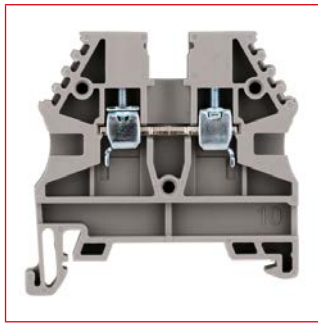
Terminal Blocks

Index

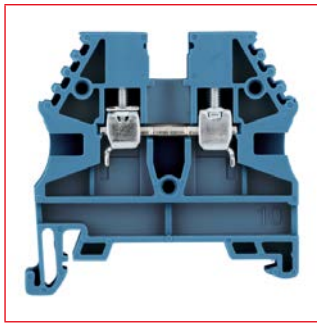
Screw Terminals Series IK6	Page	240
Spring Clamp Terminals Series IK6	Page	258
Screw Terminals Series IK1	Page	272
Spring Clamp Terminals Series IK2	Page	294

Terminal Blocks Series IK6

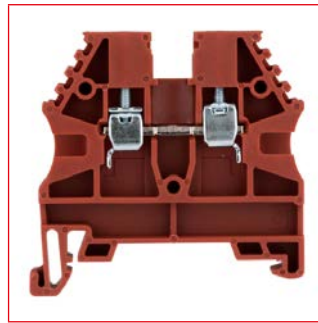
▀ Screw Terminals AVK



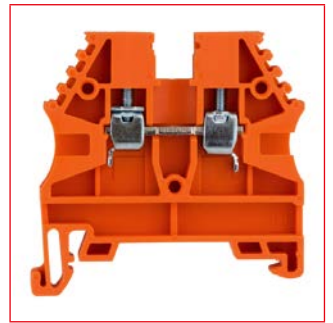
IK600002



IK601002



IK608002









IK608012

▀ Schrack-Info

Screw terminals series IK6



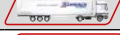
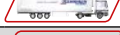
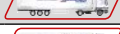



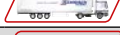
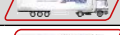




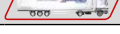


- **AVK grey** from 2.5 to 35 mm²
- **AVK blue** from 2.5 to 35 mm²
- **AVK red** in 2.5, 4 and 10 mm²
- **AVK orange** in 2.5 and 4mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- Mounting rails:
 - AVK from 2.5 to 10: TS 35 rail
 - AVK 16 RD, 35 RD: TS 32 and TS 35 rails
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C



							
Type		AVK 2.5	AVK 4	AVK 6	AVK 10	AVK 16 RD	AVK 35 RD
Article number							
Screw terminal	Grey	IK600002	IK600004	IK600006	IK600010	IK600016-A	IK600035-A
Screw terminal	Blue	IK601002	IK601004	IK601006	IK601010	IK601016-A	IK601035-A
Screw terminal	Red	IK608002	IK608004	-	IK608010	-	-
Screw terminal	Orange	IK608012	IK608014	-	-	-	-
Dimension							
HxWxD	[mm]	44.4 x 5 x 44.2	44.4 x 6 x 44.2	44.4 x 8 x 44.2	44.4 x 10 x 44.2	58.6 x 12 x 52.8	58.6 x 16 x 52.8
Technical Data							
Terminal cross-section	[mm ²]	2.5	4	6	10	16	35
Solid wire	[mm ²]	0.5 - 4	0.5 - 6	0.5 - 10	0.5 - 16	1.5 - 25	1.5 - 50
Stranded wire	[mm ²]	0.5 - 4	0.5 - 6	0.5 - 10	0.5 - 16	1.5 - 25	1.5 - 50
Stranded wire with ferrule, max.	[mm ²]	2.5	4	6	10	16	35
Stripping length	[mm]	9 - 10		10 - 12		12 - 14	16 - 18
Tightening torque, min.	[Nm]	0.4	0.5	0.8	1.2		2.5
Tightening torque, max.	[Nm]	0.6	0.8	1.2	1.8	2.0	3.5
End plate							
End plate	Grey	IK600210				IK600216-A	Terminal closed on both sides
End plate	Blue	IK601210				IK601216-A	
End plate	Red	-				-	
End plate	Orange	-				-	
Separation plate							
Separation plate	Red	IK608210				-	-
Cross-connector							
Cross-connector	2-pole	IK600522	IK600532	IK600542	IK600552	IK600562	IK600572
Cross-connector	10-pole	IK600529	IK600539	IK600549	IK600559	-	-
End bracket							
WGD 1, snappable and screwable		IK623000					
KD 3, snappable and screwable		IK623001					
KD 4, snappable		IK623002					
Marking tag							
Printed marking tag		DY5 IK6970xx					
Unprinted marking tag		DG 10/5 T IK697940	DG 10/6 T IK697950	DG 10/8 IK697960	DG 10/10 IK697970		
Certificate							
CE (EN 60947-7-1)	[V~]	750		630		750	
	[A]	24	32	41	57	76	125
	[mm ²]	2.5	4	6	10	16	35
UL - cULus	[V~]	600					
	[A]	20	30	50	65	80	115
	AWG	26 - 12	26 - 10	26 - 8	16 - 6	12 - 4	12 - 2
VDE (IEC 60947-7-1)	[V~]	750		630		750	
	[A]	24	32	41	57	76	125
	[mm ²]	2.5	4	6	10	16	-

Terminal Blocks Series IK6

Screw Terminals AVK

DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
Screw terminal 2.5 mm ²		IK600002
Screw terminal 4 mm ²		IK600004
Screw terminal 6 mm ²		IK600006
Screw terminal 10 mm ²		IK600010
Screw terminal 16 mm ²		IK600016-A
Screw terminal 35 mm ²		IK600035-A
Blue		
Screw terminal 2.5 mm ²		IK601002
Screw terminal 4 mm ²		IK601004
Screw terminal 6 mm ²		IK601006
Screw terminal 10 mm ²		IK601010
Screw terminal 16 mm ²		IK601016-A
Screw terminal 35 mm ²		IK601035-A
Red		
Screw terminal 2.5 mm ²		IK608002
Screw terminal 4 mm ²		IK608004
Screw terminal 10 mm ²		IK608010
Orange		
Screw terminal 2.5 mm ²		IK608012
Screw terminal 4 mm ²		IK608014



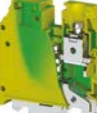

■ Screw Earth Terminals AVK







IK622002

■ Schrack-Info

- Screw earth terminals series IK6
 - **AVK green/yellow** from 2.5 to 35 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

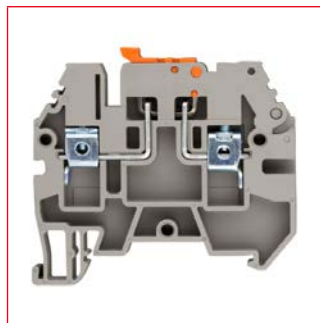
					
Type		AVK 2.5/4 T	AVK 6/10 T	AVK 16 T RD	AVK 35 T RD
Article number					
Screw terminal	Green / yellow	IK622002	IK622010	IK622016-A	IK622035-A
Dimension					
HxWxD	[mm]	44.4 x 6 x 42	44.4 x 10 x 42	58.6 x 12 x 52.8	58.6 x 16 x 52.8
Technical Data					
Terminal cross-section	[mm ²]	2.5 - 4	6 - 10	16	35
Solid wire	[mm ²]	0.5 - 6	0.5 - 16	1.5 - 25	1.5 - 50
Stranded wire	[mm ²]	0.5 - 6	0.5 - 16	1.5 - 25	1.5 - 50
Stranded wire with ferrule, max.	[mm ²]	4	10	16	35
Stripping length	[mm]	9 - 10	10 - 12	12 - 14	16 - 18
Tightening torque, min.	[Nm]	0.5	1.2	1.2	2.5
Tightening torque, max.	[Nm]	0.8	1.8	2.0	3.5
End plate					
End plate	Green	Terminal closed on both sides			
Separation plate					
Separation plate	Red	-			
Cross-connector					
Cross-connector	2-pole	-			
Cross-connector	10-pole	-			
End bracket					
WGD 1, snappable and screwable			IK623000		
KD 3, snappable and screwable			IK623001		
KD 4, snappable			IK623002		
Marking tag					
Printed marking tag			DY5 IK6970xx		
Unprinted marking tag		DG 10/6 T IK697950		DG 10/10 IK697970	
Certificate					
CE (EN 60947-7-2)	[V~]	-			
	[A]	-			
	[mm ²]	4	10	16	35
UL - cULus	[V~]	-			
	[A]	-			
	AWG	20 - 10	16 - 6	12 - 4	12 - 2
VDE (IEC 60947-7-2)	[V~]	-			
	[A]	-			
	[mm ²]	4	10	16	35

DESCRIPTION	AVAILABLE	ORDER NO.
Screw earth terminal 2.5/4 mm ² green/yellow		IK622002
Screw earth terminal 6/10 mm ² green/yellow		IK622010
Screw earth terminal 16 mm ² green/yellow		IK622016-A
Screw earth terminal 35 mm ² green/yellow		IK622035-A



Order no. blue: on stock, usually ready for delivery on the day of order

Disconnect Terminal ASK 3 A




IK641002

Schrack-Info

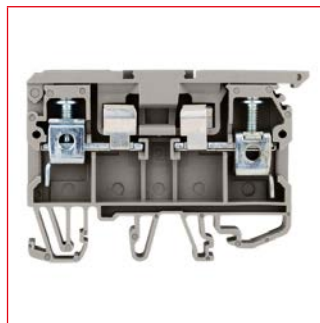
- Disconnect terminal series IK6
 - **ASK 3 A grey**: 4 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 6 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C



Type		ASK 3 A
Article number		
Disconnect terminal	Grey	IK641002
Dimension		
HxWxD	[mm]	50.5 x 6 x 53.5
Technical Data		
Connection type		screw terminal
Terminal cross-section	[mm ²]	4
Solid wire	[mm ²]	0.5 - 6
Stranded wire	[mm ²]	0.5 - 6
Stranded wire with ferrule, max.	[mm ²]	4
Stripping length	[mm]	9 - 10
Tightening torque, min.	[Nm]	0.5
Tightening torque, max.	[Nm]	0.8
End plate		
End plate	Grey	IK631202
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector	2-pole	IK610532
Cross-connector	10-pole	IK610539
End bracket		
WGD 1, snappable and screwable		IK623000
KD 3, snappable and screwable		IK623001
KD 4, snappable		IK623002
Marking tag		
Printed marking tag		DY5 IK6970xx
Unprinted marking tag		DG 10/6 T IK697950
Certificate		
CE (EN 60947-7-1)	[V~]	500
	[A]	16
	[mm ²]	4
UL	[V~]	600
	[A]	16
	AWG	26 - 10
VDE (IEC 60947-7-1)	[V~]	-
	[A]	-
	[mm ²]	-

DESCRIPTION	AVAILABLE	ORDER NO.
Disconnect terminal 4 mm ² grey		IK641002

Fuse Terminal ASK 2 S



IK641004

Schrack-Info

- Fuse terminal series IK6
 - **ASK 2 S grey**: 6 mm²
- Compatible with G-fuses
 - 5x20 mm and 5x25 mm
 - not included
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 6 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C



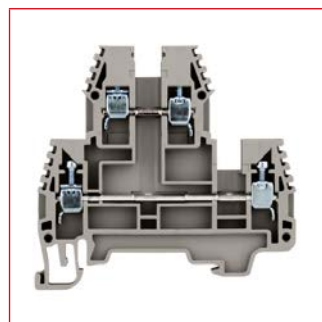
Type		ASK 2 S
Article number		
Fuse terminal	Grey	IK641004
Dimension		
HxWxD	[mm]	45 x 8 x 64.2
Technical Data		
Connection type		screw terminal
Terminal cross-section	[mm ²]	6
Solid wire	[mm ²]	0.5 - 10
Stranded wire	[mm ²]	0.5 - 10
Stranded wire with ferrule, max.	[mm ²]	6
Stripping length	[mm]	10 - 12
Tightening torque, min.	[Nm]	0.8
Tightening torque, max.	[Nm]	1.2
Compatible fuse		Type G, Ø 5 x 20 mm / Ø 5 x 25 mm
End plate		
End plate	Grey	IK631204
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector	2-pole	-
Cross-connector	10-pole	-
End bracket		
WGD 1, snappable and screwable		IK623000
KD 3, snappable and screwable		IK623001
KD 4, snappable		IK623002
Marking tag		
Printed marking tag		DY5 IK6970xx
Unprinted marking tag		DG 10/8 IK697960
Certificate		
CE (EN 60947-7-3)	[V~]	500
	[A]	6.3
	[mm ²]	6
UL	[V~]	300
	[A]	6.3
	AWG	26 - 8
VDE (IEC 60947-7-3)	[V~]	-
	[A]	-
	[mm ²]	-

DESCRIPTION	AVAILABLE	ORDER NO.
Fuse terminal 6 mm ² grey		IK641004

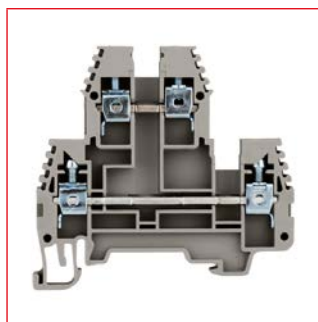


Order no. blue: on stock, usually ready for delivery on the day of order

Two-Level Terminals PIK





IK650002





IK650004

Schrack-Info

- Two-level terminals series IK6
 - **PIK 2.5 N grey:** 2.5 mm²
 - **PIK 4 N grey:** 4 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage:
 - PIK 2.5 N: 6 kV
 - PIK 4 N: 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

Type			
Article number		PIK 2.5 N	PIK 4 N
Two-level terminal	Grey	IK650002	IK650004
Dimension			
HxWxD	[mm]	61.2 x 5 x 64	61.2 x 6 x 64
Technical Data			
Connection type		screw terminals	
Terminal cross-section	[mm ²]	2.5	4
Solid wire	[mm ²]	0.5 - 4	0.5 - 6
Stranded wire	[mm ²]	0.5 - 4	0.5 - 6
Stranded wire with ferrule, max.	[mm ²]	2.5	4
Stripping length	[mm]	9 - 10	
Tightening torque, min.	[Nm]	0.4	0.5
Tightening torque, max.	[Nm]	0.6	0.8
End plate			
End plate	Grey	IK650204	
Separation plate			
Separation plate	Red	-	
Cross-connector			
Cross-connector	2-pole	IK600522	IK600532
Cross-connector	10-pole	IK600529	IK600539
End bracket			
WGD 1, snappable and screwable		IK623000	
KD 3, snappable and screwable		IK623001	
KD 4, snappable		IK623002	
Marking tag			
Printed marking tag		DY5 IK6970xx	
Unprinted marking tag		DG 10/5 T IK697940	DG 10/6 T IK697950
Certificate			
CE (EN 60947-7-1)	[V~]	500	
	[A]	24	32
	[mm ²]	2.5	4
UL	[V~]	300	
	[A]	20	30
	AWG	26 - 12	26 - 10
VDE (IEC 60947-7-1)	[V~]	-	-
	[A]	-	-
	[mm ²]	-	-

DESCRIPTION	AVAILABLE	ORDER NO.
Two-level terminal 2.5 mm ² grey		IK650002
Two-level terminal 4 mm ² grey		IK650004

Three-Level and Multi-Level Terminals PUK



IK680001



IK680002



IK680004







IK680003





Schrack-Info

- Three-level and multi-level terminals series IK6
 - **PUK 3 grey** (L/L/L): 2.5 mm²
 - **PUK 2 T grey** (L/N/PE and L/L/PE): 2.5 mm²
 - **PUK 3 T grey** (L/L/L/PE): 2.5 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 6 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

Terminal Blocks Series IK6

Three-Level and Multi-Level Terminals PUK

					
Type		PUK 3 (L/L/L)	PUK 2 T (L/N/PE)	PUK 2 T (L/L/PE)	PUK 3 T (L/L/L/PE)
Article number					
Three-level terminal	Grey	IK680001	IK680002	IK680004	-
Multi-level terminal	Grey	-	-	-	IK680003
Dimension					
HxWxD	[mm]	65.1 x 6 x 87.2	52.5 x 6 x 71.7		65.2 x 6 x 87.5
Technical Data					
Connection type		screw terminal			
Terminal cross-section	[mm ²]	2.5			
Solid wire	[mm ²]	0.5 - 4			
Stranded wire	[mm ²]	0.5 - 4			
Stranded wire with ferrule, max.	[mm ²]	2.5			
Stripping length	[mm]	7 - 8			
Tightening torque, min.	[Nm]	0.4			
Tightening torque, max.	[Nm]	0.6			
End plate					
End plate	Grey	IK680201		IK680202	IK680203
Separation plate					
Separation plate	Red			-	
Cross-connector					
Cross-connector	2-pole			IK680522	
Cross-connector	10-pole			IK680529	
End bracket					
WGD 1, snappable and screwable				IK623000	
KD 3, snappable and screwable				IK623001	
KD 4, snappable and screwable				IK623002	
Marking tag					
Printed marking tag				DY5 IK6970xx	
Unprinted marking tag				DG 10/6 T IK697950	
Certificate					
CE (EN 60947-7-1 and -2)	[V~]			440	
	[A]			24	
	[mm ²]			2.5	
UL	[V~]			300	
	[A]			24	
	AWG			24 - 12	
VDE (IEC 60947-7-1)	[V~]			-	
	[A]			-	
	[mm ²]			-	

DESCRIPTION	AVAILABLE	ORDER NO.
Three-level terminal 2.5 mm ² (L/L/L) grey		IK680001
Three-level terminal 2.5 mm ² (L/N/PE) grey		IK680002
Three-level terminal 2.5 mm ² (L/L/PE) grey		IK680004
Multi-level terminal 2.5 mm ² (L/L/L/PE) grey		IK680003

High Current Terminals AVK



IK600070



IK600070



IK601070

Schrack-Info



- High current terminals series IK6
 - **AVK grey:** 70 mm²
 - **AVK blue:** 70 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

Terminal Blocks Series IK6

High Current Terminals AVK



Type		AVK 70
Article number		
High current terminal	Grey	IK600070
High current terminal	Blue	IK601070
Dimension		
HxWxD	[mm]	67,5 x 22 x 74
Technical Data		
Connection type		screw terminal
Terminal cross-section	[mm ²]	70
Solid wire	[mm ²]	10 - 70
Stranded wire	[mm ²]	16 - 70
Stranded wire with ferrule, max.	[mm ²]	50
Stripping length	[mm]	20
Tightening torque, max.	[Nm]	6
End plate		
End plate	Grey	Terminal closed on both sides
End plate	Blue	
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector	2-pole	-
Cross-connector	10-pole	-
End bracket		
WGD 1, snappable and screwable		IK623000
KD 3, snappable and screwable		IK623001
KD 4, snappable		IK623002
Marking tag		
Printed marking tag		DY5 IK6970xx
Unprinted marking tag		DG 10/10 IK697970
Certificate		
CE (EN 60947-7-1)	[V~]	750
	[A]	192
	[mm ²]	70
UL	[V~]	600
	[A]	175
	AWG	6 - 2 / 0
VDE (IEC 60947-7-1)	[V~]	-
	[A]	-
	[mm ²]	-

DESCRIPTION	AVAILABLE	ORDER NO.
High current terminal 70 mm ² grey		IK600070
High current terminal 70 mm ² blue		IK601070

End Plates for Screw Terminals



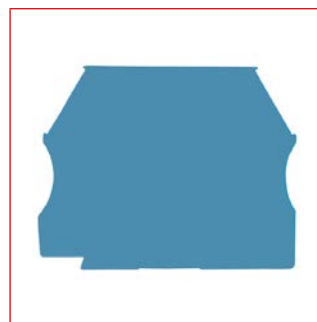
IK600210



IK600216-A



IK650204



IK601210

Schrack-Info

- End plates for screw terminals IK6
 - AVK from 2.5 to 16
 - ASK 3 A
 - ASK 2 S
 - PIK 2.5 N and 4 N
 - PUK 3, 2 T and 3 T

DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
End plate for AVK 2.5, 4, 6 and 10		IK600210
End plate for AVK 16 RD		IK600216-A
End plate for ASK 3 A		IK631202
End plate for ASK 2 S		IK631204
End plate for PIK 2.5 N and 4 N		IK650204
End plate for PUK 3		IK680201
End plate for PUK 2 T		IK680202
End plate for PUK 3 T		IK680203
Blue		
End plate for AVK 2.5, 4, 6 and 10		IK601210
End plate for AVK 16 RD		IK601216-A



■ Cross-Connectors for Screw Terminals



IK600522



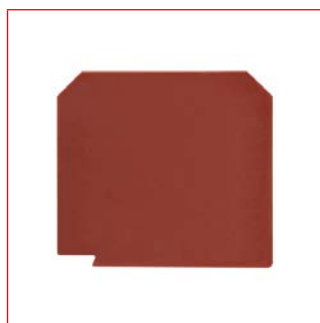
IK600529

■ Schrack-Info

- Cross-connectors for screw terminals IK6 from 2.5 mm² to 35 mm²

DESCRIPTION	AVAILABLE	ORDER NO.
Cross-Connectors 2.5 mm²		
2-pole for AVK 2.5 and PIK 2.5 N		IK600522
10-pole for AVK 2.5 and PIK 2.5 N		IK600529
2-pole for PUK 3, PUK 2 T, PUK 3 T		IK680522
10-pole for PUK 3, PUK 2 T, PUK 3 T		IK680529
Cross-Connectors 4 mm²		
2-pole for AVK 4, ASK 3 A and PIK 4 N		IK600532
10-pole for AVK 4, ASK 3 A and PIK 4 N		IK600539
Cross-Connectors 6 mm²		
2-pole 6 mm ² for AVK 6		IK600542
10-pole 6 mm ² for AVK 6		IK600549
Cross-Connectors 10 mm²		
2-pole 10 mm ² for AVK 10		IK600552
10-pole 10 mm ² for AVK 10		IK600559
Cross-Connectors 16 mm²		
2-pole 16 mm ² for AVK 16 RD		IK600562
Cross-Connectors 35 mm²		
2-pole 35 mm ² for AVK 35 RD		IK600572

■ Separation Plate for Screw Terminals AVK



IK608210

■ Schrack-Info

- Separation plate red for screw terminals IK6 from type AVK 2.5 to 10

DESCRIPTION	AVAILABLE	ORDER NO.
Separation plate for AVK 2.5, 4, 6 and 10 red		IK608210

Socket for Test Plug



IK600900

Schrack-Info

- Socket for test plugs of measuring instruments
- Type TSK 3
- Thread diameter 2.3 mm
- Compatible with terminal types AVK 2.5, PIK 2.5 N, PIK 4 N, PUK 3, PUK 2 T and PUK 3 T

DESCRIPTION	AVAILABLE	ORDER NO.
Socket for test plug		IK600900

Group Tag Holder and AVK Tag Holder



IK600998



IK600999

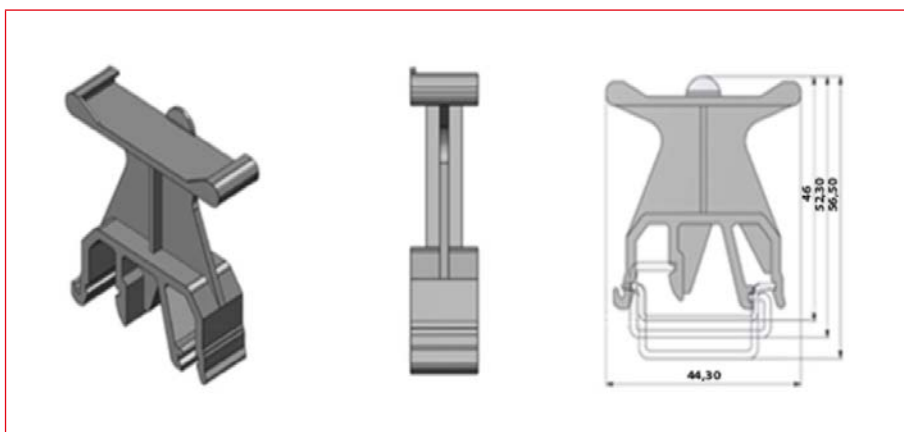


AVK 2.5 + GE 2 + DY 5

Schrack-Info

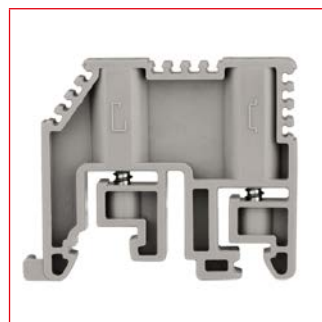
- Group tag holder **type GE**
 - For G-rail TS 32 and DIN-rail TS 35
- Marking tag holder **type GE 2**
 - For screw terminals AVK from 2.5 to 10
 - Compatible with marking tags DY 5, DB 10/5, DG 6/5 and DG 10/5 T

Dimensions Group Tag Holder IK600998 (mm)



DESCRIPTION	AVAILABLE	ORDER NO.
Group tag holder type GE grey		IK600998
Marking tag holder type GE 2 white		IK600999

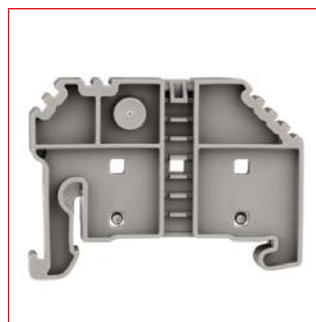
End Brackets for Screw Terminals



IK623000



IK623001



IK623002



IK600997

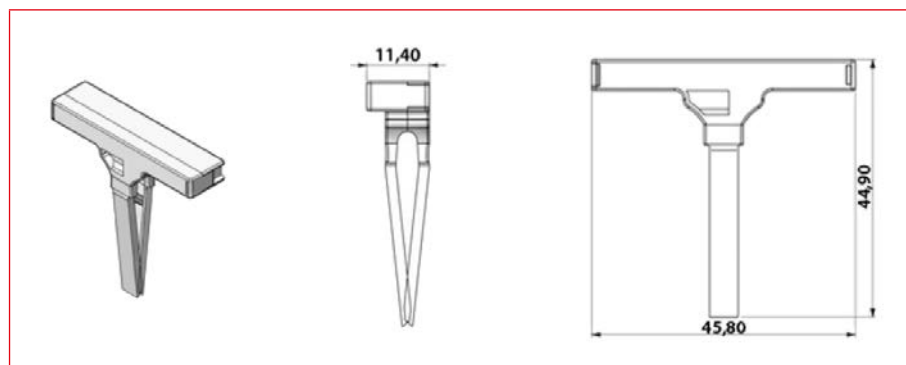


IK623002 + IK600997



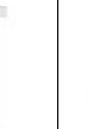


Schrack-Info





- End brackets grey for screw- and spring clamp terminals IK6
- **Type WGD 1**
 - For G-rail TS 32 and DIN-rail TS 35
 - Snap fastening with screw fixing
- **Type KD 3**
 - For DIN-rail TS 35
 - Snap fastening with screw fixing
- **Type KD 4**
 - For DIN-rail TS 35
 - Snap fastening
 - Group tag holder IK600997 mountable

Dimensions Group Tag Holder IK600997 (mm)



Compatible and Recommended Marking Tags for End Brackets

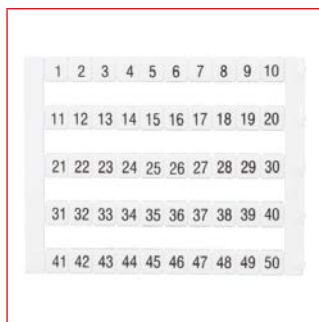
								
	50 Tags	30 Tags	30 Tags	40 Tags	44 Tags	36 Tags	26 Tags	20 Tags
Article number	IK6970xx	IK697910	IK697920	IK697930	IK697940	IK697950	IK697960	IK697970
Type	DY 5	DB 10/5	DB 10/6.5	DG 6/5	DG 10/5 T	DG 10/6 T	DG 10/8	DG 10/10
WGD 1	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
KD 3	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
KD 4	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-

DESCRIPTION	AVAILABLE	ORDER NO.
End bracket WGD 1 snappable and screwable for TS 32 and TS 35 rails		IK623000
End bracket KD 3 snappable and screwable for TS 35 rail		IK623001
End bracket KD 4 snappable for TS 35 rail		IK623002
Group tag holder for end bracket KD 4		IK600997

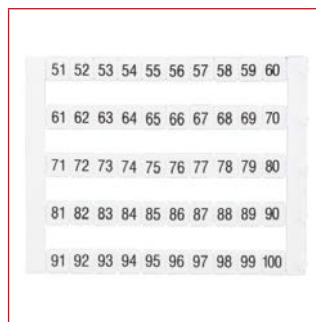
Marking Tags for Screw Terminals



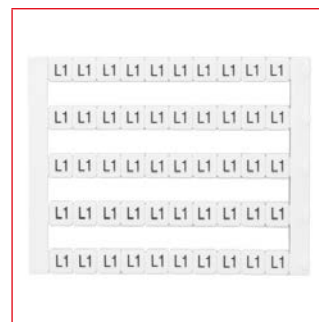
IK697020



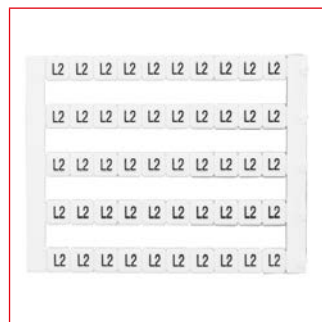
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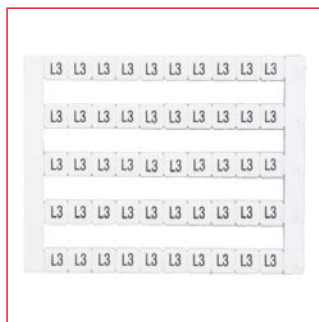
IK697041



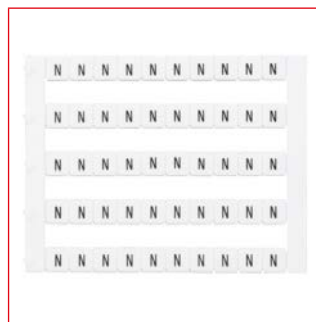
IK697090



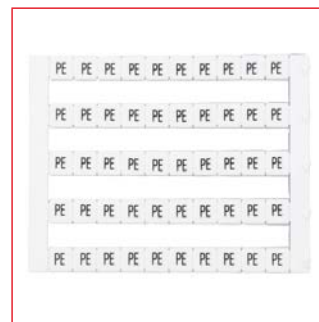
IK697091



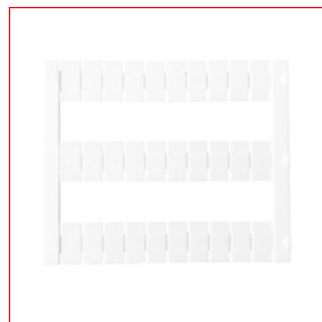
IK697092



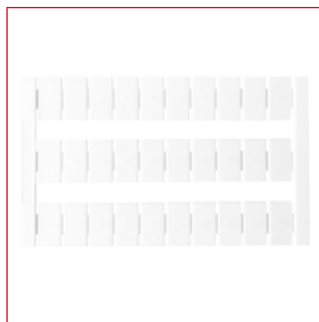
IK697093



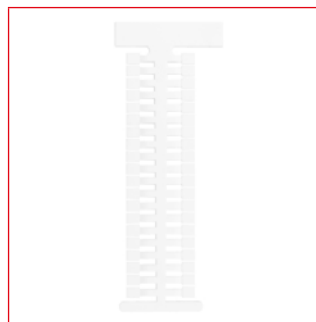
IK697094



IK697910



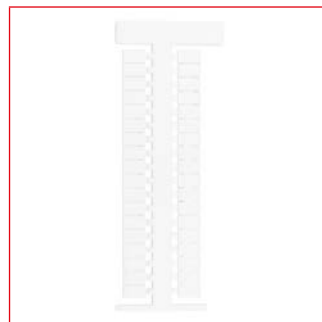
IK697920



IK697930



IK697940



IK697950



IK697960



IK697970





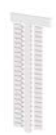
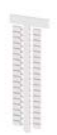




IK193901

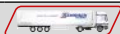



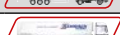



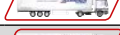

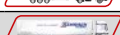








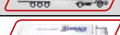



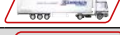
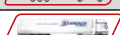


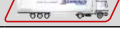





Schrack-Info

- Printed and unprinted marking tags for screw- and spring clamp terminals IK6

Marking Tags for Screw Terminals

								
	50 Tags	30 Tags	30 Tags	40 Tags	44 Tags	36 Tags	26 Tags	20 Tags
Article number	IK6970xx	IK697910	IK697920	IK697930	IK697940	IK697950	IK697960	IK697970
Type	DY 5	DB 10/5	DB 10/6.5	DG 6/5	DG 10/5 T	DG 10/6 T	DG 10/8	DG 10/10
AVK 2.5	Compatible	Compatible	-	Compatible	Recommended	-	-	-
AVK 4	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
AVK 6	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
AVK 10	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
AVK 16 RD	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
AVK 35 RD	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
AVK 2.5/4 T	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
AVK 6/10 T	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
AVK 16 T RD	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
AVK 35 T RD	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
ASK 3 A	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
ASK 2 S	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
PIK 2.5 N	Compatible	Compatible	-	Compatible	Recommended	-	-	-
PIK 4 N	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
PUK 3	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
PUK 2 T	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
PUK 3 T	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
AVK 70	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended

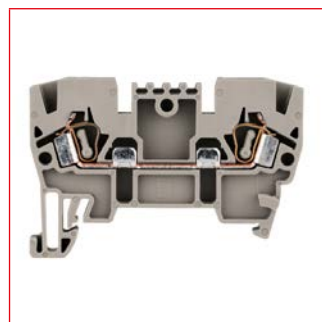
Marking Tags for Screw Terminals

DESCRIPTION	AVAILABLE	ORDER NO.
DEKAFIX "DY 5" printed - Numbers		
"1" (50 times)		IK697001
"2" (50 times)		IK697002
"3" (50 times)		IK697003
"1-10" (5 times)		IK697020
"11-20" (5 times)		IK697021
"21-30" (5 times)		IK697022
"31-40" (5 times)		IK697023
"41-50" (5 times)		IK697024
"1-50" (1 time)		IK697040
"51-100" (1 time)		IK697041
"101-150" (1 time)		IK697042
"151-200" (1 time)		IK697043
"201-250" (1 time)		IK697044
"251-300" (1 time)		IK697045
"301-350" (1 time)		IK697046
"351-400" (1 time)		IK697047
DEKAFIX "DY 5" printed - Signs		
"L1" (50 times)		IK697090
"L2" (50 times)		IK697091
"L3" (50 times)		IK697092
"N" (50 times)		IK697093
"PE" (50 times)		IK697094
"+" (50 times)		IK697085
"-" (50 times)		IK697086
"X" (50 times)		IK697083
DEKAFIX "DB" and "DG" unprinted		
DB 10/5 (30 tags)		IK697910
DB 10/6.5 (30 tags)		IK697920
DG 6/5 (40 tags)		IK697930
DG 10/5 T (44 tags)		IK697940
DG 10/6 T (36 tags)		IK697950
DG 10/8 (26 tags)		IK697960
DG 10/10 (20 tags)		IK697970
Marker pens		
Marking pen red		IK198901
Marking pen black		IK193901

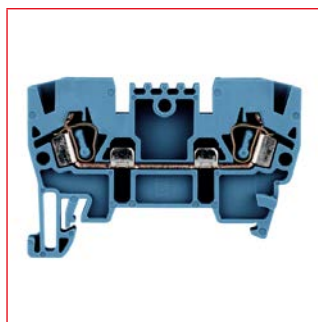


Order no. blue: on stock, usually ready for delivery on the day of order

Spring Clamp Terminals YBK



IK610002



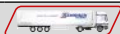







IK611002

Schrack-Info

- Spring clamp terminals series IK6
 - **YBK grey** from 2.5 to 10 mm²
 - **YBK blue** from 2.5 to 10 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

Type		YBK 2.5	YBK 4	YBK 6	YBK 10
Article number					
Spring clamp terminal	Grey	IK610002	IK610004	IK610006	IK610010
Spring clamp terminal	Blue	IK611002	IK611004	IK611006	IK611010
Dimension					
HxWxD	[mm]	35.5 x 5 x 51	37 x 6 x 55	38.5 x 8 x 64	43 x 10 x 70
Technical Data					
Terminal cross-section	[mm ²]	2.5	4	6	10
Solid wire	[mm ²]	0.5 - 4	0.5 - 6	0.5 - 10	0.5 - 16
Stranded wire	[mm ²]	0.5 - 2.5	0.5 - 4	0.5 - 6	0.5 - 10
Stranded wire with ferrule, max.	[mm ²]	2.5	4	6	10
Stripping length	[mm]	9 - 10	10 - 12		11 - 13
End plate					
End plate	Grey	IK610202	IK610204	IK610206	IK610210
End plate	Blue	IK611202	IK611204	-	-
Separation plate					
Separation plate	Red	-			
Cross-connector					
Cross-connector	2-pole	IK610522	IK610532	-	-
Cross-connector	10-pole	IK610529	IK610539	-	-
End bracket					
WGD 1, snappable and screwable		IK623000			
KD 3, snappable and screwable		IK623001			
KD 4, snappable		IK623002			
Marking tag					
Printed marking tag		DY5 IK6970xx			
Unprinted marking tag		DG 10/5 T IK697940	DG 10/6 T IK697950	DG 10/8 IK697960	DG 10/10 IK697970
Certificate					
CE (EN 60947-7-1)	[V~]	750			
	[A]	24	32	41	57
	[mm ²]	2.5	4	6	10
UL	[V~]	600			
	[A]	20	26	35	55
	AWG	22 - 12	22 - 10	22 - 8	20 - 6
VDE (IEC 60947-7-1)	[V~]	-			
	[A]	-			
	[mm ²]	-			

Spring Clamp Terminals YBK

DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
Spring clamp terminal 2.5 mm ²		IK610002
Spring clamp terminal 4 mm ²		IK610004
Spring clamp terminal 6 mm ²		IK610006
Spring clamp terminal 10 mm ²		IK610010
Blue		
Spring clamp terminal 2.5 mm ²		IK611002
Spring clamp terminal 4 mm ²		IK611004
Spring clamp terminal 6 mm ²		IK611006
Spring clamp terminal 10 mm ²		IK611010



Spring Clamp Earth Terminals YBK



IK632002

Schrack-Info

- Spring clamp earth terminals series IK6
 - **YBK green/yellow** from 2.5 to 10 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C



Type		YBK 2.5 T	YBK 4 T	YBK 6 T	YBK 10 T
Article number					
Spring clamp terminal	Green/ yellow	IK632002	IK632004	IK632006	IK632010
Dimension					
HxWxD	[mm]	35.5 x 5 x 51	37 x 6 x 55	38.5 x 8 x 64	43 x 10 x 70
Technical Data					
Terminal cross-section	[mm ²]	2.5	4	6	10
Solid wire	[mm ²]	0.5 - 4	0.5 - 6	0.5 - 10	0.5 - 16
Stranded wire	[mm ²]	0.5 - 2.5	0.5 - 4	0.5 - 6	0.5 - 10
Stranded wire with ferrule, max.	[mm ²]	2.5	4	6	10
Stripping length	[mm]	9 - 10	10 - 12		11 - 13
End plate					
End plate	Green	IK632202	IK632204	IK632206	IK632210
Separation plate					
Separation plate	Red			-	
Cross-connector					
Cross-connector	2-pole			-	
Cross-connector	10-pole			-	
End bracket					
WGD 1, snappable and screwable			IK623000		
KD 3, snappable and screwable			IK623001		
KD 4, snappable			IK623002		
Marking tag					
Printed marking tag			DY5 IK6970xx		
Unprinted marking tag		DG 10/5 T IK697940	DG 10/6 T IK697950	DG 10/8 IK697960	DG 10/10 IK697970
Certificate					
CE (EN 60947-7-2)	[V-]				
	[A]				
	[mm ²]	2.5	4	6	10
UL	[V-]				
	[A]				
	AWG	22 - 12	22 - 10	22 - 8	20 - 6
VDE (IEC 60947-7-2)	[V-]				
	[A]				
	[mm ²]				

DESCRIPTION	AVAILABLE	ORDER NO.
Spring clamp earth terminal 2.5 mm ² green/yellow		IK632002
Spring clamp earth terminal 4 mm ² green/yellow		IK632004
Spring clamp earth terminal 6 mm ² green/yellow		IK632006
Spring clamp earth terminal 10 mm ² green/yellow		IK632010

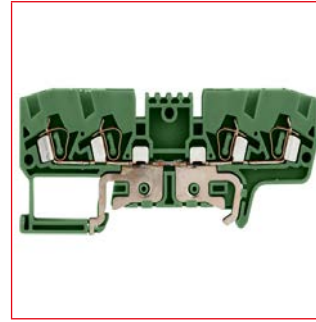
Distribution Terminals YBK



IK690013



IK690014






IK692014




Schrack-Info

- Distribution terminals series IK6
 - **YBK 2.5 E grey** (1 input/ 2 outputs): 2.5 mm²
 - **YBK 2.5 C grey** (2 inputs/ 2 outputs): 2.5 mm²
 - **YBK 2.5 CT green/yellow** (2 inputs/ 2 outputs): 2.5 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

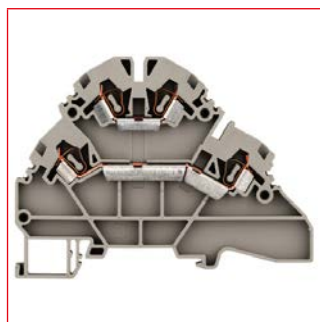
Terminal Blocks Series IK6

Distribution Terminals YBK

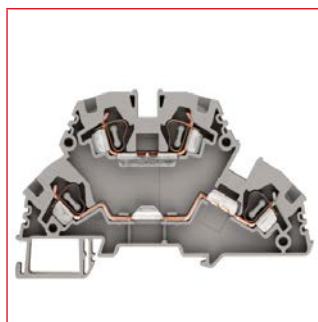
				
Type		YBK 2.5 E	YBK 2.5 C	YBK 2.5 CT
Article number				
Distribution terminal	Grey	IK690013	IK690014	-
Distribution terminal	Green / yellow	-	-	IK692014
Dimension				
HxWxD	[mm]	35.5 x 5 x 66.6	35.5 x 5 x 81.4	35.5 x 5 x 81.4
Technical Data				
Connection type		spring clamp terminal		
Terminal cross-section	[mm ²]	2.5	2.5	2.5
Solid wire	[mm ²]	0.5 - 4	0.5 - 4	0.5 - 4
Stranded wire	[mm ²]	0.5 - 2.5	0.5 - 2.5	0.5 - 2.5
Stranded wire with ferrule, max.	[mm ²]	2.5	2.5	2.5
Stripping length	[mm]	9 - 10		
End plate				
End plate	Grey	IK690213	IK690214	-
End plate	Green	-	-	IK692214
Separation plate				
Separation plate	Red	-		
Cross-connector				
Cross-connector	2-pole	IK610522		-
Cross-connector	10-pole	IK610529		-
End bracket				
WGD 1, snappable and screwable		IK623000		
KD 3, snappable and screwable		IK623001		
KD 4, snappable		IK623002		
Marking tag				
Printed marking tag		DY5 IK6970xx		
Unprinted marking tag		DG 10/5 T IK697940		
Certificate				
CE (EN 60947-7-1 and -2)	[V~]	750		-
	[A]	24		-
	[mm ²]	2.5		-
UL	[V~]	600		-
	[A]	20		-
	AWG	22 - 12		-
VDE (IEC 60947-7-1)	[V~]	-		-
	[A]	-		-
	[mm ²]	-		-

DESCRIPTION	AVAILABLE	ORDER NO.
Distribution terminal 2.5 mm ² (1 input/2 outputs) grey		IK690013
Distribution terminal 2.5 mm ² (2 inputs/2 outputs) grey		IK690014
Distribution earth terminal 2.5 mm ² (2 inputs/2 outputs) green/yellow		IK692014

Two-Level Terminals YBK





IK660002





IK660004

Schrack-Info

- Two-level terminals series IK6
 - **YBK 2.5 - 2 F grey:** 2.5 mm²
 - **YBK 4 - 2 F grey:** 4 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

Type			
		YBK 2.5 - 2 F	YBK 4 - 2 F
Article number			
Two-level terminal	Grey	IK660002	IK660004
Dimension			
HxWxD	[mm]	64.2 x 5 x 83.8	55.4 x 6 x 90.3
Technical data			
Connection type		spring clamp terminal	
Terminal cross-section	[mm ²]	2.5	4
Solid wire	[mm ²]	0.5 - 4	0.5 - 6
Stranded wire	[mm ²]	0.5 - 2.5	0.5 - 4
Stranded wire with ferrule, max.	[mm ²]	2.5	4
Stripping length	[mm]	9 - 10	10 - 12
End plate			
End plate	Grey	IK690202	IK660204
Separation plate			
Separation plate	Red	-	-
Cross-connector			
Cross-connector	2-pole	IK610522	IK610532
Cross-connector	10-pole	IK610529	IK610539
End bracket			
WGD 1, snappable and screwable			IK623000
KD 3, snappable and screwable			IK623001
KD 4, snappable			IK623002
Marking tag			
Printed marking tag		DY5 IK6970xx	
Unprinted marking tag		DG 6/5 IK697930	DG 10/6 T IK697950
Certificate			
CE (EN 60947-7-1)	[V-]	500	750
	[A]	24	32
	[mm ²]	2.5	4
UL	[V-]	600	
	[A]	24	26
	AWG	22 - 12	22 - 10
VDE (IEC 60947-7-1)	[V-]	-	-
	[A]	-	-
	[mm ²]	-	-

DESCRIPTION	AVAILABLE	ORDER NO.
Two-level terminal 2.5 mm ² grey		IK660002
Two-level terminal 4 mm ² grey		IK660004



Order no. blue: on stock, usually ready for delivery on the day of order

Three-Level and Multi-Level Terminals YBK



IK690001



IK690002









IK690003

Schrack-Info

- Three-level and multi-level terminals series IK6
 - **YBK 2.5 - 3 F grey** (L/L/L): 2.5 mm²
 - **YBK 2.5 - 2 FT grey** (L/N/PE): 2.5 mm²
 - **YBK 2.5 - 3 FT grey** (L/L/L/PE): 2.5 mm²
- Polyamide 6.6 insulating material
- Flammability class V2 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 6 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -55 °C to 120 °C

 Three-Level and Multi-Level Terminals YBK

				
Type		YBK 2.5 - 3 F (L/L/L)	YBK 2.5 - 2 FT (L/N/PE)	YBK 2.5 - 3 FT (L/L/L/PE)
Article number				
Three-level terminal	Grey	IK690001	IK690002	-
Multi-level terminal	Grey	-	-	IK690003
Dimension				
HxWxD	[mm]	72.2 x 5 x 100	63.8 x 5 x 83.8	72.2 x 5 x 100
Technical Data				
Connection type		spring clamp terminal		
Terminal cross-section	[mm ²]	2.5	2.5	2.5
Solid wire	[mm ²]	0.5 - 4	0.5 - 4	0.5 - 4
Stranded wire	[mm ²]	0.5 - 2.5	0.5 - 2.5	0.5 - 2.5
Stranded wire with ferrule, max.	[mm ²]	2.5	2.5	2.5
Stripping length	[mm]	9 - 10		
End plate				
End plate	Grey	IK690201	IK690202	IK690203
Separation plate				
Separation plate	Red	-		
Cross-connector				
Cross-connector	2-pole	IK610522	-	
Cross-connector	10-pole	IK610529	-	
End bracket				
WGD 1, snappable and screwable		IK623000		
KD 3, snappable and screwable		IK623001		
KD 4, snappable		IK623002		
Marking tag				
Printed marking tag		DY5 IK6970xx		
Unprinted marking tag		DG 6/5 IK697930		
Certificate				
CE (EN 60947-7-1 and -2)	[V~]	500		
	[A]	24		
	[mm ²]	2.5		
UL	[V~]	600		
	[A]	20		
	AWG	22 - 12		
VDE (IEC 60947-7-1)	[V~]	-		
	[A]	-		
	[mm ²]	-		

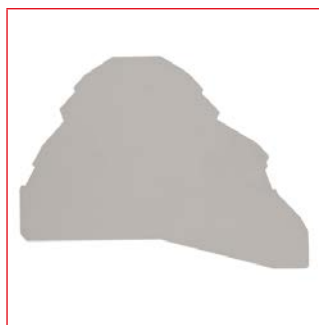
DESCRIPTION	AVAILABLE	ORDER NO.
Three-level terminal 2.5 mm ² (L/L/L) grey		IK690001
Three-level terminal 2.5 mm ² (L/N/PE) grey		IK690002
Multi-level terminal 2.5 mm ² (L/L/L/PE) grey		IK690003



End Plates for Spring Clamp Terminals



IK610202



IK690202











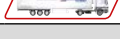








IK611202



IK632202

Schrack-Info

- End plates for spring clamp terminals IK6
 - YBK from 2.5 to 10
 - YBK from 2.5 T to 10 T
 - YBK 2.5 E, C and CT
 - YBK 2.5 - 2 F and 4 - 2 F
 - YBK 2.5 - 3 F, 2 FT and 3 FT

DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
End plate for YBK 2.5		IK610202
End plate for YBK 4		IK610204
End plate for YBK 6		IK610206
End plate for YBK 10		IK610210
End plate for YBK 2.5 E		IK690213
End plate for YBK 2.5 C		IK690214
End plate for YBK 2.5 - 2 F and 2 FT		IK690202
End plate for YBK 4 - 2 F		IK660204
End plate for YBK 2.5 - 3 F		IK690201
End plate for YBK 2.5 - 3 FT		IK690203
Blue		
End plate for YBK 2.5		IK611202
End plate for YBK 4		IK611204
Green		
End plate for YBK 2.5 T		IK632202
End plate for YBK 4 T		IK632204
End plate for YBK 6 T		IK632206
End plate for YBK 10 T		IK632210
End plate for YBK 2.5 CT		IK692214

█ Cross-Connectors for Spring Clamp Terminals



IK610522



IK610529

█ Schrack-Info

- Cross-connectors for spring clamp terminals IK6, 2.5 mm² and 4 mm²

DESCRIPTION	AVAILABLE	ORDER NO.
Cross-Connectors 2.5 mm²		
2-pole for YBK 2.5, E, C, - 2 F, - 3 F and - 2 FT		IK610522
10-pole for YBK 2.5, E, C, - 2 F, - 3 F and - 2 FT		IK610529
Cross-Connectors 4 mm²		
2-pole for YBK 4 and - 2 F (as well as screw terminal ASK 3 A)		IK610532
10-pole for YBK 4 and - 2 F (as well as screw terminal ASK 3 A)		IK610539

█ Group Tag Holder

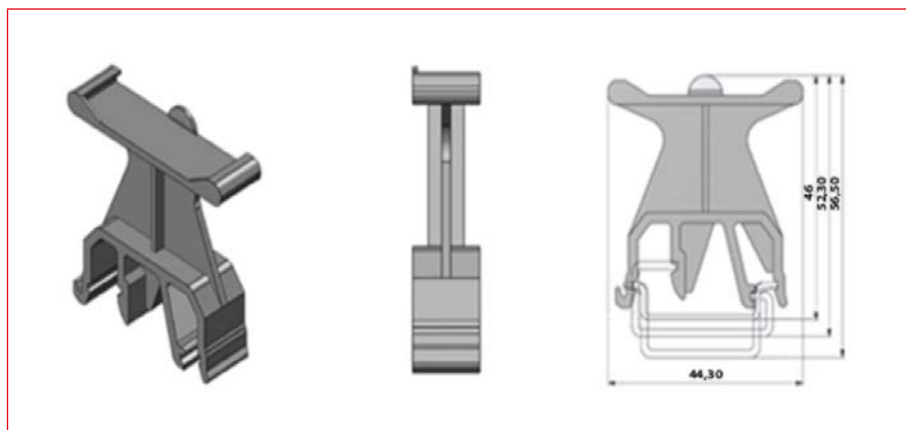


IK600998

█ Schrack-Info

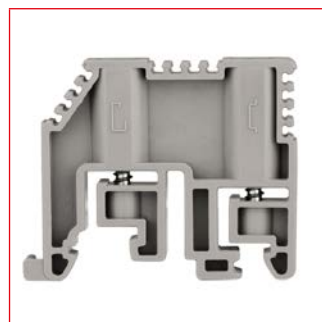
- Group tag holder **type GE**
- For G-rail TS 32 and DIN-rail TS 35

█ Dimensions Group Tag Holder IK600998 (mm)



DESCRIPTION	AVAILABLE	ORDER NO.
Group tag holder type GE grey		IK600998

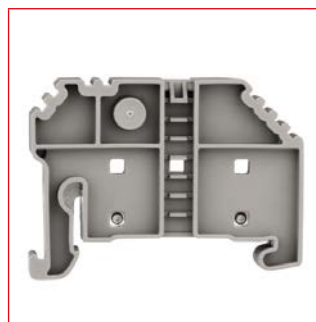
End Brackets for Spring Clamp Terminals



IK623000



IK623001



IK623002



IK600997

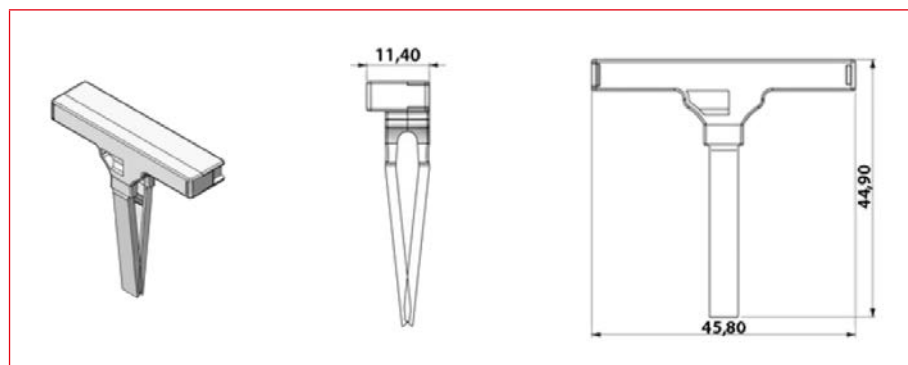


IK623002 + IK600997

Schrack-Info





- End brackets grey for spring clamp- and screw terminals IK6
- **Type WGD 1**
 - For G-rail TS 32 and DIN-rail TS 35
 - Snap fastening with screw fixing
- **Type KD 3**
 - For DIN-rail TS 35
 - Snap fastening with screw fixing
- **Type KD 4**
 - For DIN-rail TS 35
 - Snap fastening
 - Group tag holder IK600997 mountable

Dimensions Group Tag Holder IK600997 (mm)



Compatible and Recommended Marking Tags for End Brackets

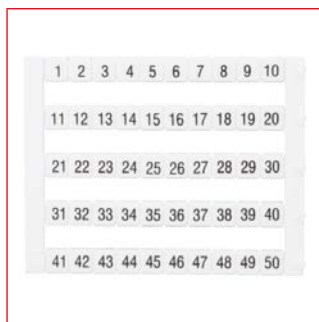
								
	50 Tags	30 Tags	30 Tags	40 Tags	44 Tags	36 Tags	26 Tags	20 Tags
Article number	IK6970xx	IK697910	IK697920	IK697930	IK697940	IK697950	IK697960	IK697970
Type	DY 5	DB 10/5	DB 10/6.5	DG 6/5	DG 10/5 T	DG 10/6 T	DG 10/8	DG 10/10
WGD 1	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
KD 3	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
KD 4	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-

DESCRIPTION	AVAILABLE	ORDER NO.
End bracket WGD 1 snappable and screwable for TS 32 and TS 35 rails		IK623000
End bracket KD 3 snappable and screwable for TS 35 rail		IK623001
End bracket KD 4 snappable for TS 35 rail		IK623002
Group tag holder for end bracket KD 4		IK600997

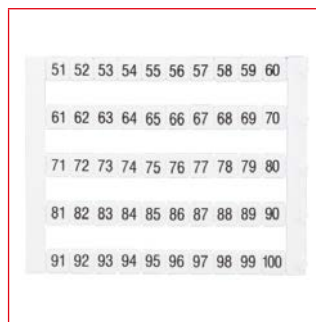
Marking Tags for Spring Clamp Terminals



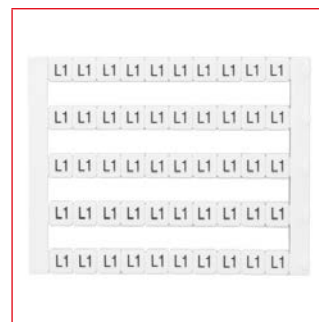
IK697020



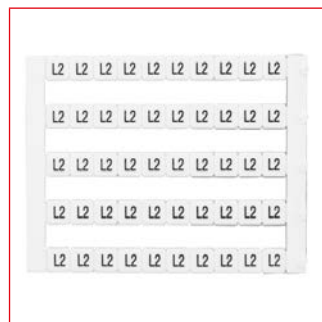
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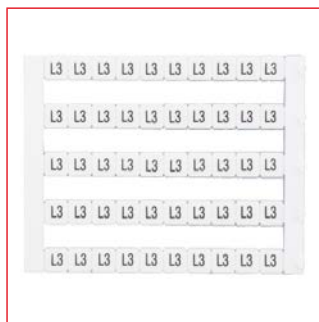
IK697041



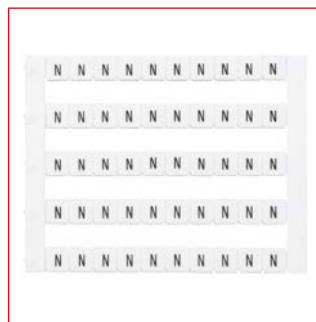
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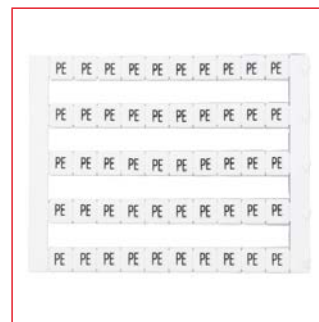
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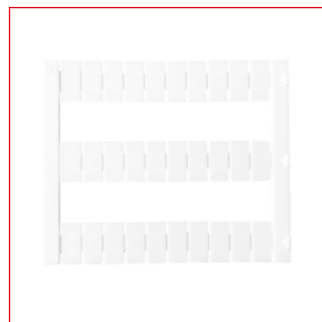
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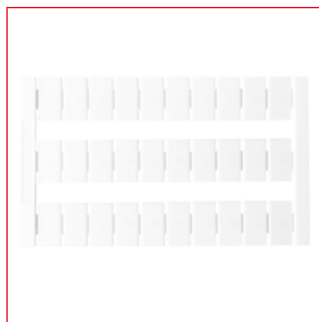
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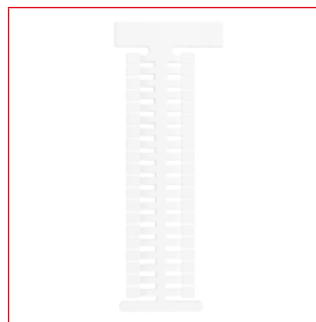
IK697094



IK697910



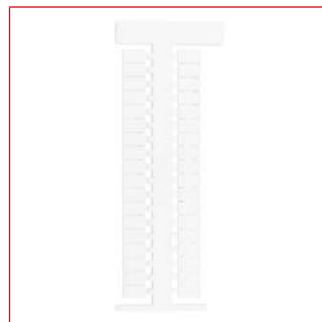
IK697920



IK697930



IK697940



IK697950



IK697960



IK697970











IK193901

Schrack-Info

- Printed and unprinted marking tags for spring clamp- and screw terminals IK6

Marking Tags for Spring Clamp Terminals

								
	50 Tags	30 Tags	30 Tags	40 Tags	44 Tags	36 Tags	26 Tags	20 Tags
Article number	IK6970xx	IK697910	IK697920	IK697930	IK697940	IK697950	IK697960	IK697970
Type	DY 5	DB 10/5	DB 10/6.5	DG 6/5	DG 10/5 T	DG 10/6 T	DG 10/8	DG 10/10
YBK 2.5	Compatible	Compatible	-	Compatible	Recommended	Compatible	-	-
YBK 4	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
YBK 6	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
YBK 10	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
YBK 2.5 T	Compatible	Compatible	-	Compatible	Recommended	Compatible	-	-
YBK 4 T	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
YBK 6 T	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended	-
YBK 10 T	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Recommended
YBK 2.5 E	Compatible	Compatible	-	Compatible	Recommended	-	-	-
YBK 2.5 C	Compatible	Compatible	-	Compatible	Recommended	-	-	-
YBK 2.5 CT	Compatible	Compatible	-	Compatible	Recommended	-	-	-
YBK 2.5 - 2 F	Compatible	-	-	Recommended	-	-	-	-
YBK 4 - 2 F	Compatible	Compatible	-	Compatible	Compatible	Recommended	-	-
YBK 2.5 - 3 F	Compatible	-	-	Recommended	-	-	-	-
YBK 2.5 - 2 FT	Compatible	-	-	Recommended	-	-	-	-
YBK 2.5 - 3 FT	Compatible	-	-	Recommended	-	-	-	-

Marking Tags for Spring Clamp Terminals

DESCRIPTION	AVAILABLE	ORDER NO.
DEKAFIX "DY 5" printed - Numbers		
"1" (50 times)		IK697001
"2" (50 times)		IK697002
"3" (50 times)		IK697003
"1-10" (5 times)		IK697020
"11-20" (5 times)		IK697021
"21-30" (5 times)		IK697022
"31-40" (5 times)		IK697023
"41-50" (5 times)		IK697024
"1-50" (1 time)		IK697040
"51-100" (1 time)		IK697041
"101-150" (1 time)		IK697042
"151-200" (1 time)		IK697043
"201-250" (1 time)		IK697044
"251-300" (1 time)		IK697045
"301-350" (1 time)		IK697046
"351-400" (1 time)		IK697047
DEKAFIX "DY 5" printed - Signs		
"L1" (50 times)		IK697090
"L2" (50 times)		IK697091
"L3" (50 times)		IK697092
"N" (50 times)		IK697093
"PE" (50 times)		IK697094
"+" (50 times)		IK697085
"-" (50 times)		IK697086
"X" (50 times)		IK697083
DEKAFIX "DB" and "DG" unprinted		
DB 10/5 (30 tags)		IK697910
DB 10/6.5 (30 tags)		IK697920
DG 6/5 (40 tags)		IK697930
DG 10/5 T (44 tags)		IK697940
DG 10/6 T (36 tags)		IK697950
DG 10/8 (26 tags)		IK697960
DG 10/10 (20 tags)		IK697970
Marker pens		
Marking pen red		IK198901
Marking pen black		IK193901



Order no. blue: on stock, usually ready for delivery on the day of order

▀ Screw Terminals CBC









IK110002















IK111002

▀ Schrack-Info

- Screw terminals series IK1
 - **CBC grey** from 2.5 to 35 mm²
 - **CBC blue** from 2.5 to 35 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For DIN-rails TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 12 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -40 °C to 80 °C

Type							
Article number		CBC.2	CBC.4	CBC.6	CBC.10	CBC.16	CBC.35
Screw terminal	Grey	IK110002	IK110004	IK110006	IK110010	IK110016	IK110035
Screw terminal	Blue	IK111002	IK111004	IK111006	IK111010	IK111016	IK111035
Dimension							
HxWxD	[mm]	52 x 5 x 44	52 x 6 x 44	52 x 8 x 44	52 x 10 x 44	56 x 12 x 47	63 x 16 x 56
Technical Data							
Terminal cross-section	[mm ²]	2.5	4	6	10	25	50
Solid wire	[mm ²]	0.2 - 4	0.2 - 6	0.2 - 10	1.5 - 16	1.5 - 25	2.5 - 50
Stranded wire	[mm ²]	0.2 - 4	0.2 - 6	0.2 - 10	1.5 - 16	1.5 - 25	2.5 - 50
Stranded wire with ferrule, max.	[mm ²]	2.5	4	6	10	16	35
Stripping length	[mm]	9	10		12	15	18
Tightening torque, min.	[Nm]	0.4	0.5	0.8	1.2	2.0	2.5
Tightening torque, max.	[Nm]	0.8	1.2	1.4	1.9	3.0	5.0
End plate							
End plate	Grey	IK110210				IK110216	IK110235
End plate	Blue	IK111210				IK111216	IK111235
Separation plate							
Separation plate	Red	IK108004					IK108005
Cross-connector							
Cross-connector	2-pole	IK200822	IK200842	IK200862	IK200802	IK200812	IK200832
Cross-connector	5-pole	IK200825	IK200845	IK200865	IK200805	-	-
Cross-connector	10-pole	IK200829	IK200849	IK200869	-	-	-
Cross-connector	25-pole	-	-	-	IK200809	-	-
Cross-connector	31-pole	-	-	IK200860	-	-	-
Cross-connector	42-pole	-	IK200840	-	-	-	-
Cross-connector	50-pole	IK200820	-	-	-	-	-
Cross-connection lug							
Cross-connection lug	16-pole	-	-	-	-	-	IK100406
Screw with spacer sleeve	1 pc. each	-	-	-	-	-	IK100606
End bracket							
BT/3, snappable and screwable		IK123000					
BTU, snappable		IK123001					
Marking tag							
Printed marking tag		IK190xxx or IK2972x1-A					
Unprinted marking tag		IK190030					
Marker strip							
Unprinted marker strip (1 m long)		IK190000					
Certificate							
CE (EN 60947-7-1)	[V~]	1000					
	[A]	32	41	57	76	101	150
	[mm ²]	4	6	10	16	25	50
UL	[V~]	600					
	[A]	20	30	50	65	100	125
	AWG	20 - 12	20 - 10	20 - 8	14 - 6	16 - 3	20 - 1

 Screw Terminals CBC

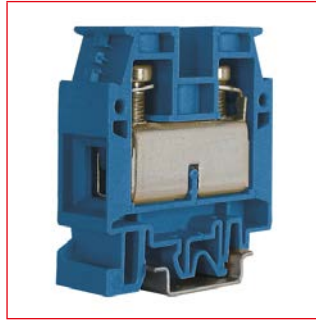
DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
Screw terminal 2.5 mm ²		IK 110002
Screw terminal 4 mm ²		IK 110004
Screw terminal 6 mm ²		IK 110006
Screw terminal 10 mm ²		IK 110010
Screw terminal 16 mm ²		IK 110016
Screw terminal 35 mm ²		IK 110035
Blue		
Screw terminal 2.5 mm ²		IK 111002
Screw terminal 4 mm ²		IK 111004
Screw terminal 6 mm ²		IK 111006
Screw terminal 10 mm ²		IK 111010
Screw terminal 16 mm ²		IK 111016
Screw terminal 35 mm ²		IK 111035



▀ Screw Terminals CBD



IK100050-A



IK101050











IK108007

▀ Schrack-Info

- Screw terminals series IK1
 - **CBD grey** from 50 to 70 mm²
 - **CBD blue** from 50 to 70 mm²
 - **CBD orange** 4 mm²
- Polyamide insulating material
- Flammability class VO according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -40 °C to 80 °C

 Screw Terminals CBD

Type				
		CBD 50	CBD 70	CBD 4
Article number				
Screw terminal	Grey	IK100050-A	IK100070-A	-
Screw terminal	Blue	IK101050	IK101070	-
Screw terminal	Orange	-	-	IK108007
Dimension				
HxWxD	[mm]	62 x 18 x 57	71 x 20.5 x 62	52 x 6.5 x 44
Technical Data				
Terminal cross-section	[mm ²]	50	70	4
Solid wire	[mm ²]	1 - 70	1 - 95	0.5 - 6
Stranded wire	[mm ²]	1.5 - 50	1.5 - 95	0.5 - 6
Stranded wire with ferrule, max.	[mm ²]	50	70	4
Stripping length	[mm]	22	26	14
Tightening torque, min.	[Nm]	2.5	3	0.5
Tightening torque, max.	[Nm]	5	8	1.2
End plate				
End plate	Grey	IK100250-A	IK100270-A	-
End plate	Blue	IK101250	IK101270	-
Separation plate				
Separation plate	Red	IK108005	IK108006	IK108004
Cross-connector				
Cross-connector			-	
Cross-connection lug				
Set with screws	2-pole	IK100507	IK100508	-
Cross-connection lug	12-pole	-	IK100408	-
Screw with spacer sleeve	1 pc. each		IK100608	-
Cross-connection lug	14-pole	IK100407	-	-
Screw with spacer sleeve	1 pc. each	IK100607		
End bracket				
BT/3, snappable and screwable			IK123000	
BTU, snappable			IK123001	
BT/DIN/PO, screwable			IK113000	
Marking tag				
Printed marking tag			IK190xxx or IK2972x1-A	
Unprinted marking tag			IK190030	
Marker strip				
Unprinted marker strip (1 m long)			IK190000	
Certificate				
CE (EN 60947-7-1)	[V-]		800	
	[A]	150	192	32
	[mm ²]	70	95	6
UL	[V-]		600	
	[A]	130	220	30
	AWG	16 - 1	12 - 4/0	20 - 10

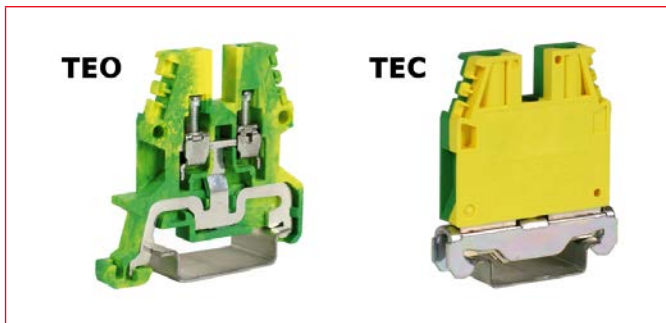
DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
Screw terminal 50 mm ²		IK100050-A
Screw terminal 70 mm ²		IK100070-A
Blue		
Screw terminal 50 mm ²		IK101050
Screw terminal 70 mm ²		IK101070
Orange		
Screw terminal 4 mm ²		IK108007



Order no. blue: on stock, usually ready for delivery on the day of order

Terminal Blocks Series IK1 and IK2

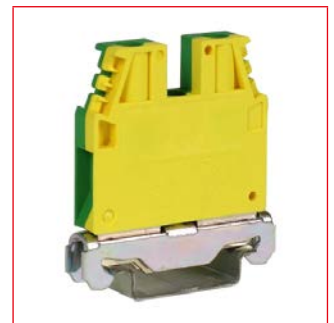
▀ Screw Earth Terminals TEO and TEC



TEO and TEC



IK122002














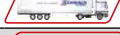
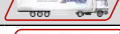

IK122010-A

▀ Schrack-Info

- Screw earth terminals series IK1
 - **TEO green/yellow** from 2.5 to 4 mm²
 - **TEC green/yellow** from 6 to 70 mm²
- Polyamide insulating material
- Flammability class VO according to UL 94
- For DIN-rail TS 32
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage:
 - TEO.2 and 4: 8 kV
 - TEC from 6 to 70: 12 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3



								
Type		TEO.2	TEO.4	TEC.6	TEC.10	TEC.16	TEC.35	TEC.70
Article number								
Screw terminal	Green / yellow	IK122002	IK122004-A	IK122006-A	IK122010-A	IK122016-A	IK122035-A	IK122070
Dimension								
HxWxD	[mm]	47 x 5.5 x 50	52 x 6.5 x 50	52 x 8 x 44	52 x 10 x 44	56 x 12 x 47	63 x 16 x 56	74 x 20.5 x 70
Technical Data								
Terminal cross-section	[mm ²]	2.5	4	6	10	16	35	70
Solid wire	[mm ²]	0.2 - 4	0.2 - 6	0.5 - 10	1.5 - 16	1.5 - 25	2.5 - 50	10 - 95
Stranded wire	[mm ²]	0.2 - 4	0.2 - 6	0.5 - 10	1.5 - 16	1.5 - 25	2.5 - 50	10 - 95
Stranded wire with ferrule, max.	[mm ²]	2.5	4	6	10	16	35	70
Stripping length	[mm]	12	14	10	12	18	18	25
Tightening torque, min.	[Nm]	0.4	0.5	0.8	1.2	2	2.5	6
Tightening torque, max.	[Nm]	0.8	1.2	1.4	1.9	3	5	9
End plate								
End plate	Green	IK122202	IK122204	-	-	-	-	-
Separation plate								
Separation plate	Red				-			
Cross-connector								
Cross-connector					-			
Cross-connection lug								
Cross-connection lug					-			
End bracket								
BT/3, snappable and screwable					IK123000			
BTU, snappable					IK123001			
BT/DIN/PO, screwable		-	-			IK113000		
Marking tag								
Printed marking tag					IK190xxx or IK2972x1-A			
Unprinted marking tag					IK190030			
Marker strip								
Unprinted marker strip (1 m long)					IK190000			
Certificate								
CE (EN 60947-7-1)	[V~]							
	[A]	-	-	41	57	76	125	192
	[mm ²]	4	6	10	16	25	50	95
UL	[V~]							
	[A]							
	AWG	20 - 14	20 - 12	-	-	-	-	-

DESCRIPTION	AVAILABLE	ORDER NO.
Series TEO		
Screw earth terminal 2.5 mm ² green/yellow		IK122002
Screw earth terminal 4 mm ² green/yellow		IK122004-A
Series TEC		
Screw earth terminal 6 mm ² green/yellow		IK122006-A
Screw earth terminal 10 mm ² green/yellow		IK122010-A
Screw earth terminal 16 mm ² green/yellow		IK122016-A
Screw earth terminal 35 mm ² green/yellow		IK122035-A
Screw earth terminal 70 mm ² green/yellow		IK122070



Order no. blue: on stock, usually ready for delivery on the day of order

Terminal Blocks Series IK1 and IK2

Disconnect Terminals MPS



IK130004-A



IK131004-A

Schrack-Info

- Disconnect terminals series IK1
 - **MPS beige and blue** 4 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 6 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3



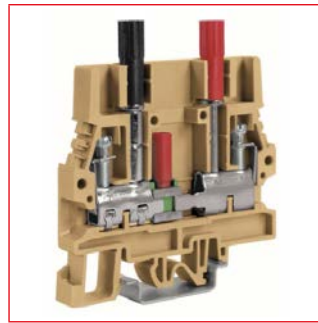
Type		MPS.4
Article number		
Disconnect terminal	Beige	IK130004-A
Disconnect terminal	Blue	IK131004-A
Dimension		
HxWxD	[mm]	47 x 6 x 47
Technical Data		
Connection type		screw terminal
Terminal cross-section	[mm ²]	4
Solid wire	[mm ²]	0.2 - 6
Stranded wire	[mm ²]	0.2 - 6
Stranded wire with ferrule, max.	[mm ²]	4
Stripping length	[mm]	9
Tightening torque, min.	[Nm]	0.5
Tightening torque, max.	[Nm]	1,2
End plate		
End plate	Grey	IK100250-A
End plate	Blue	-
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector	2-pole	IK200842
Cross-connector	5-pole	IK200845
Cross-connector	10-pole	IK200849
Cross-connector	42-pole	IK200840
Cross-connection lug		
Cross-connection lug		-
End bracket		
BT/3, snappable and screwable		IK123000
BTU, snappable		IK123001
BT/DIN/PO, screwable		IK113000
Marking tag		
Printed marking tag		IK190xxx or IK2972x1-A
Unprinted marking tag		IK190030
Marker strip		
Unprinted marker strip (1 m long)		IK190000
Certificate		
	[V~]	400
CE (EN 60947-7-1)	[A]	24
	[mm ²]	6
	[V~]	600
UL	[A]	24
	AWG	26 - 10

DESCRIPTION	AVAILABLE	ORDER NO.
Disconnect terminal 4 mm ² beige		IK130004-A
Disconnect terminal 4 mm ² blue		IK131004-A

Test-Disconnect Terminals SCB





IK171006


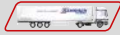


IK170006

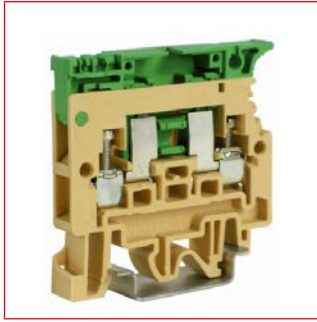
Schrack-Info

- Test-disconnect terminals series IK1
 - **SCB.6 and SCB.6/CD beige** 6 mm²
- SCB.6/CD with sockets for test plugs
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3

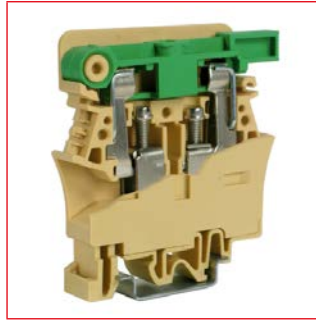
			
Type		SCB.6	SCB.6/CD
Article number			
Test-disconnect terminal	Beige	IK171006	IK170006
Dimension			
HxWxD	[mm]	65 x 8 x 69	77 x 8 x 69
Technical Data			
Connection type			screw terminal
Terminal cross-section	[mm ²]		6
Solid wire	[mm ²]		0.5 - 10
Stranded wire	[mm ²]		0.5 - 10
Stranded wire with ferrule, max.	[mm ²]		6
Stripping length	[mm]		12
Tightening torque, min.	[Nm]		0.8
Tightening torque, max.	[Nm]		1.4
End plate			
End plate	Beige		IK170200
Separation plate			
Separation plate	Red		IK108006
Cross-connector			
Cross-connector	2-pole		IK100520
Cross-connector	4-pole		IK100540
Cross-connection lug			
Cross-connection lug			-
End bracket			
BT/3, snappable and screwable			IK123000
BTU, snappable			IK123001
BT/DIN/PO, screwable			IK113000
Marking tag			
Printed marking tag			IK190xxx or IK2972x1-A
Unprinted marking tag			IK190030
Marker strip			
Unprinted marker strip (1 m long)			IK190000
Certificate			
CE (EN 60947-7-1)	[V~]		800
	[A]		41
	[mm ²]		10
UL	[V~]	600	-
	[A]	47	-
	AWG	20 - 8	-

DESCRIPTION	AVAILABLE	ORDER NO.
Test-disconnect terminal 6 mm ² beige		IK171006
Test-disconnect terminal with sockets for test plugs 6 mm ² beige		IK170006

■ Fuse Terminals SFR.4 and FPC.10



IK141004







IK141010

■ Schrack-Info

- Fuse terminals series IK1
 - **SFR.4 beige**: 4 mm²
 - **FPC.10 beige**: 10 mm²
- SFR.4 compatible with
 - G fuses: 5x20 mm
 - 1 A diodes: Types from 1N4001 to 1N4007
 - 3 A diodes: Type BY 255
(not included)
- FPC.10 compatible with
 - G fuses: 6.3 x 32 mm
(not included)
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 6 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3

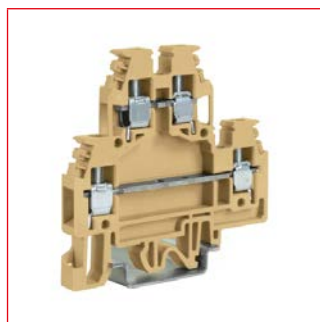
 Fuse Terminals SFR.4 and FPC.10

Type			
Article number		IK141004	IK141010
Fuse terminal	Beige		
Dimension			
HxWxD	[mm]	52 x 8 x 52	70 x 12 x 63
Technical Data			
Connection type		screw terminal	
Terminal cross-section	[mm ²]	4	10
Solid wire	[mm ²]	0.2 - 6	1.5 - 16
Stranded wire	[mm ²]	0.2 - 6	1.5 - 16
Stranded wire with ferrule, max.	[mm ²]	4	10
Stripping length	[mm]	11	17
Tightening torque, min.	[Nm]	0.5	1.2
Tightening torque, max.	[Nm]	1.2	1.9
Compatible LED	1A 3A	Types 1N4001 - 1N4007 Type BY 255	- -
Compatible fuse		Type G, Ø 5x20 mm	Type G, Ø 6.3x32 mm
End plate			
End plate	Beige	IK131204	Terminal closed on both sides
Separation plate			
Separation plate	Red	-	IK108006
Cross-connector			
Cross-connector		-	
Cross-connection lug			
Cross-connection lug		-	
End bracket			
BT/3, snappable and screwable		IK123000	
BTU, snappable		IK123001	
BT/DIN/PO, screwable		IK113000	
Marking tag			
Printed marking tag		IK190xxx or IK2972x1-A	
Unprinted marking tag		IK190030	
Marker strip			
Unprinted marker strip (1 m long)		IK190000	
Certificate			
CE (EN 60947-7-1)	[V~]	800	
	[A]	6.3	10
	[mm ²]	6	16
UL	[V~]	600	
	[A]	6.3	15
	AWG	20 - 12	20 - 6

DESCRIPTION	AVAILABLE	ORDER NO.
Fuse terminal 4 mm ² beige		IK141004
Fuse terminal 10 mm ² beige		IK141010



Two-Level Terminal DAS.4




IK150004-A

Schrack-Info

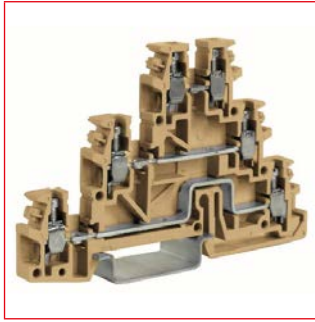
- Two-level terminal series IK1
- - **DAS beige** 4 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
- - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3
- Temperature resistance from -40 °C to 80 °C



Type		DAS.4
Article number		
Two-level terminal	Beige	IK150004-A
Dimension		
HxWxD	[mm]	62 x 6 x 64
Technical Data		
Connection type		screw terminal
Terminal cross-section	[mm ²]	4
Solid wire	[mm ²]	0.2 - 6
Stranded wire	[mm ²]	0.2 - 6
Stranded wire with ferrule, max.	[mm ²]	4
Stripping length	[mm]	9
Tightening torque, min.	[Nm]	0.5
Tightening torque, max.	[Nm]	1.2
End plate		
End plate	Beige	IK150204-A
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector		-
Cross-connection lug		
Cross-connection lug	42-pole	IK100458
Screw with spacer sleeve	1 pc. each	IK100601
End bracket		
BT/3, snappable and screwable		IK123000
BTU, snappable		IK123001
BT/DIN/PO, screwable		IK113000
Marking tag		
Printed marking tag		IK190xxx or IK2972x1-A
Unprinted marking tag		IK190030
Marker strip		
Unprinted marker strip (1 m long)		IK190000
Certificate		
CE (EN 60947-7-1)	[V~]	630
	[A]	32
	[mm ²]	6
UL	[V~]	600
	[A]	20
	AWG	20 - 12

DESCRIPTION	AVAILABLE	ORDER NO.
Two-level terminal 4 mm ² beige		IK150004-A

Three-Level Terminal TLD.2 and TDE.2





IK180001


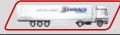


IK180002

Schrack-Info

- Three-level terminals series IK1
 - **TLD.2 beige** (L/L/L): 2.5 mm²
 - **TDE.2 beige** (L/L/PE): 2.5 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 4 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3

Type			
		TLD.2 (L/L/L)	TDE.2 (L/L/PE)
Article number			
Fuse terminal	Beige	IK180001	IK180002
Dimension			
HxWxD	[mm]	52 x 6.2 x 85	
Technical Data			
Connection type		screw terminal	
Terminal cross-section	[mm ²]	2.5	
Solid wire	[mm ²]	0.2 - 4	
Stranded wire	[mm ²]	0.2 - 4	
Stranded wire with ferrule, max.	[mm ²]	2.5	
Stripping length	[mm]	8	
Tightening torque, min.	[Nm]	0.4	
Tightening torque, max.	[Nm]	0.8	
End plate			
End plate	Beige	IK180201	
Separation plate			
Separation plate	Red	-	
Cross-connector			
Cross-connector		-	
Cross-connection lug			
Cross-connection lug with screws and spacer sleeves	10-pole	IK100816	
End bracket			
BT/3, snappable and screwable		IK123000	
BTU, snappable		IK123001	
Marking tag			
Printed marking tag		IK190xxx or IK2972x1-A	
Unprinted marking tag		IK190030	
Marker strip			
Unprinted marker strip (1 m long)		IK190000	
Certificate			
CE (EN 60947-7-1)	[V-]	250	
	[A]	24	
	[mm ²]	4	
UL	[V-]	600	
	[A]	15	20
	AWG	20 - 12	

DESCRIPTION	AVAILABLE	ORDER NO.
Three-level terminal 2.5 mm ² (L/L/L) beige		IK180001
Three-level terminal 2.5 mm ² (L/L/PE) beige		IK180002



Order no. blue: on stock, usually ready for delivery on the day of order

Three-Level Terminal for Sensors TLS.2




IK180000

Schrack-Info

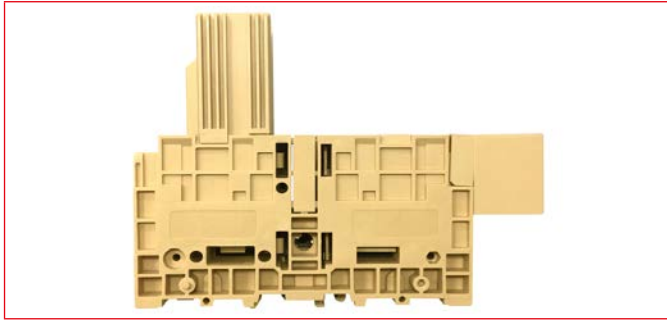
- Three-level terminal for sensors series IK1
 - **TLS.2 beige** (L/L/L): 2.5 mm²
- Suitable for LED connection
- The middle and lower terminal can be used for the supply of sensors with DC voltage
- Connection of positive and negative poles without the use of any other cross-connectors possible
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 4 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3



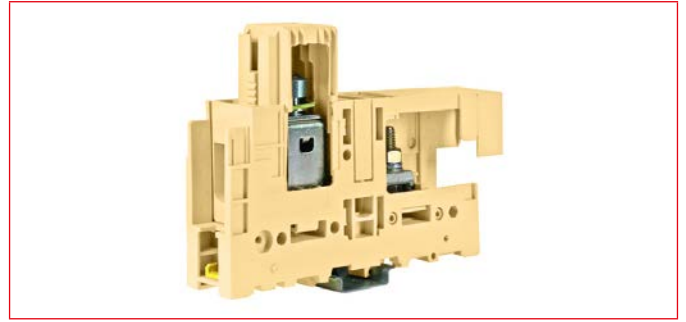
Type		TLS.2 (L/L/L)
Article number		
Three-level terminal for sensors	Beige	IK180000
Dimension		
HxWxD	[mm]	52 x 6.2 x 62,5
Technical Data		
Connection type		screw terminal
Terminal cross-section	[mm ²]	2.5
Solid wire	[mm ²]	0.2 - 4
Stranded wire	[mm ²]	0.2 - 4
Stranded wire with ferrule, max.	[mm ²]	2,5
Stripping length	[mm]	8
Tightening torque, min.	[Nm]	0.4
Tightening torque, max.	[Nm]	0.8
End plate		
End plate	Beige	IK180200
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector		-
Cross-connection lug		
Cross-connection lug with screws and spacer sleeves	10-pole	IK100816
End bracket		
BT/3, snappable and screwable		IK123000
BTU, snappable		IK123001
Marking tag		
Printed marking tag		IK190xxx or IK2972x1-A
Unprinted marking tag		IK190030
Marker strip		
Unprinted marker strip (1 m long)		IK190000
Certificate		
CE (EN 60947-7-1)	[V-]	250
	[A]	24
	[mm ²]	4
UL	[V-]	600
	[A]	15
	AWG	20 - 12

DESCRIPTION	AVAILABLE	ORDER NO.
Three-level terminal for sensors 2.5 mm ² (L/L/L) beige		IK180000

High Current Terminal GPM.150



IK160000



IK160000



IK160000



IK160000



IK160000



IK160000

Schrack-Info


- High current terminal series IK1
 - **GPM.150 beige:** 150 mm²
- 8 mm Allen screw connection
- 17 mm threaded connection for cable lug M10
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For mounting rails TS 32 and TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 12 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3

Terminal Blocks Series IK1 and IK2

High Current Terminal GPM.150



Type		GPM.150
Article number		
High current terminal	Beige	IK160000
Dimension		
HxWxD	[mm]	134 x 42 x 170
Technical Data		
Connection type		screw terminal
Terminal cross-section	[mm ²]	150
Solid wire	[mm ²]	35 - 185
Stranded wire	[mm ²]	50 - 185
Suitable cable lug		max. width 32 mm (M10)
Stripping length	[mm]	35
Tightening torque - Allen screw connection (8 mm Allen key)		Tested 10 Recommended 15
Tightening torque - Threaded connection (17 mm wrench)		Tested 10 Recommended 15
End plate		
End plate	Beige	Terminal closed on both sides
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector		-
Cross-connection lug		
Cross-connection lug		-
End bracket		
BT/3, snappable and screwable		IK123000
BTU, snappable		IK123001
Marking tag		
Printed marking tag		IK190xxx or IK2972x1-A
Unprinted marking tag		IK190030
Certificate		
CE (EN 60947-7-1)	[V~]	1000
	[A]	353
	[mm ²]	185
UL	[V~]	-
	[A]	-
	AWG	-

DESCRIPTION	AVAILABLE	ORDER NO.
High current terminal 150 mm ² beige		IK160000

End Plates for Screw Terminals



IK110210



IK111210



IK122202



IK131204

Schrack-Info

- End plates for screw terminals IK1
 - CBC from .2 to .35
 - CBD.50 and 70
 - TEO.2 and 4
 - MPS.4
 - SCB.6
 - SFR.4
 - DAS.4
 - TLD.2 and TDE.2
 - TLS.2

DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
End plate for CBC.2, 4, 6 and 10		IK110210
End plate for CBC.16		IK110216
End plate for CBC.35		IK110235
End plate for CBD.50		IK100250-A
End plate for CBD.70		IK100270-A
Blue		
End plate for CBC.2, 4, 6 and 10		IK111210
End plate for CBC.16		IK111216
End plate for CBC.35		IK111235
End plate for CBD.50		IK101250
End plate for CBD.70		IK101270
Green		
End plate for TEO.2		IK122202
End plate for TEO.4		IK122204
Beige		
End plate for MPS.4		IK130204-A
End plate for SCB.6 and SCB.6/CD		IK170200
End plate for SFR.4		IK131204
End plate for DAS.4		IK150204-A
End plate for TLD.2 and TDE.2		IK180201
End plate for TLS.2		IK180200



Order no. blue: on stock, usually ready for delivery on the day of order

Terminal Blocks Series IK1 and IK2

Cross-Connectors for Screw Terminals



IK200822



IK200829



IK100520



IK200802

Schrack-Info

- Cross-connectors for screw terminals IK1 from 2.5 mm² to 35 mm²

Example: Cross-connection and staggered contact connection

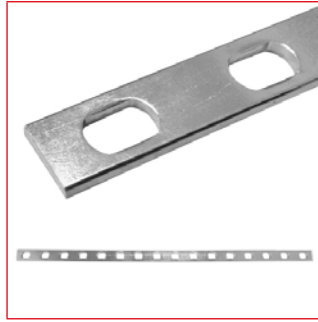


DESCRIPTION	AVAILABLE	ORDER NO.
Cross-Connectors 2.5 mm²		
2-pole for CBC.2		IK200822
5-pole for CBC.2		IK200825
10-pole for CBC.2		IK200829
50-pole for CBC.2		IK200820
Cross-Connectors 4 mm²		
2-pole for CBC.4 and MPS.4		IK200842
5-pole for CBC.4 and MPS.4		IK200845
10-pole for CBC.4 and MPS.4		IK200849
42-pole for CBC.4 and MPS.4		IK200840
Cross-Connectors 6 mm²		
2-pole for CBC.6		IK200862
5-pole for CBC.6		IK200865
10-pole for CBC.6		IK200869
31-pole for CBC.6		IK200860
2-pole for SCB.6 and SCB.6/CD		IK100520
4-pole for SCB.6 and SCB.6/CD		IK100540
Cross-Connectors 10 mm²		
2-pole for CBC.10		IK200802
5-pole for CBC.10		IK200805
25-pole for CBC.10		IK200809
Cross-Connectors 16 mm²		
2-pole for CBC.16		IK200812
Cross-Connectors 35 mm²		
2-pole for CBC.35		IK200832

■ Cross-Connection Lugs for Screw Terminals



IK100816



IK100406



IK100606



IK100507

■ Schrack-Info

- Various cross-connection lugs for screw terminals IK1

DESCRIPTION	AVAILABLE	ORDER NO.
Cross-Connection Lug 2.5 mm²		
10-pole for TLD.2, TDE.2 and TLS.2		IK100816
Cross-Connection Lug 4 mm²		
42-pole for DAS.4		IK100458
Screw and spacer sleeve (1 piece each) for DAS.4		IK100601
Cross-Connection Lug 35 mm²		
16-pole for CBC.35		IK100406
Screw and spacer sleeve (1 piece each) for CBC.35		IK100606
Cross-Connection Lugs 50 mm²		
2-pole set with screws and spacer sleeves (2 pieces each) for CBD.50		IK100507
14-pole for CBD.50		IK100407
Screw and spacer sleeve (1 piece each) for CBD.50		IK100607
Cross-Connection Lugs 70 mm²		
2-pole set with screws and spacer sleeves (2 pieces each) for CBD.70		IK100508
12-pole for CBD.70		IK100408
Screw and spacer sleeve (1 piece each) for CBD.70		IK100608

■ Separation Plates for Screw Terminals



IK108004

■ Schrack-Info

- Various separation plates red for screw terminals IK1

DESCRIPTION	AVAILABLE	ORDER NO.
Separation plate for CBC.2, 4, 6, 10, 16 and CBD.4 red		IK108004
Separation plate for CBC.35 and CBD.50 red		IK108005
Separation plate for CBD.70, FPC.10, SCB.6 and SCB.6/CD red		IK108006



Order no. blue: on stock, usually ready for delivery on the day of order

Socket for Test Plug for Disconnect Test Terminal SCB.6



IK100521

Schrack-Info

- Socket for test plugs of measuring instruments
- Type SCB/6/CPM
- Compatible with terminal type SCB.6

DESCRIPTION	AVAILABLE	ORDER NO.
Socket for test plug for disconnect terminal SCB.6 black		IK100521

End Brackets for Screw Terminals



IK123000



IK123001



IK113000



IK199999



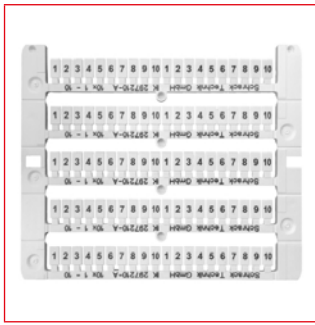
IK113000 + IK199999

Schrack-Info

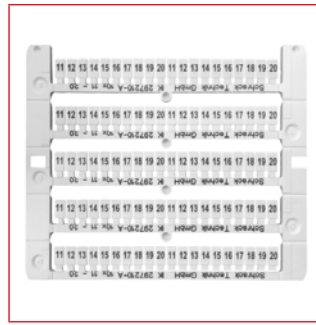
- End brackets black for screw terminals IK1 and spring clamp terminals IK2
- **Type BT/3**
 - For DIN-rails TS 35
 - Snap fastening with screw fixing
- **Type BTU**
 - For mounting rails TS 32 and TS 35
 - Snap fastening
- **Type BT/DIN/PO**
 - For G-rail TS 35
 - Screw fixing
- Group tag holder IK199999 compatible with all listed end brackets

DESCRIPTION	AVAILABLE	ORDER NO.
End bracket BT/3 snappable and screwable for TS 35 rail		IK123000
End bracket BTU snappable for TS 32 and TS 35 rails		IK123001
End bracket BT/DIN/PO screwable for TS 32 rail		IK113000
Group tag holder for end brackets BT/3, BTU and BT/DIN/PO		IK199999

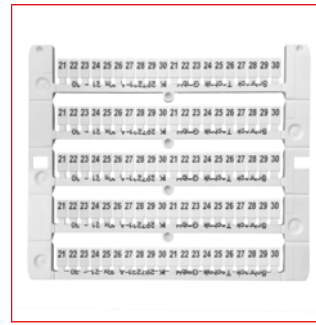
Marking Tags for Screw Terminals



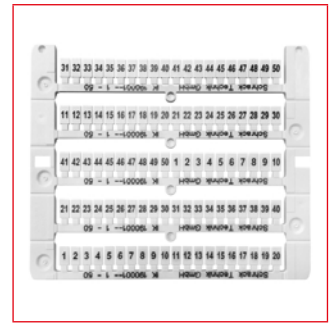
IK297210-A



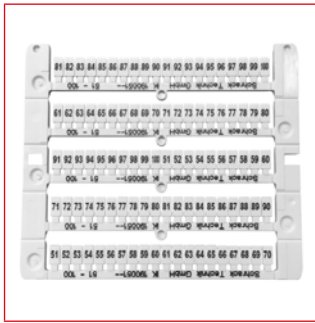
IK297211-A



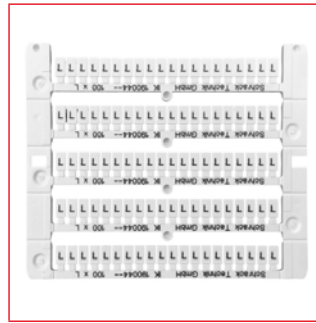
IK297221-A



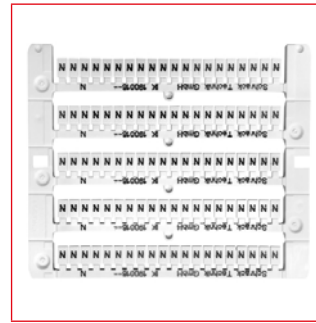
IK190001



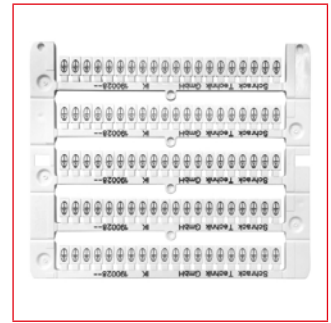
IK190051



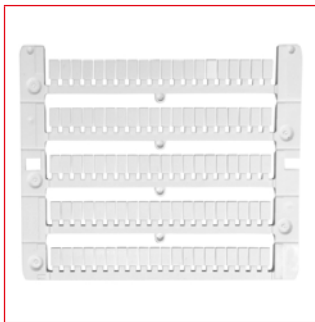
IK190044



IK190016



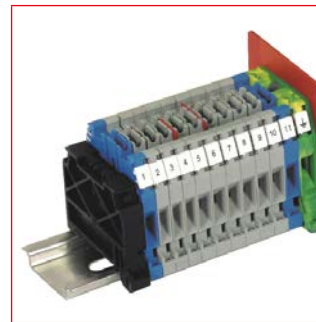
IK190028



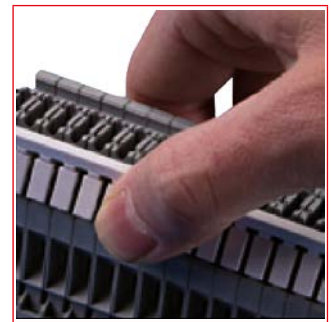
IK190030



IK193901



Mounting example with single tags

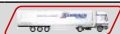

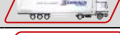

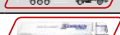



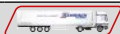

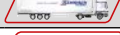





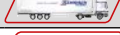
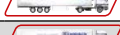




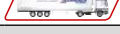


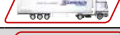



Mounting example as a whole strip

Schrack-Info

- Printed and unprinted marking tags for screw terminals IK1 and spring clamp terminals IK2

Marking Tags for Screw Terminals

DESCRIPTION	AVAILABLE	ORDER NO.
Printed - Numbers		
"1-10" (10 times)		IK297210-A
"11-20" (10 times)		IK297211-A
"21-30" (10 times)		IK297221-A
"31-40" (10 times)		IK297231-A
"41-50" (10 times)		IK297241-A
"51-60" (10 times)		IK297251-A
"61-70" (10 times)		IK297261-A
"71-80" (10 times)		IK297271-A
"81-90" (10 times)		IK297281-A
"91-100" (10 times)		IK297291-A
"1-50" (2 times)		IK190001
"51-100" (2 times)		IK190051
"101-150" (2 times)		IK190101
"151-200" (2 times)		IK190151
"201-250" (2 times)		IK190201
"251-300" (2 times)		IK190251
"301-350" (2 times)		IK190301
"351-400" (2 times)		IK190351
"401-450" (2 times)		IK190401
"451-500" (2 times)		IK190451
Printed - Signs		
"L" (100 times)		IK190044
"L1" (100 times)		IK190002
"L2" (100 times)		IK190003
"L3" (100 times)		IK190004
"N" (100 times)		IK190016
"PE" (100 times)		IK190040
"Earth symbol" (100 times)		IK190028
"+" (100 times)		IK190023
"-" (100 times)		IK190024
"U" (100 times)		IK190017
"V" (100 times)		IK190018
"W" (100 times)		IK190019
"Z" (100 times)		IK190022
Unprinted		
Unprinted (100 times)		IK190030
Marker pens		
Marking pen black		IK193901
Marking pen red		IK198901


Marker Strips for Screw Terminals



IK190000

Schrack-Info

- Marker strip for continuous, individual marking of screw terminals IK1
- Material: white PVC
- Length: 1 m

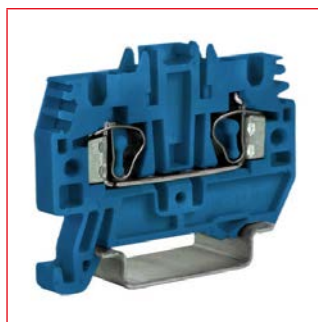
DESCRIPTION	AVAILABLE	ORDER NO.
Marker strip for screw terminals IK1, 1 m long, white		IK190000



Spring Clamp Terminals HMM



IK200002-C



IK201002-A

Schrack-Info

- Spring clamp terminals series IK2
 - **HMM grey:** from 2.5 to 6 mm²
 - **HMM blue:** from 2.5 to 6 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3

Type		HMM.2	HMM.4	HMM.6
Article number				
Spring clamp terminal	Grey	IK200002-C	IK200004-C	IK200006-C
Spring clamp terminal	Blue	IK201002-A	IK201004	IK201006
Dimension				
HxWxD	[mm]	41 x 5.2 x 50	45 x 6.2 x 58	44 x 8.2 x 62
Technical Data				
Terminal cross-section	[mm ²]	2.5	4	6
Solid wire	[mm ²]	0.2 - 4	0.2 - 6	0.2 - 10
Stranded wire	[mm ²]	0.2 - 4	0.2 - 6	0.2 - 10
Stranded wire with ferrule, max.	[mm ²]	2.5	4	6
Stripping length	[mm]	13	17	18
End plate				
End plate	Grey	IK200202-C	IK200204-C	IK200206-C
End plate	Blue	IK201202-A	IK201204	-
Separation plate				
Separation plate	Red		-	
Cross-connector				
Cross-connector	2-pole	IK200502-A	IK200504	-
Cross-connector	47-pole	IK200547	-	-
Cross-connection lug				
Cross-connection lug			-	
End bracket				
BT/3, snappable and screwable			IK123000	
BTU, snappable			IK123001	
Marking tag				
Printed marking tag			IK190xxx or IK2972x1-A	
Unprinted marking tag			IK190030	
Marker strip				
Unprinted marker strip (20 tags)			IK297200	
Certificate				
CE (EN 60947-7-1)	[V-]		800	
	[A]	24	32	41
	[mm ²]	4	6	10
UL	[V-]		600	
	[A]	20	30	41
	AWG	24 - 12	24 - 10	24 - 8

DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
Spring clamp terminal 2.5 mm ²		IK200002-C
Spring clamp terminal 4 mm ²		IK200004-C
Spring clamp terminal 6 mm ²		IK200006-C
Blue		
Spring clamp terminal 2.5 mm ²		IK201002-A
Spring clamp terminal 4 mm ²		IK201004
Spring clamp terminal 6 mm ²		IK201006




Spring Clamp Earth Terminals HTE






IK222002

Schrack-Info

- Spring clamp earth terminals series IK2
 - **HTE green/yellow**: from 2.5 to 6 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3

Type				
Article number		HTE.2	HTE.4	HTE.6
Spring clamp terminal	Green / yellow	IK222002	IK222004	IK222006
Dimension				
HxWxD	[mm]	41 x 5.2 x 54	45 x 6.2 x 58	44 x 8.2 x 62
Technical Data				
Terminal cross-section	[mm ²]	2.5	4	6
Solid wire	[mm ²]	0.2 - 4	0.2 - 6	0.2 - 10
Stranded wire	[mm ²]	0.2 - 4	0.2 - 6	0.2 - 10
Stranded wire with ferrule, max.	[mm ²]	2.5	4	6
Stripping length	[mm]	13	17	18
End plate				
End plate	Green	-	-	IK222006
Separation plate				
Separation plate	Red		-	
Cross-connector				
Cross-connector	2-pole	IK200502-A	IK200504	-
Cross-connector	47-pole	IK200547	-	-
Cross-connection lug				
Cross-connection lug			-	
End bracket				
BT/3, snappable and screwable			IK123000	
BTU, snappable			IK123001	
Marking tag				
Printed marking tag			IK190xxx or IK2972x1-A	
Unprinted marking tag			IK190030	
Marker strip				
Unprinted marker strip (20 tags)			IK297200	
Certificate				
CE (EN 60947-7-1)	[V~]		-	
	[A]		-	
	[mm ²]	4	6	10
UL	[V~]		-	
	[A]		-	
	AWG	24 - 12	24 - 10	24 - 8

DESCRIPTION	AVAILABLE	ORDER NO.
Spring clamp earth terminal 2.5 mm ² green/yellow		IK222002
Spring clamp earth terminal 4 mm ² green/yellow		IK222004
Spring clamp earth terminal 6 mm ² green/yellow		IK222006



Order no. blue: on stock, usually ready for delivery on the day of order

Distribution Terminal HMM.2/2+2



IK800002-C

Schrack-Info

- Distribution terminal series IK2
 - **HMM.2/2+2 grey** (2 inputs/ 2 outputs): 2.5 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3



Type		HMM.2/2+2
Article number		
Distribution terminal	Grey	IK800002-C
Dimension		
HxWxD	[mm]	41 x 5.2 x 82
Technical Data		
Connection type		spring clamp terminal
Terminal cross-section	[mm ²]	2.5
Solid wire	[mm ²]	0.2 - 4
Stranded wire	[mm ²]	0.2 - 4
Stranded wire with ferrule, max.	[mm ²]	2.5
Stripping length	[mm]	13
End plate		
End plate	Grey	IK800202-C
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector	2-pole	IK200502-A
Cross-connector	47-pole	IK200547
Cross-connection lug		
Cross-connection lug		-
End bracket		
BT/3, snappable and screwable		IK123000
BTU, snappable		IK123001
Marking tag		
Printed marking tag		IK190xxx or IK2972x1-A
Unprinted marking tag		IK190030
Marker strip		
Unprinted marker strip (20 tags)		IK297200
Certificate		
CE (EN 60947-7-1)	[V~]	800
	[A]	24
	[mm ²]	4
UL	[V~]	600
	[A]	20
	AWG	24 - 12

DESCRIPTION	AVAILABLE	ORDER NO.
Distribution terminal 2.5 mm ² (2 inputs/2 outputs) grey		IK800002-C

Two-Level Terminal HMD.2N



IK250002-C

Schrack-Info

- Two-level terminal series IK2
 - **HMD.2N grey**: 2.5 mm²
- Polyamide insulating material
- Flammability class V0 according to UL 94
- For DIN-rail TS 35
- Suitable for aluminium conductors
 - proper connection technology provided
- Rated surge voltage 8 kV
- Insulating material group I
- Overvoltage category III
- Pollution degree 3



Type		HMD.2N
Article number		
Two-level terminal	Grey	IK250002-C
Dimension		
HxWxD	[mm]	59 x 5.2 x 73
Technical Data		
Connection type		spring clamp terminal
Terminal cross-section	[mm ²]	2.5
Solid wire	[mm ²]	0.2 - 2.5
Stranded wire	[mm ²]	0.2 - 2.5
Stranded wire with ferrule, max.	[mm ²]	1.5
Stripping length	[mm]	10
End plate		
End plate	Grey	IK250202-C
Separation plate		
Separation plate	Red	-
Cross-connector		
Cross-connector	2-pole	IK200502-A
Cross-connector	47-pole	IK200547
Cross-connection lug		
Cross-connection lug		-
End bracket		
BT/3, snappable and screwable		IK123000
BTU, snappable		IK123001
Marking tag		
Printed marking tag		IK190xxx or IK2972x1-A
Unprinted marking tag		IK190030
Marker strip		
Unprinted marker strip (20 tags)		IK297200
Certificate		
CE (EN 60947-7-1)	[V~]	630
	[A]	24
	[mm ²]	2.5
UL	[V~]	600
	[A]	15
	AWG	26 - 14

DESCRIPTION	AVAILABLE	ORDER NO.
Two-level terminal 2.5 mm ² grey		IK250002-C



Terminal Blocks Series IK1 and IK2

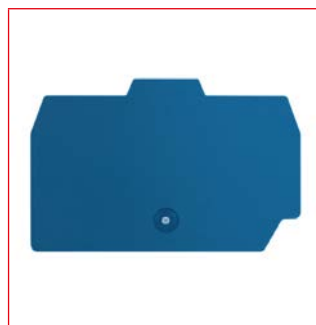
End Plates for Spring Clamp Terminals



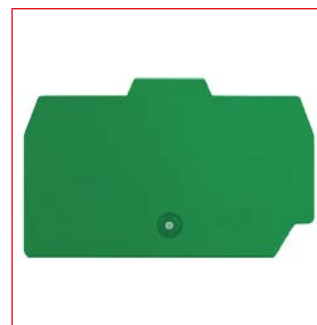
IK200202-C



IK800202-C



IK201202-A



IK222206

Schrack-Info

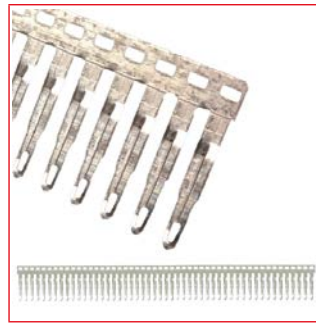
- End plates for spring clamp terminals IK2
 - HMM from .2 to 6 grey
 - HMM.2 and 4 blue
 - HTE.6 green
 - HMM.2/2+2
 - HMD.2N

DESCRIPTION	AVAILABLE	ORDER NO.
Grey		
End plate for HMM.2		IK200202-C
End plate for HMM.4		IK200204-C
End plate for HMM.6		IK200206-C
End plate for HMM.2/2+2		IK800202-C
End plate for HMD.2N		IK250202-C
Blue		
End plate for HMM.2		IK201202-A
End plate for HMM.4		IK201204
Green		
End plate for HTE.6		IK222206

■ Cross-Connectors for Spring Clamp Terminals



IK200502-A



IK200547



IK200504

■ Schrack-Info

- Cross-connectors for spring clamp terminals IK2 from 2.5 mm² and 4 mm²

■ Example: Cross-connection and staggered contact connection



DESCRIPTION	AVAILABLE	ORDER NO.
Cross-Connectors 2.5 mm²		
2-pole for HMM.2, HTE.2, HMM.2/2+2 and HMD.2N		IK200502-A
47-pole for HMM.2, HTE.2, HMM.2/2+2 and HMD.2N		IK200547
Cross-Connectors 4mm²		
2-pole for HMM.4 and HTE.4		IK200504



Terminal Blocks Series IK1 and IK2

End Brackets for Spring Clamp Terminals



IK123000



IK123001



IK113000



IK199999



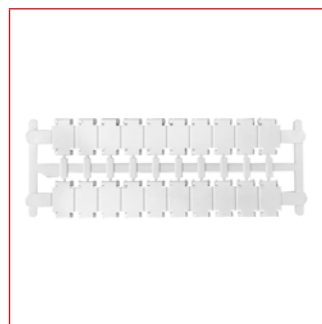
IK113000 + IK199999

Schrack-Info

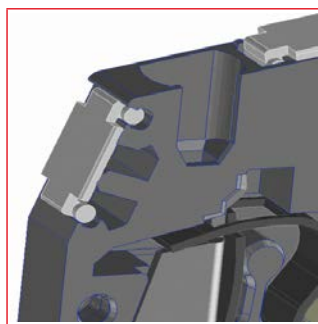
- End brackets black for screw terminals IK1 and spring clamp terminals IK2
- **Type BT/3**
 - For DIN-rails TS 35
 - Snap fastening with screw fixing
- **Type BTU**
 - For mounting rails TS 32 and TS 35
 - Snap fastening
- **Type BT/DIN/PO**
 - For G-rail TS 35
 - Screw fixing
- Group tag holder IK199999 compatible with all listed end brackets

DESCRIPTION	AVAILABLE	ORDER NO.
End bracket BT/3 snappable and screwable for TS 35 rail		IK123000
End bracket BTU snappable for TS 32 and TS 35 rails		IK123001
End bracket BT/DIN/PO screwable for TS 32 rail		IK113000
Group tag holder for end brackets BT/3, BTU and BT/DIN/PO		IK199999

Marker Strip for Spring Clamp Terminals



IK297200



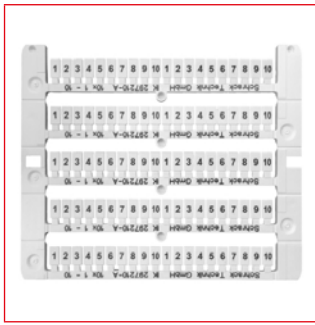
Mounting example

Schrack-Info

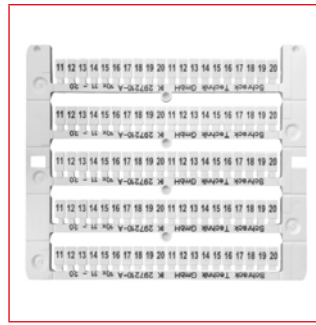
- Marker strip for continuous, individual marking of spring clamp terminals IK2
- 1 PU = 20 tags (white)

DESCRIPTION	AVAILABLE	ORDER NO.
Marker strip with 20 tags (white) for spring clamp terminals IK2		IK297200
Marking pen red		IK198901
Marking pen black		IK193901

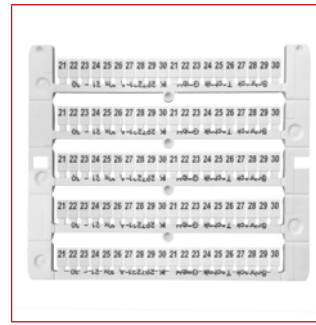
Marking Tags for Spring Clamp Terminals



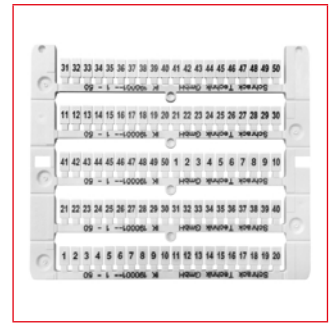
IK297210-A



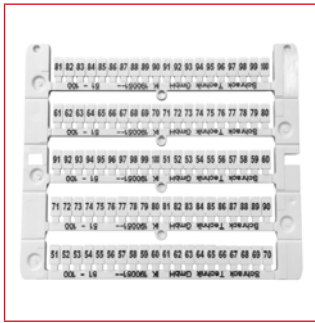
IK297211-A



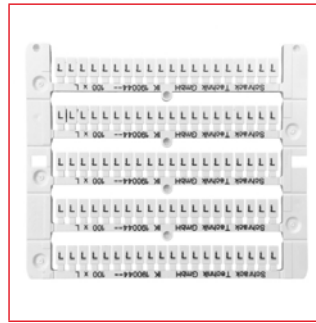
IK297221-A



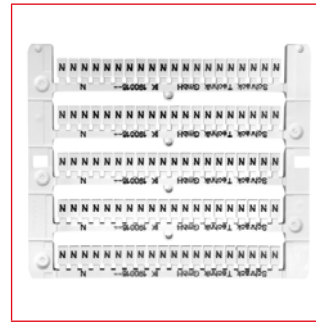
IK190001



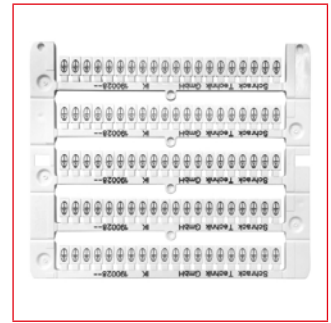
IK190051



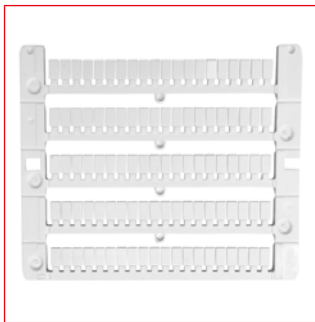
IK190044



IK190016



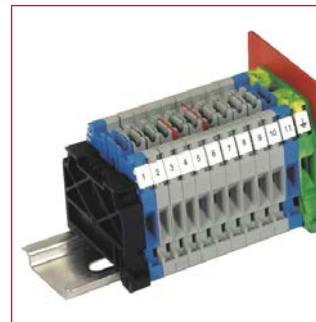
IK190028



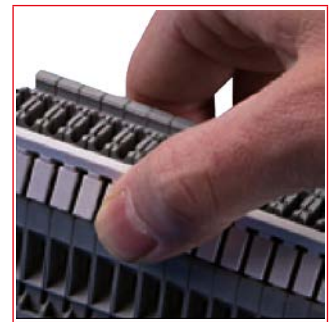
IK190030



IK193901



Mounting example with single tags

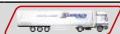

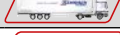

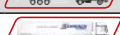











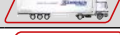
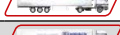




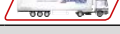


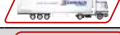



Mounting example as a whole strip

Schrack-Info

- Printed and unprinted marking tags for screw terminals IK1 and spring clamp terminals IK2

Marking Tags for Spring Clamp Terminals

DESCRIPTION	AVAILABLE	ORDER NO.
Printed - Numbers		
"1-10" (10 times)		IK297210-A
"11-20" (10 times)		IK297211-A
"21-30" (10 times)		IK297221-A
"31-40" (10 times)		IK297231-A
"41-50" (10 times)		IK297241-A
"51-60" (10 times)		IK297251-A
"61-70" (10 times)		IK297261-A
"71-80" (10 times)		IK297271-A
"81-90" (10 times)		IK297281-A
"91-100" (10 times)		IK297291-A
"1-50" (2 times)		IK190001
"51-100" (2 times)		IK190051
"101-150" (2 times)		IK190101
"151-200" (2 times)		IK190151
"201-250" (2 times)		IK190201
"251-300" (2 times)		IK190251
"301-350" (2 times)		IK190301
"351-400" (2 times)		IK190351
"401-450" (2 times)		IK190401
"451-500" (2 times)		IK190451
Printed - Signs		
"L" (100 times)		IK190044
"L1" (100 times)		IK190002
"L2" (100 times)		IK190003
"L3" (100 times)		IK190004
"N" (100 times)		IK190016
"PE" (100 times)		IK190040
"Earth symbol" (100 times)		IK190028
"+" (100 times)		IK190023
"-" (100 times)		IK190024
"U" (100 times)		IK190017
"V" (100 times)		IK190018
"W" (100 times)		IK190019
"Z" (100 times)		IK190022
Unprinted		
Unprinted (100 times)		IK190030
Marker pens		
Marking pen black		IK193901
Marking pen red		IK198901

Plastic Cable Marker



IK021165



IK021165

Schrack-Info

- Plastic cable marker for cables and wires with a diameter from 10 to 25 mm
- Material: Polyethylene
- Transparent and halogen-free
- Lettering field size: 29x8 mm
- Insert strip is not included
- Ambient temperature from -40 °C to 80 °C

DESCRIPTION	AVAILABLE	ORDER NO.
Plastic cable marker		IK021165

Mounting Brackets



IK100996



IK100997



IK100998



IK100993

Schrack-Info

- Mounting brackets for the mounting of DIN-rails
- Available in the heights 30 mm, 50 mm and 90 mm
- Possibility of sloped mounting with IK100993
- Galvanized

DESCRIPTION	AVAILABLE	ORDER NO.
Mounting bracket with 1x M6 thread, 30 mm high		IK100996
Mounting bracket with 1x M6 thread, 50 mm high		IK100997
Mounting bracket with 1x M6 thread, 90 mm high		IK100998
Mounting bracket with 1x M6 thread for sloped mounting, 49 mm high		IK100993



Order no. blue: on stock, usually ready for delivery on the day of order

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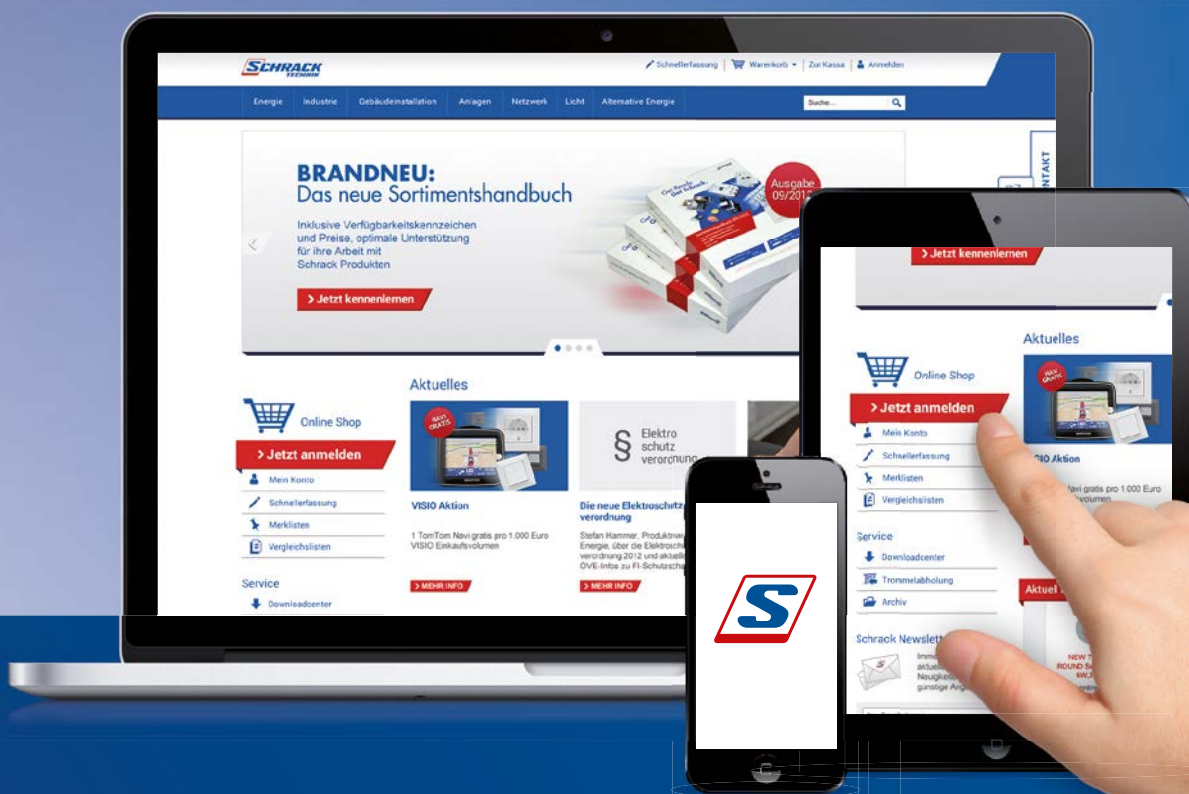
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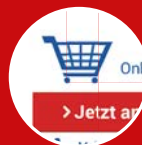
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issued by the Austrian Electrical and Electronics Industry Association (FEET)

1. Scope

- 1.1. These General Terms shall govern legal transactions between business enterprises, namely the delivery of commodities and, mutatis mutandis, the rendering of services. Software transactions are with precedence governed by the Software Conditions issued by the Austrian Electrical and Electronics Industry Association, assembly work by the Terms and Conditions for Assembly Work issued by the Austrian Power Current and Light Current Engineering Industry and/or (where applicable) the Terms and Conditions for the Assembly of Electrical Equipment used in Medicine issued by the Austrian Electrical and Electronics Industry (the current versions are available at www.feet.at).
- 1.2. Any departure from the terms and conditions mentioned in 1.1 above shall be valid only if expressly accepted in writing by Seller.

2. Submission of offers

- 2.1. Seller's offers shall be deemed offers without engagement.
- 2.2. Tender documents and project documentation must not be duplicated nor made available to third parties without the permission of Seller. They may be claimed back at any time and shall be returned to Seller immediately if the order is placed elsewhere.

3. Conclusion of contract

- 3.1. The contract shall be deemed concluded upon written confirmation by Seller of an order received or upon dispatch of a delivery.
- 3.2. Particulars appearing in catalogues, folders etc. as well as any oral or written statements shall only be binding if Seller makes express reference to them in the confirmation of the order.
- 3.3. Subsequent amendments of or additions to the contract shall be subject to written confirmation.

4. Prices

- 4.1. Prices shall be quoted ex works or ex Seller's warehouse without VAT, packing and packaging, loading, disassembly, take-back and proper recycling and disposal of waste electrical and electronic equipment for commercial purposes as defined by the Ordinance Regulating the Handling of Waste Electrical Equipment. Buyer shall be liable for any and all charges, taxes or other duties levied in respect of delivery. If the terms of delivery include transport to a destination designated by Buyer, transport costs as well as the cost of any transport insurance desired by Buyer shall be borne by the latter. Delivery does not, however, include unloading and subsequent handling. Packaging materials will be taken back only by express agreement.
- 4.2. Seller reserves the right to modify prices if the order placed is not in accordance with the offer submitted.
- 4.3. Prices are based on costs obtaining at the time of the first quotation. In the event that the costs have increased by the time of delivery, Seller shall have the right to adjust prices accordingly.
- 4.4. In carrying out repair orders, Seller shall provide all services deemed expedient and shall charge Buyer for the same on the basis of the work input and/or expenditures required. The same holds for any services or additional services the expediency of which becomes apparent only as the repair order is executed. In such an event special notification of Buyer shall not be required.
- 4.5. Expenses for estimates of costs of repair and maintenance or for expert valuations shall be invoiced to Buyer.

5. Delivery

- 5.1. The period allowed for delivery shall commence at the latest of the following dates:
 - a) the date of order confirmation by Seller;
 - b) the date of fulfilment by Buyer of all the conditions, technical, commercial and other, for which he is responsible;
 - c) the date of receipt by Seller of a deposit or security due before delivery of the goods in question.
- 5.2. Buyer shall obtain whatever licences or approvals may be required from authorities or third parties for the construction of plant and equipment. If the granting of such licences or approvals is delayed for any reason the delivery period shall be extended accordingly.
- 5.3. Seller may carry out, and charge Buyer for, partial or advance deliveries. If delivery on call is agreed upon, the commodity shall be deemed called off at the latest one year after the order was placed.
- 5.4. In case of unforeseeable circumstances or circumstances beyond the parties control, such as all cases of force majeure, which impede compliance with the agreed period of delivery, the latter shall be extended in any case for the duration of such circumstances; these include in particular armed conflicts, official interventions and prohibitions, delays in transport or customs clearance, damages in transit, energy shortage and raw materials scarcity, labour disputes, and default on performance by a major component supplier who is difficult to replace. The aforesaid circumstances shall be deemed to prevail irrespective of whether they affect Seller or his subcontractor(s).
- 5.5. If a contractual penalty for default of delivery was agreed upon by contracting parties when the contract was concluded, it shall be executed as follows, and any deviations concerning individual items shall not affect the remaining provisions: Where delay in performance can be shown to have occurred solely through the fault of Seller, Buyer may claim for each completed week of delay an indemnity

of at most one half of one per cent, a total of no more than 5 %, however, of the value of that part of the goods to be delivered which cannot be used on account of Seller's failure to deliver an essential part thereof, provided the Buyer has suffered a damage to the aforesaid extent. Assertion of rights of damages exceeding this extent is precluded.

6. Passage of risk and place of performance

- 6.1. Unless otherwise agreed, the delivery of goods is considered sold EXW in accordance with INCOTERMS® 2010.
- 6.2. For services, the place of performance shall be the place indicated in the written order confirmation, secondary to that at which the service is actually rendered by Seller. The risk in respect of such services or any part thereof shall pass to Buyer at the time the services have been rendered.

7. Payment

- 7.1. Unless otherwise agreed, one third of the purchase price shall fall due at the time of receipt by Buyer of the order confirmation of Seller, one third after half the delivery period has elapsed and the balance at the time of delivery. Irrespective thereof the turnover tax comprised in the amount of the invoice shall be paid within 30 days of the invoice date. If bankruptcy proceedings are instituted against the assets of Buyer or if an application for bankruptcy proceedings is not granted for insufficiency of assets, deliveries shall only be made against cash in advance.
- 7.2. In the case of part settlements the individual part payments shall fall due upon receipt of the respective invoices. The same shall apply to amounts invoiced for additional deliveries or resulting from additional agreements beyond the scope of the original contract, irrespective of the terms of payment agreed upon for the principal delivery.
- 7.3. Payment shall be made without any discount free Seller's domicile in the agreed currency. Drafts and checks shall be accepted on account of payment only, with all interest, fees and charges in connection therewith (such as collection and discounting charges) to be borne by Buyer.
- 7.4. Buyer shall not be entitled to withhold or offset payment on the grounds of any warranty claims or other counterclaims.
- 7.5. Payment shall be deemed to have been effected on the date at which the amount in question is at Seller's disposal.
- 7.6. If Buyer fails to meet the terms of payment or any other obligation arising from this or other legal transactions, Seller may without prejudice to his other rights
 - a) suspend performance of his own obligations until payments have been made or other obligations fulfilled, and exercise his right to extend the period of delivery to a reasonable extent,
 - b) call in debts arisen from this or any other legal transactions and charge default interest amounting to 1.25 % per month plus turnover tax for these amounts beginning with the due dates, unless Seller proves costs exceeding this.
 - c) only perform other legal transactions against cash in advance in the case of qualified insolvency, in other words, following two delays in payment.In any case Seller has the right to invoice all expenses arising prior to a lawsuit, especially reminder charges and lawyer's fees.
- 7.7. Discounts or bonuses are subject to complete payment in due time.
- 7.8. Seller retains title to all goods delivered by him until receipt of all amounts invoiced including interests and charges. Buyer herewith assigns his claim out of a resale of conditional commodities, even if they are processed, transformed or combined with other commodities, to Seller to secure the latter's purchase money claim. In the case of resale granting respite Buyer shall have the power of disposal of the product under retention of ownership only with the proviso that upon reselling Buyer notifies the secondary buyer of the assignment for security or enters the assignment in his account books. Upon request Buyer has to notify the assigned claim and the debtor thereof to Seller, and to make all information and material required for his debt collection available and to notify the assignment to the third-party debtor. If the goods are attached or otherwise levied upon, Buyer shall draw attention to Seller's title and immediately inform Seller of the attachment or levy.

8. Warranty and acceptance of obligation to repair defects

- 8.1. Once the agreed terms of payment have been complied with, Seller shall, subject to the conditions hereunder, remedy any defect existing at the time of acceptance of the article in question whether due to faulty design, material or manufacture, that impairs the functioning of said article. From particulars appearing in catalogues, folders, promotional literature as well as written or oral statements which have not been included in the agreement no warranty obligations may be deduced.
- 8.2. Unless special warranty periods operate for individual items the warranty period shall be 12 months. These conditions shall also apply to any goods supplied, or services rendered in respect of goods supplied, that are firmly attached to buildings or the ground. The warranty period begins at the point of passage of risk acc. to paragraph 6.
- 8.3. For improved or exchanged parts, the warranty period shall start again, but shall end in any case 6 months after the original warranty period has expired.
- 8.4. If delivery or the performance of services is delayed for reasons outside the control of Seller, the warranty period shall begin 2 weeks after Seller is ready to deliver or perform services.

- 8.5. The foregoing warranty obligations are conditional upon the Buyer giving within a reasonable period notice in writing of any defects that have occurred and such notice reaching the Seller. Buyer shall prove within a reasonable period the presence of a defect, in particular he shall make available within a reasonable period to Seller all material and data in his possession. Upon receipt of such notice Seller shall, in the case of a defect covered by the warranty under 8.1 above, have the option to replace the defective goods or defective parts thereof or else to repair them on Buyer's premises or have them returned for repair, or to grant a fair and reasonable price reduction.
- 8.6. Any expenses incurred in connection with rectifying defects (e. g. expenses for assembly and disassembly, transport, waste disposal, travel and site-quarters time) shall be borne by Buyer. For warranty work on Buyer's premises Buyer shall make available free of charge any assistance, hoisting gear, scaffolding and sundry supplies and incidentals that may be required. Replaced parts shall become the property of Seller.
- 8.7. If an article is manufactured by Seller on the basis of design data, design drawings, models or other specifications supplied by Buyer, Seller's warranty shall be restricted to non-compliance with Buyers specifications.
- 8.8. Seller's warranty obligation shall not extend to any defects due to assembly and installation work not undertaken by Seller, inadequate equipment, or due to non-compliance with installation requirements and operating conditions, overloading of parts in excess of the design values stipulated by Seller, negligent or faulty handling or the use of inappropriate materials, nor for defects attributable to material supplied by Buyer. Nor shall Seller be liable for damage due to acts of third parties, atmospheric discharges. Excess voltage and chemical influences. The warranty does not cover the replacement of parts subject to natural wear and tear. Seller accepts no warranty for the sale of used goods.
- 8.9. The warranty shall lapse immediately if, without written consent of Seller, Buyer himself or a third party not expressly authorised undertakes modifications or repairs on any items delivered.
- 8.10. Claims acc. to § 933b ABGB are struck by the statute of limitation with lapse of the period mentioned under point 8.2.
- 8.11. The provisions of sub-paragraphs 8.1 to 8.10 shall apply, mutatis mutandis, to all cases where the obligation to repair defects has to be accepted for other reasons laid down by law.
- 9. Withdrawal from contract**
- 9.1. Buyer may withdraw from the contract only in the event of delays caused by gross negligence on the part of Seller and only after a reasonable period of grace has elapsed. Withdrawal from contract shall be notified in writing by registered mail.
- 9.2. Irrespective of his other rights Seller shall be entitled to withdraw from the contract
- a) if the execution of delivery or the inception or continuation of services to be rendered under the contract is made impossible for reasons within the responsibility of Buyer and if the delay is extended beyond a reasonable period of grace allowed;
 - b) if doubts have arisen as to Buyer's creditworthiness and if same fails, on Seller's request, to make an advance payment or to provide adequate security prior to delivery, or
 - c) if, for reasons mentioned in 5.4, the period allowed for delivery is extended by more than half of the period originally agreed or by at least 6 months, or
 - d) if Buyer does not or does not properly meet the obligations imposed as per paragraph 13.
- 9.3. For the reasons given above withdrawal from the contract shall also be possible in respect of any outstanding part of the delivery or service contracted for.
- 9.4. If bankruptcy proceedings are instituted against Buyer or an application for bankruptcy proceedings is not granted for insufficiency of assets, Seller may withdraw from the contract without allowing a period of grace. If this withdrawal is taken, it shall take effect immediately upon the decision that the business will not be continued. If the business will be continued, a withdrawal shall not take effect until 6 months after the institution of bankruptcy proceedings or after an application for bankruptcy proceedings has not been granted for insufficiency of assets. In any case, the contract shall be terminated immediately unless the bankruptcy law to which Buyer is subject conflicts with this or if termination of the contract is necessary to prevent significant damages to Seller.
- 9.5. Without prejudice to Seller's claim for damages including expenses arising prior to a lawsuit, upon withdrawal from contract any open accounts in respect of deliveries made or services rendered in whole or in part shall be settled according to contract. This provision also covers deliveries or services not yet accepted by Buyer as well as any preparatory acts performed by Seller. Seller shall, however, have the option alternatively to require the restitution of articles already delivered.
- 9.6. Withdrawal from contract shall have no consequences other than those stipulated above.
- 9.7. The assertion of claims on the ground of *laesio enormis*, error, or lapse of purpose by the Buyer is excluded.
- 10. Disposal of waste electrical and electronic equipment**
- 10.1. The Buyer of electrical/electronic equipment for commercial purposes, incorporated in Austria, is responsible for the financing of the collection and treatment of waste electrical and electronic equipment as defined by the Ordinance Regulating the Handling of Waste Electrical Equipment, if he is himself the user of the electrical/electronic equipment. If the Buyer is not the end user, he shall transfer the full financial commitment to his customer by agreement and furnish proof thereof to the Seller.
- 10.2. The Buyer incorporated in Austria shall ensure that the Seller is provided with all information necessary to meet the Seller's obligations as manufacturer/importer, particularly according to §§ 11 and 24 of the Ordinance Regulating the Handling of Waste Electrical Equipment and the Waste Management Act.
- 10.3. The Buyer incorporated in Austria is liable vis-à-vis the Seller for any damage and other financial disadvantages incurred by Seller due to Buyer's failure to meet or fully meet his financing commitment or any other obligations according to Article 10. The Buyer shall bear the burden of proof of performance of this obligation.
- 11. Seller's liability**
- 11.1. Outside the scope of the Product Liability Act, Seller shall be liable only if the damage in question is proved to be due to intentional acts or acts of gross negligence, within the limits of statutory provisions. Seller's total liability in cases of gross negligence is limited to the net value of the order or EUR 500,000, depending on which amount is lower.
- 11.2. For each incident of damage, Seller shall be liable for 25% of the net value of the order or EUR 125,000, depending on which amount is lower.
- 11.3. Seller shall not be liable for damage due to acts of ordinary negligence nor for consequential damages or damages for pure economic loss, indirect damages, loss of production, financing costs, costs for replacement energy, loss of energy, data or information, loss of profits, loss of savings or interest, or damage resulting from third-party claims against buyer.
- 11.4. Seller shall not be liable for damages in case of non-compliance with instructions for assembly, commissioning and operation (such as are contained in instructions for use) or non-compliance with licensing requirements.
- 11.5. Claims that exceed the contractual penalties that were agreed on are excluded from the respective title. The provisions of paragraph 11 apply exclusively for all claims by Buyer against Seller, regardless of the legal basis or entitlement, and also apply to all employees, subcontractors and subsuppliers of Seller.
- 12. Industrial property rights and copyrights**
- 12.1. Buyer shall indemnify Seller and hold him harmless against any claims for any infringement of industrial property rights raised against him if Seller manufactures an article pursuant to any design data, design drawings, models or other specifications made available to him by Buyer.
- 12.2. Design documents such as plans and drawings and other technical specifications as well as samples, catalogues, prospectuses, pictures and the like shall remain the intellectual property of Seller and are subject to the relevant statutory provisions governing reproduction, imitation, competition etc. The provisions of 2.2 above shall also cover design documents.
- 13. Compliance with export provisions**
- 13.1. When passing on goods delivered by Seller to third parties (as well as any related documentation, regardless of the method of provision or the services performed by Seller [including technical support of any kind]), Buyer must comply with the applicable regulations of national and international (re-)export provisions. In any case, Buyer must observe the (re-)export provisions of Seller's country of residence, the European Union and the United States of America.
- 13.2. If necessary for export controls, Buyer must provide Seller with all necessary information immediately after being requested to do so, for example, information about the final recipient, final destination and purpose of the goods or services.
- 14. General**
- Should individual provisions of the contract or of these provisions be invalid the validity of the other provisions shall not be affected. The invalid provision shall be replaced by a valid one, which comes as close to the target goal as possible.
- 15. Jurisdiction and applicable law**
- Any litigations arising under the contract including litigations over the existence or non-existence thereof shall fall within the exclusive jurisdiction of the competent court at Seller's domicile; the competent court of the Bezirksgericht Innere Stadt, Vienna, shall have exclusive jurisdiction if Seller is domiciled in Vienna. The contract is subject to Austrian law excluding the referral rules. Application of the UN Convention on Contracts for the International Sale of Goods is renounced.
- 16. Proviso**
- The execution of the contract by Seller is subject to the condition that there are no obstacles standing in the way of execution due to national or international (re-)export provisions, and especially no embargos and/or other sanctions.

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