



- Beacons & Alarms • Cable Management • Circuit Protection •
- Connectors • Contactors & Relays • Enclosures •
- Switches • Terminals • Timers & Monitoring Relays •



We are a family owned business with a 40 plus year heritage.

We believe our customers choose us, because we give them value in return for their hard-earned dollars and precious time. We are always thankful and appreciative for every order we receive. We know that our success, is directly proportional to our customers success, so we will go the extra mile to help in whatever way possible.

We distribute the highest quality products from some of the leading manufacturers in their respective fields. We only deal with premium brands.

Paul and Sherston Chaplin
Business Owners.



Beacons & Alarms

Our range of control and signalling devices include beacons, towers, strobes, and audible alarms, which are manufactured in Europe and USA.



Cable Management

We offer a large range of cable accessories and protection products, including Cable glands, in Nylon, and Brass, as well as EMC variants, that protect the enclosure from the ingress of dust and water, as well as strain relief, for the cables themselves. A unique and ever expanding IP66 Cable management system, for the safe transitioning of pre-terminated cables, hoses and pneumatic lines. Ferrules and quick connects for terminating cables, and drag chain and conduits to protect cables.



Circuit Protection

A comprehensive range of circuit breakers, RCBOs, and moulded case circuit breakers are available from world leading manufacturers, CBI-electric, Schrack and Noark. Both AC and DC (solar) are covered within our product offering.

We also carry load centres and distribution boards to house the circuit breakers.



Connectors

Switches Plus Components carry an extensive range of Cable Connectors for a large range of applications, including industrial duty, power and high current, hybrid, harsh environments, high IP ratings, square, circular, Mil-Spec, miniature, and more. This range is growing rapidly, and we are always on the look out for new and exciting connector solutions.



Switches

We carry an extensive range of switches, ranging from electronics applications, through to industrial control and high current switching, footswitches, cam switches, rocker and toggle switches, for a multitude of applications.

We also offer specialty items such as medical grade keyboards and military spec switches and control grips (joysticks).



Contactors & Relays

We carry an extensive range of contactors, manual motor starters, and relays, manufactured in Europe by world leading manufacturers, Schrack, Conta-Clip, and Tele Haase.

Meeting IEC standards, our relays, motor protection switches and contactors, are often used in applications, ranging from appliances, to HVAC, and industrial control systems.



Terminals

German manufacturer, CONTA-CLIP, offers an extensive range of terminals, including high-quality standard terminal blocks and customised connection terminals. Regardless of whether you opt for the screw connection, tension-spring or pressure-spring technology – we provide terminals in various designs (such as feed-through terminals, double-level terminals and component terminals) with all wire-connect options.



Enclosures

Our range of enclosures is vast and offers you the ability to house and protect your electrical, electronic, hydraulic and pneumatic components from environmental conditions as well as protect personnel from equipment risks. Our range of enclosures include those made from plastics such as ABS, Polycarbonate and Polyester. We also offer Fibreglass, Steel, Stainless Steel, and Aluminium. All with a minimum rating of IP66. We also offer custom made enclosures in small production runs.



Timers & Monitoring Relays

We offer an extensive range of monitoring relays from premium European manufacturers; Tele-Haase, Schrack, and Conta-Clip, to measure and monitor current, voltage, temperature, frequency, level, power factor and active power. We also carry a large range of timers, and time clock control relays.

Beacons & Alarms		
30/45/65mm Ø Panel Mount Alarm		
50mm Stack Light LED Towers		
65mm Ø Panel Mount LED Beacon		
65mm Ø Xenon Strobe Beacon		
70mm Stack Light LED Towers		
93mm Ø LED Flashing Beacon and Siren		
94-132mm LED Beacon and Alarm		
M28 Audiolarm II		
Cable Management		
Blanking Plugs		
Brass Cable Gland		
Cable Marker Sleeves		
Conduit fittings		
Drag Chain		
EMC Brass Cable Gland		
Ferrule Crimping Tools		
Flexible conduit		
Inlays		
KDS-DES Multi Cable Seals		
KDS-FB Flat Cable Seals		
KES Cable Entry System		
KES-E Cable Entry System		
Nylon Cable Gland		
Nylon Spiral Gland		
Ordering Guide		
Pre-Insulated Terminals		
Single Wire Ferrules		
Single Wire Ferrules in Dispensor pack		
Split Cable Glands		
Stainless Steel Cable Gland		
Thread Enlarger		
Thread Reducer		
Twin Wire Ferrules		
V90HT Panel wire		
Circuit Protection		
3 Pole RCBO		
AC Moulded Case Circuit Breakers		
DC Miniature Circuit Breakers		
DC Moulded Case Circuit Breakers		
Distribution Boards		
IP65 Load Centres		
Isolators		
Miniature Circuit Breakers		
Miniature Circuit Breakers		
RCBO		
Single Pole RCBO		
Connectors		
Accessories		
CEEform IEC Plugs & Inlets		
CEEform IEC Sockets		
CEEform IEC Wall mounted Sockets		
Industrial Multipoles		
Industrial Plugs & Sockets		
IP67 Connectors		
IP67 Junction Box		
IP68 Cable Joiners		
IP68 Connectors		
6 Contactors & Relays		38
8 CUBICO Classic Contactors		39
6 CUBICO High Current Contactors		39
8 CUBICO Miniature Contactors		38
8 CUBICO Motor Protection Switch		40
7 Installation Contactors		38
9 Interface Relays		40
9 Relays		41
8		
10 Enclosures		44
18 Accessories for metal enclosures		50
19 Filters and fans		51
11 Heaters		50
17 LED Cabinet light		50
13 Locks		47
19 Louvre Vent Kit		51
10 M22 Control enclosures		47
16 Mounting Brackets		47
22 Plastic Enclosures		44
23 Pressure Compensation Device		50
23 Rainhoods for enclosures		51
24 Replacement Cover Screws		47
25 Thermostats		51
18 Ventilators		47
18 Wall Mount Powder Coated Steel		48
18 Wall Mount Stainless Steel		49
11 Switches		54
10 22mm Accessories		58
10 22mm Double pushbutton		56
21 22mm Emergency Stop		56
19 22mm LED Pilot lights		59
18 22mm Mushroom		56
18 22mm Pushbuttons		56
10 22mm Selector Switches		57
11 Anti-vandal Pilot lights		59
26 Anti-Vandal pushbuttons		59
27 Cam Switches		55
28 Dome pushbuttons		62
29 Footswitch		60
28 Interlock Switch		63
26 Isolators and Switches		54
29 Joystick		57
27 Keyed Switchlocks -19mm		63
26 Key Selector Switches		57
27 Limit Switches - ME Series		67
26 Limit Switches - MJ1 Series		65
26 Limit Switches - MJ Series		68
27 Limit Switches - MN Series		66
30 M22 Control enclosures		58
33 Main Switches		54
36 Micro Switch		64
36 Palm switch		59
37 Potentiometer		57

Terminals	70	Timers & Monitoring Relays	80
2.5mm ² Terminal Markers	79	7 Day Digital Time Switch	80
4mm ² Terminal Markers	79	24 Hour Analogue Time Switch	80
Din Rail and Accessories	78	Current & Temperature Monitoring	84
Distribution blocks - high current	77	Day/Week Digital Time Switch	80
Distribution blocks - low current	76	Emergency Light Test Relay	81
Earth terminals	71	Grid Protection Relay	81
Fused and Disconnect terminals	73	Hour Run Meter	81
High Current terminals	76	Phase Indication Relay	81
Initiator terminals	72	Pump Control - alternating or parallel	83
Multi-tier feed through terminals	71	Pump Control & Level Monitoring	83
Push-in feed through terminals	74	Voltage Monitoring	85
Single tier feed through terminals	70		
Spring Clamp feed through terminals	75	Transformers & Power Supplies	87
Terminal Strips	76	Bell Transformers	87
Universal Terminal Markers	78	Power Supplies	87
		Technical Data	88
		AWG Conversion Chart	88
		Conductor Stranding	88
		Enclosure Material Selection	89
		IP Ratings	89
		Minimum Size of Copper Earth Conductors	89

We distribute the highest quality products from some of the leading manufacturers in their respective fields. We only deal with premium brands.



50mm Stack Light LED Towers

IP65, 50mm Ø modular design

The new modular signal tower Modul-Compete 50 (CT5), with a diameter of 50mm, is highly cost-optimised and boasts value for money as its main strength. Technologically, the CT5 is based on Auer Signal's patented internal contacting system and is designed exclusively for 24 V DC operation. Due to the modern, flat-flush external design of the CT5, very little dust or other residue can settle on the signal tower.

The CT5 modules are manufactured with high quality polycarbonate. The high IP65 protection and a temperature range of -30° to +60°C meet all the requirements of modern industrial applications. The intelligent interior design; 2 LEDs on each module side, and the intelligent ribbing, in conjunction with the lens bridge, enable a uniform and efficient 360° signal effect.



Multi-function Module

The LED multifunction module of the CT5 is available in six colours and offers the following functions: LED **continuous light**, LED **flashing light**, LED **single flash** and LED **double flash**. The individual functions are selected with two dip switches.

Multi-tone Piezo Module

With the piezo sound module, one of eight different tones can be selected with a dip switch. The maximum sound pressure reaches a high 95 dB (A) at a distance of one metre and can be continuously reduced using a potentiometer. The sound module of the CT5 is always mounted as a top module at the top of the signal tower.



Multi-tone Piezo Module	Multi-function					
	Amber	Red	Clear	Blue	Green	Yellow
915 510 005	915 021 005	915 022 005	915 024 005	915 025 005	915 026 005	915 027 005

Base

The bases of the CT5 have a push-in terminal and are suitable for all common mounting types such as: vertical or horizontal mounting, tube mounting, vertical tube mounting, 22.5mm mounting with M12 connector and direct mounting with a NPT 1/2" thread. The independent five-pin M12 base of the CT5 makes highly cost-effective use of the M12 connection technology. When using the M12 base, a maximum of four modules is possible.



Vertical Base	Horizontal Base	22.5mm + 5 pin M12	Horizontal 1/2" NPT	100mm Plastic Pole	250mm Pole Mount	400mm Pole Mount
915 730 900	915 710 900	915 781 005	915 715 900	915 742 910	915 743 900	915 744 900

70mm Stack Light LED Towers

IP66, 70mm Ø modular design

The new signal tower from Auer Signal is a very special one: the Modul Perfect 70, better known as PC7, is one of the most versatile signal towers indeed, available. In terms of creative design, performance, application possibilities and future suitability, it just can't get any better!

Outstanding brightness

With up to 6 times the brightness, the PC7 leaves competitors' signal towers in the shade and guarantees the best possible signalling effect – even when faced with the challenge of very bright conditions.

Tallest tower available, using up to 7 modules

Different individual modules require different numbers of contacts. The new inner contacting offers 8 contacts, which enable a total of 7 positions. This makes challenging, visual-audible tower variants feasible. The unique and patented inner contacting also enhances the visual appearance of the PC7, as the externally visible contacting wires that were previously used are no longer required.



Multi function LED modules

A true all-rounder – the new PC7 multi function module can provide **steady** light, **flashing** light, **strobe** light and **double strobe** light functions. The different functions, can be user-defined in each module via a DIP switch. The top module light provides not only 360° lighting, but also 180° hemispherical lighting at the top or bottom, depending on how the tower is mounted. This increases the signalling effect and ensures that the tower is clearly visible, at different heights. We have listed the most common LED modules here, other colours are available upon request.



Strobe - Double Strobe			Steady - Flashing - Strobe - Double Strobe				
Top Red	Top Green	Top Amber	Inline Red	Inline Green	Inline Amber	Inline Blue	Inline Clear
910 122 405	910 126 405	910 121 405	910 022 405	910 026 405	910 021 405	910 025 405	910 024 405

Multi-tone Piezo Module

The tone module of the PC7 can be placed inline or on top of the tower.

DIP switches can be used to select one of eight tones with an adjustable volume of up to 102 dB.

Base selection (2 parts required)

Choose from horizontal, vertical or pole mount base, then choose voltage selector module to suit voltage being used.

A black cap is supplied with the voltage selector module to enable inline modules to be used on the top of tower.



Multi-tone Piezo Module	Mounting base (part 1)				Voltage selector module (part 2)	
	Horizontal Base	Vertical Base	100mm Pole mount	250mm Pole mount	24V AC/DC (7)	120-240V AC (7)
910 520 405	910 710 900	910 730 900	910 742 900	910 743 900	910 771 405	910 773 313

65mm Ø Panel Mount LED Beacon

IP67, M22 mount, Steady

- Ø 65 mm panel-mount LED multi-colour steady beacon
- Colour can be switched externally
- Modern LED technology and electronics
- Panel size Ø 22.5 mm/M22
- Prewired with 1m cable



Voltage	Red - Green - Yellow
24V AC/DC	802 550 405

65mm Ø Xenon Strobe Beacon

IP65, Xenon tube included

- Ø 65 mm compact xenon strobe beacon
- Prewired, 400 mm connecting cord
- Degree of protection IP 65
- 2 J strobe energy



Voltage	Red
24V DC	D118 522 005

30/45/65mm Ø Panel Mount Alarm

IP65, M22 mount, 85-100dB, 12-24V AC/DC

- Ø 30 mm panel-mount buzzer Max. 85 dB(A)
- Ø 45 mm panel-mount buzzer Max. 100 dB(A) adjustable*
- Ø 65 mm panel-mount buzzer Max. 105 dB(A) adjustable*
- High degree of protection IP 65
- Panel size Ø 22.5 mm/M22
- User-friendly connection technology
- For industrial and general applications



Tone	30mm Ø 85dB	45mm Ø 85-100dB*	65mm Ø 85-105dB*
Continuous/Pulsing	812 510 405	813 500 405	
Continuous/Pulsing/Warble			814 500 405

*Adjustable via potentiometer

M28 Audiolarm II

Approx 1" Ø, mounting hole 29mm - IP68 with optional gasket

Floyd Bell's AudioLarm® II Series, first developed, sold and launched in 1982, and the subject of continuous improvement and innovation, is a solid-state, environmentally secure piezo electric alarm, that has become the most widely used industrial alarm in the world. This series has grown to become the industry's largest selection of piezo electric alarms. Our optional shutter-type manual volume control, provides variable attenuation of up to 20 dB.



Part Number	Tone	Volume	Sound level	Voltage	Termination
MC-07-530-SR	Continuous	Medium loud	95dB	5-30V DC	Screw & Quick Connect
MW-V07-530-SR	Warble	Loud with volume control	95dB	5-30V DC	Screw & Quick Connect
MW-09-201-S	Extra fast warble	Medium loud	95dB	30-120V AC	Screw & Quick Connect
MW-09-301-SR	Extra fast warble	Loud	95dB	130-240V AC	Screw & Quick Connect
MW-09-550-SR	Extra fast warble	Medium loud	95dB	15-36V AC/DC	Screw & Quick Connect
XB-09-312-SM	Beep	Ultra loud	103dB	5-12V DC	Screw & Quick Connect
G-79	Gasket to suit				

93mm Ø LED Flashing Beacon and Siren

IP65, Cost effective LED flashing beacon with integrated electronic multitone (2 - 32 tones) siren

- Cost-effective multi-tone alarm sounder with LED flashing beacon
- 32 tones can be selected via DIP switch
- Sound pressure can be preselected in 3 steps via DIP switch (88-109dB)
- For universal applications at 24 V DC
- Second tone can be switched externally
- Degree of protection IP 65 can be achieved if installed correctly



Size	Voltage	Amber	Red
93mm Ø	24V DC	C111 221 005	C111 222 005

94-132mm LED Beacon and Alarm

Steady or Flashing (chosen via terminal), IP66 with optional gasket, 32 tone alarm

The Q series is a series of warning lamps with modern LED technology strobe lights that provide good signalling power and compact design. The unique lens provides a clear, sharp light with good spread. LED-technology gives long lifespan, low current consumption and better durability when subject to vibration. And with IP66 protection, these warning lamps are approved for industry, fire warning, maritime use, etc.

- 94 mm cubic-design LED - 30 cd luminous intensity, Alarm - 108dB
- 132 mm cubic-design LED - 60 cd luminous intensity, Alarm- 113dB
- Good frontal and lateral signalling effect
- High degree of protection IP66 & impact resistance IK09
- UV-stabilised material
- Modern LED technology
- Steady and flashing light, can be switched externally
- For industrial and general applications
- Combinations of beacons and multi-tone alarm sounders possible



Size	Voltage	Amber	Red	Green	Blue	Alarm
94mm □	24V AC/DC	874 161 405	874 162 405	874 166 405	874 165 405	874 170 408
132mm □	24-48V AC/DC	874 261 408	874 262 408	874 266 408	874 265 408	874 270 408
132mm □	110/240V AC/DC	874 261 413	874 262 413	874 266 413	-	874 270 313

Single Wire Ferrules

Insulated

Part Number	Conductor size (mm ²)	Internal Diameter (mm)	Length (mm)	Colour	Pack qty
A00552GB	0.5	3.0	8	White	100
A00752GB	0.75	3.4	8	Light Blue	
A01052GB	1	3.4	8	Red	
A01552GB	1.5	3.8	8	Black	
A02552	2.5	4.2	8	Grey	
A04052	4	4.8	10	Orange	
A06052	6	6.2	12	Green	
A10052	10	7.5	12	Brown	
A16052	16	8.8	12	White	



Twin Wire Ferrules

Insulated

Part Number	Conductor size (mm ²)	Internal Diameter (mm)	Length (mm)	Colour	Pack qty
A00552TWIN	0.5	2.3x4.5	8	White	100
A00752TWIN	0.75	2.6x8.1	8	Light Blue	
A01052TWIN	1	3.0x5.1	8	Red	
A01552TWIN	1.5	3.5x6.4	8	Black	
A02552TWIN	2.5	4.0x7.5	8	Grey	
A04052TWIN	4	4.9x8.6	12	Orange	
A06052TWIN	6	5.8x9.6	14	Green	
A10052TWIN	10	7.0x12.6	14	Brown	
A16052TWIN	16	8.8x16.6	16	White	50



Single Wire Ferrules in Dispenser pack

Insulated, designed for automatic or hand tool crimping

Part Number	Conductor size (mm ²)	Internal Diameter (mm)	Length (mm)	Colour	Pack qty
A00552K	0.5	2.6	8	White	1000
A00752K	0.75	2.8	8	Light Blue	
A01052K	1	3.0	8	Red	
A01552K	1.5	3.4	8	Black	
A02552K	2.5	4.2	8	Grey	500



Ferrule Crimping Tools

Our ferrule Crimpers will handle single or twin ferrules, from 0.5mm² to 16mm². They automatically adjust to the desired sleeve size and ensures a reliable, consistent termination. Low weight and ergonomic design minimize operator fatigue. Square crimping for optimum performance when terminating every time.

Conductor size (mm ²)	0.5-6mm ² - Crimp	4-16mm ² - Crimp
Part Number	CRIMPTOOL/0.5-6	CRIMPTOOL/4-16



V90HT Panel wire

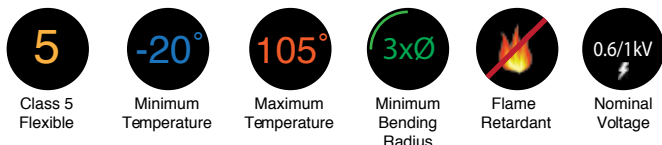
105°C Flexible Panel wire

Class 5 flexible tinned copper conductors insulated with heat resistant, flame retardant PVC (V90HT) insulation. 10mm² version, Class 6 superfine plain copper.

Nominal Voltage:
600/1000V

Temperature Range:
Fixed: -20°C to +105°C

Supplied in 100 mtr rolls.



Conductor size (mm ²)	Red	Black	White	Blue	Green/Yellow
0.5	FLB0.5RD	FLB0.5BK	FLB0.5WE	FLB0.5BE	-
0.75	FLB0.75RD	FLB0.75BK	FLB0.75WE	FLB0.75BE	FLB0.75GNYW
1	FLB1RD	FLB1BK	FLB1WE	FLB1BE	FLB1GNYW
1.5	FLB1.5RD	FLB1.5BK	FLB1.5WE	FLB1.5BE	FLB1.5GNYW
2.5	FLB2.5RD	FLB2.5BK	FLB2.5WE	FLB2.5BE	FLB2.5GNYW
4	FLB4RD	FLB4BK	FLB4WE	FLB4BE	FLB4GNYW
6	FLB6RD	FLB6BK	FLB6WE	FLB6BE	FLB6GNYW
10	FLB10RD	FLB10BK	FLB10WE	FLB10BE	FLB10GNYW

Conductor size (mm ²)	Brown	Grey	Orange	Violet	Pink
0.5	FLB0.5BN	FLB0.5GY	FLB0.5OE	FLB0.5VT	FLB0.5PK
0.75	FLB0.75BN	FLB0.75GY	FLB0.75OE	FLB0.75VT	FLB0.75PK
1	FLB1BN	FLB1GY	FLB1OE	FLB1VT	FLB1PK
1.5	FLB1.5BN	FLB1.5GY	FLB1.5OE	FLB1.5VT	FLB1.5PK
2.5	FLB2.5BN	FLB2.5GY	FLB2.5OE	FLB2.5VT	FLB2.5PK

Cable Marker Sleeves

PVC

KBH cable marker sleeves provide a safe, quick and simple marking solution. Easy to read with high-contrast typeface. Torsion resistant for reliable marking combinations. Resistant to environmental influences. Material: Soft PVC, with no cadmium or silicone.

Conductor size	0.2-1.5 mm ²	1.5-4mm ²	2.5-16mm ²
Cable Outside Ø	1.3-3 mm	2.5-5 mm	4-10 mm
Marker	(200 / bag)	(200 / bag)	(100 / bag)
0	2630.0000	2632.0000	2637.0000
1	2630.0001	2632.0001	2637.0001
2	2630.0002	2632.0002	2637.0002
3	2630.0003	2632.0003	2637.0003
4	2630.0004	2632.0004	2637.0004
5	2630.0005	2632.0005	2637.0005
6	2630.0006	2632.0006	2637.0006
7	2630.0007	2632.0007	2637.0007
8	2630.0008	2632.0008	2637.0008
9	2630.0009	2632.0009	2637.0009
Assy Tool	2650.0	2651.0	-



Pre-Insulated Terminals

Pack size 100 pieces



Conductor size (mm ²)		0.25 - 1.65	1.04 - 2.63	2.63 - 6.64	0.25 - 1.65	1.04 - 2.63	2.63 - 6.64
Tab Width (mm)	4.8	QFF1-5/8CS	QFF2-5/8CS	-	-	-	-
	6.4	QFF1-6CS	QFF2-6CS	QFF5-6CS	QM1-6CS	QM2-6CS	QM5-6CS



Conductor size (mm ²)		0.25 - 1.65	1.04 - 2.63	2.63 - 6.64	0.25 - 1.65	1.04 - 2.63	2.63 - 6.64
Tab Width (mm)	2.8	QF1-3/5CS	QF2-3/5CS	-	BSI1	BSI2	BSI5
	6.4	QF1-6CS	QF2-6CS	QF5-6CS	-	-	-



Conductor size (mm ²)		0.25 - 1.65	1.04 - 2.63	2.63 - 6.64	0.25 - 1.65	1.04 - 2.63	2.63 - 6.64
Stud Size (mm)	4	RL1-4	RL2-4	-	SL1-4	SL2-4	SL5-4
	5	RL1-5	RL2-5	-	SL1-5	SL2-5	SL5-5
	6	RL1-6	RL2-6	RL5-6	-	-	SL5-6
	8	-	RL2-8	RL5-8	-	-	-
	10	-	-	RL5-10	-	-	-

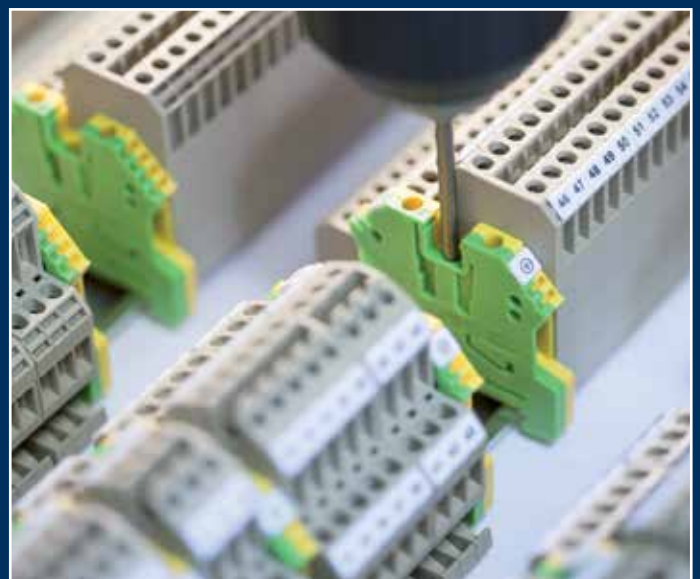
Din Terminals

One of Europe's Leading Manufacturers!

A comprehensive range of Din mount terminals manufactured in Germany by CONTA-CLIP, are available on pg 70.

CONTA-CLIP is one of Europe's leading manufacturers of electric terminal blocks. Based in Hövelhof, Germany, the company has been producing electric and electronic connection systems for the process and automation industries for more than 30 years.

CONTA-CLIP supplies all industry sectors, focusing on railroad industries, shipbuilding, building automation, conveyor technology, machine and plant engineering and construction, instrumentation and control technology, control panel manufacturing, transformer manufacturing, and environmental technology.



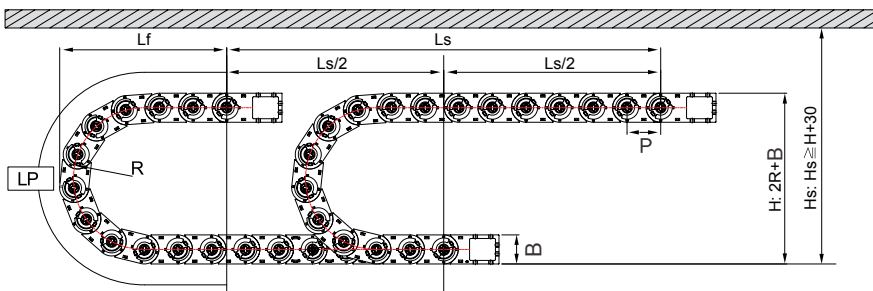
Drag Chain

Glass fibre reinforced polyamide, UL94-HB

Speed 10m/sec
 Low Noise 40dB
 Temperature -30°C ~ +130°C



Chain Type	Vertical Installation Lengths (max)		Side mounted (max)
	Curve above	Curve Below	Unsupported
CPS015	0.8m	3.0m	0.2m
CPS020	1.0m	5.0m	0.5m
CPS030	1.5m	10.0m	0.6m
CPS033	1.5m	10.0m	0.6m



- Lf:** Loop Projection
- Lp:** Loop Length
- Ls:** Stroke
- Hs:** Safe Clearance
- B:** External Height
- R:** Bending Radius
- P:** Pitch
- H:** 2R + B
- Hs:** H + 30mm

Calculation of Chain length:
 $L = Ls / 2 + Lp$

Ordering Guide

Add Bending radius to chain type part number

Cable Chain Item Number	CPS015.	10	R28
Internal Width			
Bending Radius (R)			

Part number	Internal Dimensions (mm)		External Dimensions (mm)		Pitch (mm)	Bending Radius	End Bracket (set)	Tie Wrap (each)
	Width	Height	Width	Height (B)				
CPS015.06	6	10	13	13	15	18/28/38	S-TEB015.06	
CPS015.10	10		17			18/28/38		S-TEB015.10
CPS015.15	15		22			18/28/38		S-TEB015.15
CPS015.20	20		27			18/28/38		S-TEB015.20
CPS020.15	15	14.5	24	20	20	28/38/48	S-TEB020.15	
CPS020.20	20		29			28/38/48		S-TEB020.20
CPS020.30	30		39			28/38/48		S-TEB020.30
CPS020.40	40		49			28/38/48		S-TEB020.40
CPS030.15	15	19	29	26	30	38/48/75/100	S-TEB030.15	
CPS030.25	25		39			38/48/75/100		S-TEB030.25
CPS030.35	35		49			38/48/75/100		S-TEB030.35
CPS030.50	50		64			38/48/75/100		S-TEB030.50
CPS033.27	27	23	43	31	33	35/45/75/100/120	S-EEB033	S-TW033/020CR27
CPS033.37	37		53			35/45/75/100/120		S-TW033/020CR37
CPS033.47	47		63			35/45/75/100/120		S-TW033/020CR47
CPS033.67	67		83			35/45/75/100/120		S-TW033/020CR67
CPS033.77	77		93			35/45/75/100/120		S-TW033/020CR77

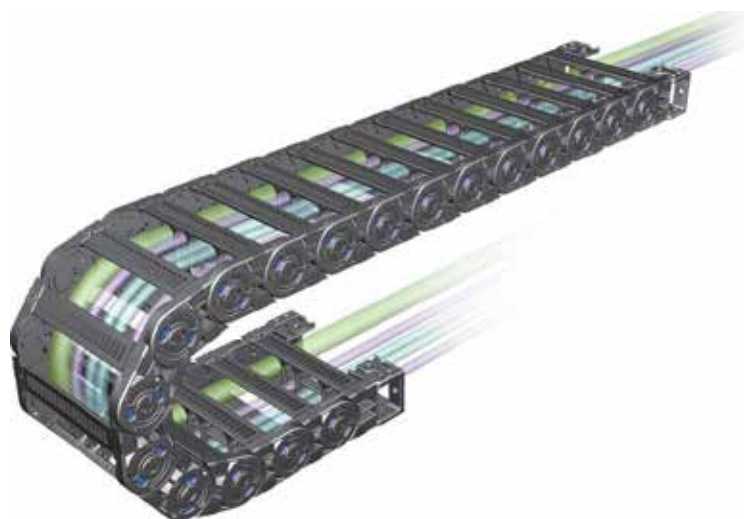


Drag Chain

Glass fibre reinforced polyamide, UL94-HB

Speed 10m/sec
 Low Noise 40dB
 Temperature -30°C ~ +130°C

Chain Type	Vertical Installation Lengths (max)		Side mounted (max)
	Curve above	Curve Below	Unsupported
ST044N	2.0m	40.0m	1.0m
ST055N	3.0m	50.0m	1.0m
ST072N	6.0m	100.0m	2.5m
ST095N	6.0m	100.0m	3.0m
ST120N	6.0m	120.0m	3.0m
ST150N	7.0m	150.0m	4.0m



Ordering Guide

Add Bending radius to chain type part number

Cable Chain Item Number	CPS015.	10	R28
Internal Width			
Bending Radius (R)			

Part number	Internal Dimensions (mm)		External Dimensions (mm)		Pitch (mm)	Bending Radius	End Bracket (set)
	Width	Height	Width	Height			
ST044N.35	35	26	56	38	44	50/70/90/120/150	ST-FEB044
ST044N.50	50		71				
ST044N.55	55		76				
ST044N.75	75		96				
ST044N.100	100		121				
ST044N.125	125		146				
ST044N.150	150		171				
ST044N.175	175		196				
ST044N.200	200		221				
ST055N.35	35	40	56	52	55	55/65/90/115/140/190	ST-FEB055
ST055N.50	50		71				
ST055N.55	55		76				
ST055N.75	75		96				
ST055N.100	100		121				
ST055N.125	125		146				
ST055N.150	150		171				
ST055N.175	175		196				
ST055N.200	200		221				
ST072N.50	50	45	82	66	72	72/100/120/145/200/250/300	ST-FEB072
ST072N.55	55		87				
ST072N.75	75		107				
ST072N.100	100		132				
ST072N.125	125		157				
ST072N.150	150		182				
ST072N.175	175		207				

Part number	Internal Dimensions (mm)		External Dimensions (mm)		Pitch (mm)	Bending Radius	End Bracket (set)					
	Width	Height	Width	Height								
ST072N.200	200	45	232	66	72	72/100/120/145/200/ 250/300	ST-FEB072					
ST072N.250	250		282									
ST072N.300	300		332									
ST095N.75	75	56	113	82	95	135/150/200/230/ 280/400	ST-FEB095					
ST095N.100	100		138									
ST095N.125	125		163									
ST095N.150	150		188									
ST095N.175	175		213									
ST095N.200	200		238									
ST095N.250	250		288									
ST095N.300	300		338									
ST095N.350	350		388									
ST095N.400	400		438									
ST120N.75	75		78					117	108	120	180/200/250/300/ 350/400/500	ST-FEB120
ST120N.100	100							142				
ST120N.125	125	167										
ST120N.150	150	192										
ST120N.175	175	217										
ST120N.200	200	242										
ST120N.250	250	292										
ST120N.300	300	342										
ST120N.350	350	392										
ST120N.400	400	442										
ST120N.450	450	492										
ST120N.500	500	542										
ST120N.550	550	592										
ST120N.600	600	642										
ST150N.75	75	110		121	140	150	205/405/505/605	ST-FEB150				
ST150N.100	100		146									
ST150N.125	125		171									
ST150N.150	150		196									
ST150N.175	175		221									
ST150N.200	200		246									
ST150N.250	250		296									
ST150N.300	300		346									
ST150N.350	350		396									
ST150N.400	400		446									
ST150N.450	450		496									
ST150N.500	500		546									
ST150N.550	550		596									
ST150N.600	600		646									

Flexible conduit

Industrial grade

Our flexible conduit is manufactured from halogen free polyamide (nylon) materials. It is flame retardant, IP68, and is suitable for a wide range of temperature applications from -50°C to + 105°C, and can stand short term exposure to 150°C.

The conduit fittings are also manufactured from polyamide materials, with similar environmental properties. The fittings are a simple push-on type, with no tools or adhesives required to obtain high ingress protection, and can be removed and reused by hand, without the use of tools.



Type	General
Description	High flex
Material	Polyamide 6
Temperature	-40°C to +105°C (150°C short term)
IP Rating	IP68
Flammability	UL94-V0 Halogen Free
Colour	Black

Type	Robotic
Description	High to superior flex
Material	Polyamide 12
Temperature	-50°C to +95°C (150°C short term)
IP Rating	IP68
Flammability	UL94-V2 Halogen Free
Colour	Black

Type	Split
Description	High flex
Material	Polyamide 6
Temperature	-40°C to +105°C (130°C short term)
IP Rating	Not applicable
Flammability	UL94-HB Halogen Free
Colour	Black

Outside Ø (mm)	Part Number	Internal Ø (mm)	Bending Radius (mm)
10	PAH-07B	6.4	15
13	PAH-10B	9.6	20
15.8	PAH-12B	11.8	30
21.2	PAH-16B	15.9	40
28.5	PAH-22B	21.7	45
34.5	PAH-28B	27.8	55
42.5	PAH-36B	36	60
54.5	PAH-48B	46.5	70
67.2	PAH-56B	56.3	110
82.5	PAH-70B	70	160
106	PAH-95B	91.5	210

Part Number	Internal Ø (mm)	Bending Radius (mm)
PAR-07B	6.4	15
PAR-10B	9.6	20
PAR-12B	11.8	30
PAR-16B	15.9	40
PAR-22B	21.7	45
PAR-28B	27.8	55
PAR-36B	36	60
PAR-48B	46.5	70
PAR-56B	56.3	110
PAR-70B	70	160

Part Number	Internal Ø (mm)	Bending Radius (mm)
CPSS-07B	6.4	15
CPSS-10B	9.6	20
CPSS-12B	11.8	30
CPSS-16B	15.9	40
CPSS-22B	21.7	45
CPSS-28B	27.8	55
CPSS-36B	36	60
CPSS-48B	46.5	70

Halogen free, eco-friendly and recyclable
Flame retardant, simple to cut



Technical Details

Construction

Corrugated exterior and interior

Standards

ATEX Directive 94/9/CE
DIN EN 61386-1 (VDE 0605-1)
DIN EN 61386-22 (VDE 0605-22)

Conduit fittings

Industrial grade



Straight

90° Elbow

IP Rating	IP67	IP67	
Outside Ø (mm)	Part Number	Part Number	Thread
10	TNC-M107B	TWC-M107B	M12
10	TNC-M127B		M16
10	TNC-M167B		M20
13	TNC-M10B	TWC-M10B	M12
13	TNC-M120B		M16
15.8	TNC-M12B	TWC-M12B	M16
21.2	TNC-M16B	TWC-M16B	M20
21.2	TNC-M226B		M25
28.5	TNC-M22B	TWC-M22B	M25
34.5	TNC-M28B	TWC-M28B	M32
42.5	TNC-M36B	TWC-M36B	M40
54.5	TNC-M48B	TWC-M48B	M50

Technical Details - Conduit fittings

Material:	Polyamide 6 Nitrile-Butadiene rubber (FEC only)
Temperature	-40°C to +105°C
Flammability	UL94-HB
Standards	ATEX Directive 94/9/CE DIN EN 61386-1 (VDE 0605-1) DIN EN 61386-22 (VDE 0605-22)

Simple assembly fittings

Align conduit and fitting



Push together until click is heard



Lift tab on fitting to release



Straight Flange

90° Elbow Flange

End cap

Conduit clip

IP Rating	IP65/67	IP65/67	IP66			Not applicable
			Part Number	Cable Ø (mm)		
Outside Ø (mm)	Part Number	Part Number		min	max	Part Number
10			FEC-07B	2	7	NFH-07B
13			FEC-10B	3	10	NFH-10B
15.8		TWOC-12B	FEC-12B	4.2	12	NFH-12B
21.2		TWOC-16B	FEC-16B	6	16	NFH-16B
28.5		TWOC-22B	FEC-22B	6	22	NFH-22B
34.5		TWOC-28B	FEC-28B	6	28	NFH-28B
42.5		TWOC-36B	FEC-36B	6	36	NFH-36B
54.5		TWOC-48B	FEC-48B	6	48	NFH-48B
67.2	TNOC-56B	TWOC-56B				NFH-56B
82.5	TNOC-70B	TWOC-70B				NFH-70B
106	TNOC-95B	TWOC-95B				NFH-95B

Nylon Cable Gland

Supplied with Locknut

Material:

Body: Polyamid
 Sealing: Modified Rubber
 Properties: UL94 (V2), Halogen, phosphor and cadmium free - RoHS compliant

Temperature Range:

-40°C to +100°C (120°C short term)

Protection Class:

IP68
 UV Resistant

Part Number	Thread	Thread Length (mm)	Cable Clamping Range (mm)	Locknut to suit
HSK-M12B-L	M12	15	3-6.5	Included
HSK-M16B-DL	M16	15	5-10	
HSK-M20B-DL	M20	15	8-14	
HSK-M25B-L	M25	15	13-18	
HSK-M32B-L	M32	15	18-25	
HSK-M40B	M40	13	22-32	
HSK-M50B	M50	14	30-38	



Nylon Spiral Gland

Locknut to be ordered separately

Material:

Body: Polyamid
 Sealing: Modified Rubber
 Properties: UL94 (V2), Halogen, phosphor and cadmium free - RoHS compliant

Temperature Range:

-40°C to +100°C (120°C short term)

Protection Class:

IP68

Part Number	Thread	Thread Length (mm)	Cable Clamping Range (mm)	Locknut to suit
HSK-F-M16B-OR	M16	8	4-8	GMK-M16B
HSK-F-M20B-OR	M20	9	6-12	GMK-M20B
HSK-F-M25B-OR	M25	11	13-18	GMK-M25B



Thread Enlarger

Includes O-Ring, IP68



Part Number	Thread Conversion	Pack Qty
EWM-M16/M20	M16 to M20	50
EWM-M20/M25	M20 to M25	50
EWM-M25/M32	M25 to M32	25
EWM-M32/M40	M32 to M40	25
EWM-M40/M50	M40 to M50	20

Thread Reducer

Includes O-Ring, IP68



Part Number	Thread Conversion	Pack Qty
REM-M20/M16	M20 to M16	100
REM-M25/M20	M25 to M20	50
REM-M32/M25	M32 to M25	25
REM-M40/M32	M40 to M32	25
REM-M50/M40	M50 to M40	8

Blanking Plugs

Includes O-Ring, IP68



Part Number	Thread	Pack Qty
DPMC-M16	M16	100
DPMC-M20	M20	100
DPMC-M25	M25	100
DPMC-M32	M32	50

Brass Cable Gland

Supplied with Locknut

Material:

Body: Nickel plated brass
 Insert: Polyamide
 Sealing: Modified Rubber

Temperature Range:

-40°C to +100°C (120°C short term)

Protection Class:

IP68

Part Number	Thread	Thread Length (mm)	Cable Clamping Range (mm)	Locknut to suit
HSM-M16-DL	M16	10	5-10	Included
HSM-M20-DL	M20	10	8-14	
HSM-M25-DL	M25	12	13-18	
HSM-M32-DL	M32	12	18-25	
HSM-M40-L	M40	15	22-30	
HSM-M50-L	M50	15	30-38	
HSM-M63-L	M63	15	37-44	



Stainless Steel Cable Gland

Locknut to be ordered separately

Material:

Body: SUS 304
 Insert: Polyamide
 Sealing: Modified Rubber

Temperature Range:

-40°C to +100°C (120°C short term)

Protection Class:

IP68

Part Number	Thread	Thread Length (mm)	Cable Clamping Range (mm)	Locknut to suit
HSMS-M20	M20	7	6-12	GMS-M20
HSMS-M25-D	M25	7	13-18	GMS-M25
HSM-SM32-D	M32	8	18-25	GMS-M32



EMC Brass Cable Gland

Supplied with Locknut

Material:

Body: Nickel plated brass
 Insert: Polyamide
 Sealing: Modified Rubber

Temperature Range:

-40°C to +100°C (120°C short term)

Protection Class:

IP68

Part Number	Thread	Thread Length (mm)	Cable Clamping Range (mm)	Locknut to suit
HSM-EMVSC-M16L	M16	10	4-8	Included
HSM-EMVSC1-M20L	M20	10	9-14	
HSM-EMVSC-M25L	M25	12	11-16	
HSM-EMVSC-M32L	M32	12	15-21	
HSM-EMVSC-M40L	M40	15	21-30	
HSM-EMVSC-M50L	M50	15	30-38	
HSM-EMVSC-M63L	M63	15	37-44	
HSM-EMVSC1-M63L	M63	15	38-53	



KDSClick Cable Entry System

Revolutionary IP66 cable entry system

Fast. Safe. Very simple. Our KDSClick cable entry system, is a cable management solution for switchgear cubicles, enclosures, and machines, that features secure seals and strain relief for pre-assembled and non-assembled cables – with or without connectors. KDSClick, saves you time, and provides you with maximum versatility.

THREE PARTS, MANY SOLUTIONS! - A frame. An inlay. A seal. - The modular design of these three basic components, guarantees maximum versatility, variability and variety.

The seals can be removed by pressing from the outside, inwards. Changes, retrofits, service work, or the readjustment of cable lengths, can be made when needed, without removing the frame. An optional inner locking frame can be used to prevent the possibility of unwanted external manipulation.

The new KDS-FP flange plate provides manufacturers of machines with a very cost-effective, convenient feed-through solution. It can be used to adapt housings and switchgear cabinets to fit your updated requirements at any time, and can also considerably simplify your warehousing.



Frames

IP66

Made from a single mould, the one-piece frame is quick and easy to assemble. It is made of sturdy, glass-fibre reinforced plastic. The foamed seal gasket, guarantees an optimal seal with IP66 protection, even on painted or rough surfaces. Dimensions correspond with standard industrial multipole cutouts (except single row frames). Note: 4 x small inserts takes up the same space as 1 x large insert in the frame.



KDS-SR 1-4 BK KDS-SR 6/10 BK KDS-SR 8/16 BK KDS-SR 10/24 BK KDS-FP 2 x 10/24 KDS-FP 3 x 10/24

	KDS-SR 1-4 BK	KDS-SR 6/10 BK	KDS-SR 8/16 BK	KDS-SR 10/24 BK	KDS-FP 2 x 10/24	KDS-FP 3 x 10/24
Dimensions (mm)	70x81	70x106	70x126	70x153	70x153	70x153
Small insert spaces	4	6	8	10	20	30
Mounting frame	28506.4	28500.4	28502.4	28504.4	28660.4	28661.4
Locking frame	28507.4	28501.4	28503.4	28505.4	28664.3	28664.3



KDS-SR-FB1/A KDS-SR-FB2/A KDS-SR-FB2/B KDS-SR-FB3/A KDS-SR-FB3/B KDS-SR-FB3/C KDS-SR-FB3/D

	KDS-SR-FB1/A	KDS-SR-FB2/A	KDS-SR-FB2/B	KDS-SR-FB3/A	KDS-SR-FB3/B	KDS-SR-FB3/C	KDS-SR-FB3/D
Dimensions (mm)	73x39	98x39	98x39	120x39	120x39	120x39	120x39
Mounting frame	28700.4	28701.4	28702.4	28703.4	28704.4	28705.4	28706.4



KDS-SR-FB4/A KDS-SR-FB4/B KDS-SR-FB4/C KDS-SR-FB4/D KDS-SR-FB4/E KDS-SR-FB4/F

	KDS-SR-FB4/A	KDS-SR-FB4/B	KDS-SR-FB4/C	KDS-SR-FB4/D	KDS-SR-FB4/E	KDS-SR-FB4/F
Dimensions (mm)	147x39	147x39	147x39	147x39	147x39	147x39
Mounting frame	28707.4	28708.4	28709.4	28710.4	28711.4	28712.4

Split Cable Glands

IP66

For metric break-outs, CONTA-CLIP provides split cable glands, from M20 to M63 for cables with or without connectors. During servicing or retrofitting, with pre-assembled cable harnesses, cables with diameters from 2 to 35 mm can quickly and safely be guided into the switch-gear cabinet or housing, and then sealed to IP66. The divisible system ensures quick and simple assembly. The slitted seal has a wave-cut profile that ensures a reliable seal and a totally secure attachment. The seal is first placed around the cable and then inserted in one of the two halves. Depending on the size of the cable gland, up to four seals can be inserted, (*M40 accepts large seal only).



Small (accepts 1 x small seal)

	M20	M25	M32
Part Number	28610.4	28611.4	28612.4



Large (accepts 1 x large seal or 4 x small seals*)

	M40	M50	M63
Part Number	28613.4	28614.4	28615.4

Round Frames

IP66

Round cable entries - The round cable entry KDS-R ensures quick and secure assembly of hoses and electrical cables in switchboxes and switchgear cabinets. The seals (TPE) integrated into the cable entry ensure an outstanding seal in accordance with IP66 on painted and rough surfaces.

Thread adaptor - The two-piece thread and locking adaptor is screwed together with the round cable entry. It locks with a form fit with the cable entry and therefore ensures that the seals and inlays are mechanically secured. The thread and locking adaptors located on the switchgear cabinet or housing interior are available in six common diameters for metric break-outs from M20 – M32 and M40 – M63.



M20 - M32

Thread	Cable Entry Frame	Thread Adaptor	Locknut
M20	28770.4	28771.4	28616.4
M25		28772.4	28617.4
M32		28773.4	28618.4



M40 - M63

Thread	Cable Entry Frame	Thread Adaptor	Locknut
M40	28774.4	28775.4	28619.4
M50		28776.4	28620.4
M63		28777.4	28621.4

Inlays

IP66

The click-in inlays, allow for a requirements-based dimensioning of the frame opening, for the seal being used. An audible “click”, confirms a correct installation. So you can variably configure cable entries to match various requirements, (for cables, lines, tubing, pneumatic and hydraulic lines).



Inlay for vertical split

Inlay T shape

Inlay for 4 way splits

Inlay for 6 way splits

Part Number	28516.4	28517.4	28518.4	28519.4
-------------	---------	---------	---------	---------

Seals (inserts)

IP66

The seal's tapered shape, allows it to be easily pressed in. It reliably seals the gaps, and provides strain relief, in accordance with DIN EN 62444. The seals are installed by pressing them from the inside outwards into the openings of the previously installed inlays. Their wave-cut profile, make them easy to install, and ensures a perfect fit around the cables. Note: 4 x small inserts takes up the same space as 1 x large insert. Black inserts stocked in Australia. Grey available ex Germany, upon request, and subject to MOQ's.

Seal specifications:

- Material: TPE
- Flammability: UL94 HB
- Temperature range: – 40 °C to +120 °C (static)
- Halogen-free, silicone-free
- Excellent resistance to chemicals
- UV-stabilized
- Protection: IP66
- Grey UL94 V0 seals also available upon request



Small insert

Large insert

Small insert		Small insert		Large insert		Large insert	
Cable Ø (mm)	Black	Cable Ø (mm)	Black	Cable Ø (mm)	Black	Cable Ø (mm)	Black
Blank	28520.4	13-14	28533.4	Blank	28534.4	24-25	28545.4
1-2	28521.4	2x 4-5	28555.4	14-15	28535.4	25-26	28546.4
2-3	28522.4	2x 5-6	28556.4	15-16	28536.4	26-27	28547.4
3-4	28523.4	2x 7	28689.4	16-17	28537.4	27-28	28548.4
4-5	28524.4	2x 8	28691.4	17-18	28538.4	28-29	28549.4
5-6	28525.4	4x 2-3	28557.4	18-19	28539.4	29-30	28550.4
6-7	28526.4	4x 3-4	28558.4	19-20	28540.4	30-31	28551.4
7-8	28527.4	4x 5	28672.4	20-21	28541.4	31-32	28552.4
8-9	28528.4	4x 6	28763.4	21-22	28542.4	32-33	28601.4
9-10	28529.4	1x ASI	28559.4	22-23	28543.4	15-34 (cone)	28554.4
10-11	28530.4	2x ASI	28560.4	23-24	28544.4		
11-12	28531.4	2-15 (cone)	28553.4				
12-13	28532.4						

KDS-FB Flat Cable Seals

IP66

The KDS-FB cable entry system for flat cables provides you with outstanding versatility and saves you time while managing cables, especially for forklifts, crane systems and elevator applications. The “fish skin” on the seals mechanically surround the inserted flat cable; they ensure optimum tolerance compensation and IP66 protection. CONTA-CLIP provides KDS-FB in four frame widths and with different divisions for flat and round cables. Sealing elements are available for all common industrial cable sizes.



Type	KDS-DE-FB1						KDS-DE-FB2	
Part Number	28713.6	28714.6	28715.6	28716.6	28717.6	28718.6	28719.6	28720.6
Cable Width (mm)	Blank	19-23	28-33	24-30	19-24	28-33	Blank	32.5-38
Cable Height (mm)		5.5-6	5.5-6	8.5-9	6.5-7	9-9.5		5-5.5



Type	KDS-DE-FB2				KDS-DE-FB3		KDS-DE-FB4	
Part Number	28721.6	28722.6	28723.6	28724.6	28725.6	28726.6	28727.6	28728.6
Cable Width (mm)	45-50.5	47-52	38-43	49-54	Blank	72-77	Blank	85-99
Cable Height (mm)	6-6.5	6-6.5	12.5-13	5-6		5-5.5		4.2-5.2

KDS-DES Multi Cable Seals

IP54

Developing the KDS-DES sealing elements for unassembled cables, CONTA-CLIP has transferred the simple cable entry principle of its KES system to its KDS cable feedthrough system.

To insert a cable, the membrane of the sealing element is first pierced at the marked center, whereupon the cable can be pushed through the selected channel. The design based on the proven KES system ensures reliable sealing according to the degree of protection IP54. The KDS-DES variants currently available accommodate up to eight cables, depending on the cable diameter, which can range between 4.5 mm and 10.5 mm.

KDS-DES sealing elements are compatible with almost all KDS solutions.



Part Number	28800.6	28801.6	28802.6	28803.6	28804.6	28805.6	28806.6
Cable Ø (mm)	2x10.5	3x9.5	3x8.5	4x7.5	7x6.5	8x5.5	8x4.5

KES Cable Entry System

IP66

When feeding in non-assembled cables, lines and pneumatic hoses (without connected plugs), CONTA-CLIP has a wide range of products that offer alternatives to cable glands or single-membrane feed-throughs.

The KES cable entries are very flat; they enable space-saving professional cable entries with a very tight seal. Many cables (with various diameters from 3.2 to 20.5 mm) can be inserted in a confined space and double sealed (IP66) thanks to the special construction of the conical grommets. The materials used comply with the UL 94 V-0 classification.

The KES is designed for use in mounting cut-outs the same dimensions as 24-pin industrial multipoles, and is available in 3 different mounting options.



Screw on - KES



The KES (without threaded bush) is screwed from the outside onto the housing wall.

Screw/Clip - KES-GB



Using the latching clips, the KES-GB latches onto the outside of the housing wall. It is then screwed on from the inside, using the integrated threaded bushes.

Snap on - KES-R



The KES-R is latched from outside to the housing wall using the latching clips.



Mount Type

KES	28630.6	28631.6	28632.6	28633.6
KES-GB	28640.6	28641.6	28642.6	28643.6
KES-R	28650.6	28651.6	28652.6	28652.6
Cable entry sizes (mm)	10 x 3.2-6.3	5 x 3.2-6.3	8 x 3.2-5.5	2 x 3.2-6.3
	3 x 16-20.5	2 x 4-7.5	6 x 5-8.5	9 x 4-7.5
		3 x 5.5-10.5	2 x 9.5-14.5	1 x 5.5-10.5
		1 x 8-12.5		1 x 8-12.5
		3 x 12-16.2		3 x 12-16.2



Mount Type

KES	28634.6	28635.6	28636.6	28637.6
KES-GB	28644.6	28645.6	28646.6	28647.6
KES-R	28654.6	28655.6	28656.6	28657.6
Cable entry sizes (mm)	4 x 3.2-6.3	12 x 3.2-6.3	1 x 3.2-6.3	32 x 3.2-6.3
	2 x 4-7.5	8 x 5.5-10.5	14 x 4-7.5	
	1 x 5.5-10.5		4 x 5.5-10.5	
	10 x 8-12.5		2 x 8-12.5	

KES-E Cable Entry System

IP54

The KES-E cable entry plates enable quick and safe feed-in of non-assembled cables and conduits into control cabinets and machine enclosures, without the need for cable glands. The cable entry plate can be installed without tools. The plate is simply pressed into a 36 mm x 112 mm standard opening in a cabinet or housing wall. KES-E-R Round frames fit into 50 mm Ø hole. The gasket's elastic inner sealing lip tightly curves around the opening inside the housing, ensuring a tight and vibration-proof hold.

The cable entry system provides IP54 protection against dust and splashing water ingress, and suitability for ambient temperatures from -40 °C to +90 °C.



Wall Thickness

1.5-2.5mm	28810.6	28811.6	28812.6	28813.6
2.5-4mm	28840.6	28841.6	28842.6	28843.6
Cable entry sizes (mm)	12 x 1.0 – 15	14 x 1.0 – 12.1	5 x 1.0 – 10.5	4 x 1.0 – 6.5
			12 x 1.0 – 12.6	5 x 1.0 – 10.5
				5 x 1.0 – 12.5
				4 x 1.0 – 16.1



Wall Thickness

1.5-2.5mm	28814.6	28815.6	28816.6	28817.6	28818.6
2.5-4mm	28844.6	28845.6	28846.6	28847.6	28848.6
Cable entry sizes (mm)	12 x 1.0 – 6.5	16 x 1.0 – 6.5	12 x 1.0 – 7.2	48 x 1.0 – 6.5	33 x 1.0 – 5.3
	7 x 1.0 – 12.1	4 x 1.0 – 12.1	17 x 1.0 – 6.4		9 x 1.0 – 6.4
		4 x 1.0 – 16.1	12 x 1.0 – 5.0		8 x 1.0 – 8.3
		2 x ASI	1 x 1.0 – 4.7		



Wall Thickness

1.5-2.5mm	28829.6	28830.6	28831.6	28832.6	28833.6	28834.6	28835.6
2.5-4mm	28859.6	28860.6	28861.6	28862.6	28863.6	28864.6	28865.6
Cable entry sizes (mm)	5 x 1.0 – 7.0	7 x 1.0 – 7.2	10 x 1.0 – 9.2	4 x 1.0 – 5.3	2 x 1.0 – 4.0	16 x 1.0 – 6.3	35 x 1.0 – 5.2
	4 x 1.0 – 18.0	3 x 1.0 – 11.2	2 x 1.0 – 11.2	5 x 1.0 – 6.3	2 x 1.0 – 6.0	4 x 1.0 – 9.3	
		1 x 1.0 – 22.5		3 x 1.0 – 9.5	4 x 1.0 – 7.2		
				4 x 1.0 – 11.3	5 x 1.0 – 9.4		
					5 x 1.0 – 12.0		

Distribution Boards

CBI Advantage Range, IP42

The advantage range of distribution switchboards offer a durable and robust product, designed for optimum field versatility coupled with time saving installation features. This multipurpose range of distribution switchboards is designed for commercial or light industrial applications, with no compromise in quality and available at an affordable price.

Features

- Spacious design affords more useable space
- Additional switchboard modules can be added to the top, bottom and sides for modular solutions
- Recommended for use with our DIN mounted QF Range of MCBs and QF18/SE7 RCBOs
- 16 pole DIN knock outs for ancillary equipment at bottom of board
- Left hand hinged door (easily converted to right hand hinged)
- Door opens to 180° fitted with concealed hinges and flush, lockable catch
- Top and bottom removable gland plates
- Hinged removable escutcheon
- CL001 Key Lock
- 250A Main Switch



Technical Data

- Complies with AS/NZS 61439
- IP62 degree of protection
- IP56 degree of protection
- Quality 250A, 20kA 0.2s type tested busbar system
- Enclosure depth: 225mm (including door)
- Depth below escutcheon: 150mm
- Robust 1.5mm steel construction
- Baked polyester powder coated finish in N12 Pastel Grey to AS 2700.
- Also available in X15 Orange finish as an optional extra

Number of Poles	Dimensions (mm)			Dustproof IP 62 Part Number	Weatherproof IP 56 Part Number
	Height	Width	Depth		
24	1000	580	225	ADVD24M250	ADVPD24M250
36	1000	580	225	ADVD36M250	ADVPD36M250
48	1200	580	225	ADVD48M250	ADVPD48M250
60	1400	580	225	ADVD60M250	ADVPD60M250
72	1400	580	225	ADVD72M250	ADVPD72M250
84	1600	580	225	ADVD84M250	ADVPD84M250
96	1600	580	225	ADVD96M250	ADVPD96M250

Miniature Circuit Breakers

Suit CBI Advantage Range
Distribution Boards



Current (A)	Curve 2 (C Curve)		
	Single pole	2 pole	3 pole
6	QFD18206	QFD28206	QFD38206
10	QFD18210	QFD28210	QFD38210
16	QFD18216	QFD28216	QFD38216
20	QFD18220	QFD28220	QFD38220
25	QFD18225	QFD28225	QFD38225
32	QFD18232	QFD28232	QFD38232
40	QFD18240	QFD28240	QFD38240
50	QFD18250	QFD28250	QFD38250
63	QFD18263	QFD28263	QFD38263

RCBO

Suit CBI Advantage Range
Distribution Boards



Current (A)	Curve 2 (C Curve)	
	Single pole	3 pole
6	QF10A206	
10	QF10A210	SFRSE7C10
16	QF10A216	SFRSE7C16
20	QF10A220	SFRSE7C20
25	QF10A225	SFRSE7C25
32	QF10A232	SFRSE7C32
40		SFRSE7C40
50		SFRSE7C50
63		SFRSE7C63

Miniature Circuit Breakers



Isolators

1.5kA

Current (A)	Single pole Part Number	
	6kA C Curve	10kA C Curve
2	SFRSM161C2	-
4	SFRSM161C4	-
6	SFRSM161C6	SFRSM9101C6
10	SFRSM161C10	SFRSM9101C10
16	SFRSM161C16	SFRSM9101C16
20	SFRSM161C20	SFRSM9101C20
25	SFRSM161C25	SFRSM9101C25
32	SFRSM161C32	SFRSM9101C32
40	SFRSM161C40	SFRSM9101C40
50	SFRSM161C50	SFRSM9101C50
63	SFRSM161C63	SFRSM9101C63

3 pole Part Number		
6kA C Curve	10kA C Curve	10kA D Curve
-	-	-
-	-	-
SFRSM163C6	SFRSM9103C6	SFRSM9103D6
SFRSM163C10	SFRSM9103C10	SFRSM9103D10
SFRSM163C16	SFRSM9103C16	SFRSM9103D16
SFRSM163C20	SFRSM9103C20	SFRSM9103D20
SFRSM163C25	SFRSM9103C25	SFRSM9103D25
SFRSM163C32	SFRSM9103C32	SFRSM9103D32
SFRSM163C40	SFRSM9103C40	SFRSM9103D40
SFRSM163C50	SFRSM9103C50	SFRSM9103D50
SFRSM163C63	SFRSM9103C63	SFRSM9103D63

Current (A)	Single pole	3 pole
63	SFRSD1163	SFRSD1363
80	SFRSD1180	SFRSD1380
100	SFRSD11100	SFRSD13100
125	-	AZ200223

* AZ200223 manufactured by Schrack

Part Number	MCB Accessories
SFRSMOF	Aux 1NO + 1 NC
SFRMSD	Alarm Contact
SFRSMMX	Shunt 110-415VAC
SFRSMMVMN	Over and Under voltage release

3 Pole RCBO

3P+N, 30mA, Type A

Suit CBI Advantage Range Distribution Boards

The SFRSE7 from Cbi-electric is a DIN mount 3-pole 10 kA RCBO that comes in a compact 3-module width. At 54 mm wide, the SFRSE7 fits the existing CBI Advantage distribution board chassis while allowing for 3-pole MCBs to be interchanged with a 3-pole RCBO.

The SE7 is DIN mountable for use in enclosures for providing three-phase overload, short circuit and earth leakage protection. The SE7 RCBO range is available in C and D curves from 10–63 A.

With the ever-increasing demand not only for RCBO protection but for compact protection solutions, the three-phase RCBO is a suitable addition to the CBI Advantage range of distribution boards and the CBI range of circuit protection devices.



Single Pole RCBO

1P+N, 30mA, Type A

Current (A)	10kA Part Number	
	C Curve	D Curve
10	SFRSE7C10	SFRSE7D10
16	SFRSE7C16	SFRSE7D16
20	SFRSE7C20	SFRSE7D20
25	SFRSE7C25	SFRSE7D25
32	SFRSE7C32	SFRSE7D32
40	SFRSE7C40	SFRSE7D40
50	SFRSE7C50	SFRSE7D50
63	SFRSE7C63	SFRSE7D63

Current (A)	6kA Part Number
	C Curve
6	SFRSE1C6
10	SFRSE1C10
16	SFRSE1C16
20	SFRSE1C20
25	SFRSE1C25
32	SFRSE1C32
40	SFRSE1C40

AC Moulded Case Circuit Breakers

690V AC

CBI offers a comprehensive range of power distribution products that are designed and manufactured to meet the challenges of modern installations. Compact frame sizes with high capacities to match their flexible capabilities.

Current (A)	Breaking Capacity (kA)	No of Poles	Trip unit (release)			Frame Size	Dimensions (mm)	Part Number
			Magnetic	Thermal	Electronic			
100	50	3	Fixed	Adjustable		1	105 x 160 x 86	F50DV100
125	50	3	Fixed	Adjustable		1	105 x 160 x 86	F50DV125
160	50	3	Fixed	Adjustable		1	105 x 160 x 86	F50DV160
200	50	3	Fixed	Adjustable		1	105 x 160 x 86	F50DV200
250	50	3	Fixed	Adjustable		1	105 x 160 x 86	F50DV250
160 - 400	65	3			Adjustable	2	140 x 260 x 110	K65DEV400
252 - 630	65	3			Adjustable	2	140 x 260 x 110	K65DEV630



Common accessories across all frame sizes from auxiliaries, alarm contacts, shunts, under-voltage trips (UVT's). Handles and motor operators are also easily fitted without the use of special tools or instructions. All fitted quickly and easily saving time, effort and expense.

Trip units		
Voltage	Undervoltage	Shunt
24V AC/DC	CS-UVT800-24	CS-SHT800-24
230V AC/DC	CS-UVT800-230	CS-SHT800-230
415V AC	CS-UVT800-415	CS-SHT800-415

Contact Blocks	
Part number	Function
CS-AUX160-800	Aux 1CO
CS-ALM160-800	Alarm
CS-AUXTRPIN800	Fault trip

Handles			Terminal Cover (pair)	
Frame	Direct	Extension	Short	Long
1	CS-DH250	CS-EH250	CS-ITS23	CS-ITL23
2	CS-DH630	CS-EH630	CS-ITS33	CS-ITL33

DC Moulded Case Circuit Breakers

250V DC per pole, Non Polarised

Noark Ex9MD DC Moulded Case Circuit Breakers are intended mainly for photovoltaic and battery applications. Testing according to IEC / EN 60947-2 standards ensures reliability for a wide variety of applications, including isolation.



Current (A)	Moulded Case Circuit Breaker				IP65 Enclosure	1 C/O Aux Contacts	24V DC Shunt	Terminal Covers
	Type	No of Poles	Total DC (V)	Part Number				
80	Ex9MD1B	2	500	852894	850771	852508	20292	20306
125	Ex9MD1B	2	500	852896	850771	852508	20292	20306
160	Ex9MD2B	2	500	852899	850771	852508	23179	23192
250	Ex9MD2B	2	500	852902	850771	852508	23179	23192
400	Ex9MD3B	3	750	852724	NA	852508	23179	25125
630	Ex9MD4B	3	750	852763	NA	852508	26933	26904
800	Ex9MD5B	3	750	852793	NA	852508	26933	26904

DC Miniature Circuit Breakers

250V per pole, K Curve, Non Polarised

The Ex9BP DC miniature circuit breakers (MCBs) from Noark are a reliable and versatile option for protecting electrical systems in a variety of settings.

Ex9BP MCBs are non-polarized, which means they can be used in both positive and negative polarity applications. They also have a high-rated short circuit breaking capacity of 6 kA, making them suitable for use in high-power applications.

In addition to their safety and performance features, the Ex9BP MCBs also offer a wide range of accessories. These accessories include auxiliary and signal contacts, shunt trip release, and undervoltage release. This allows you to customize the Ex9BP MCBs to meet the specific needs of your application.

If you are looking for a DC MCB that you can trust, then the Ex9BP is the perfect choice for you.



Current (A)	500V DC Double pole	1C/O Aux Contacts
10	90118	100540
16	90120	100540
20	90121	100540
25	90122	100540
32	90123	100540
40	90124	100540
50	90125	100540
63	90126	100540

IP65 Load Centres

UV Resistant, UL94-V0, Surface Mount



6 Pole

MS-6P



9 Pole

MS-9P



12 Pole

MS-12P



18 Pole

MS-18P



24 Pole

MS-24P



36 Pole

MS-36P

IP67 Connectors

Ultra flat, prewired

Our Techno TEEPLUG® TH420 Ultra thin Plug and Socket Connector is only 4mm thick, and is ideal where space constraints exist. Rated at IP67, and 6A at 230V, these connectors are ideal for under floor heating, facade lighting, window shutters, or any other application requiring a super thin, highly reliable, connector solution. The plug and socket are both supplied with a 450mm long preterminated cable, 2x0.75mm²

Contact marking	1 - 2
Operating current	max. 6A
Operating voltage	max. 230V
Operating temperature	-20°C / +110°C
Conductor size	0.75 mm ²
Dimensions (mated)	22x84mm



Description	Inline Plug	Inline Socket
2 Pole Connector	THH.420.A2B	THH.420.B2B

IP68 Connectors

Screw Termination

Our Techno TEEPLUG® TH381 Micro Plug and Socket Connector is an amazingly small 14mm in diameter, and only 90mm in length when mated, and allows the installation of electrical equipment to a high protection class, IP68/69K. Quick, easy and intuitive installation, is made without the use of cast resin, gel or heat shrink. The mated connectors are held securely together, with a simple press to release the locking mechanism.

Assembly Spanner - P/N 6000462KC

Operating current	max. 10A AC/DC
Operating voltage	max. 400V AC / 60V DC
Operating temperature	-40°C / +125°C
Conductor size	0.25 mm ² - 1.5 mm ²
Cable diameter	5.8 mm - 6.9 mm
Dimensions (mated)	Ø14x90mm



Description	Inline Plug	Panel Mount Plug (M16 locknut included)	Inline Socket	Panel Mount Socket (M16 locknut included)	4 way distributor (1 plug - 3 socket)
2 Pole Connector	THB.381.A2AZ	THB.381.N2A	THB.381.B2AZ	THB.381.P2A	THH.625.A2A
3 Pole Connector	THB.381.A3EZ	THB.381.N3E	THB.381.B3EZ	THB.381.P3E	THH.625.A3E
Caps to suit	6000447GT	6000447GT	6000448GT	6000448GT	

Our Techno TEEPLUG® TH387 Plug and Socket Connector, allows for the installation of electrical equipment to a high protection class, IP68. The IP68 connection is made quickly and safely without the use of cast resin, gel or heat shrink. The TH387 is additionally impressive by its small dimensions, that allow their use in the smallest of spaces. A threaded lock ring secures the mated connectors. A 4 way distributor is also available for quick branching of cables (cover any unused sockets with caps if not being used, and you can also use it as a 2 or 3 way distributor)

Assembly Spanner - P/N 6000337BC

Operating current	max. 17.5A /10A DC
Operating voltage	max. 450V
Operating temperature	-40°C / +125°C
Conductor size (4 pole)	0.5 mm ² - 4.0 mm ²
Conductor size (5 pole)	0.5 mm ² - 1.5 mm ²
Cable diameter	7.0 mm - 13.5 mm
Dimensions (mated)	Ø23x113 mm



Description	Inline Plug	Panel Mount Plug Thread	Inline Socket	Panel Mount Socket Thread	4 way distributor (1 plug - 3 socket)
4 Pole Connector	THB.387.A4A.LZ	THB.387.C4AZ	THB.387.B4A.LZ	THB.387.D4AZ	THH.624.A4A
Caps to suit 4 Pole	6DB021900	6DB023500	6DB023400	6DB02180C	refer panel mount
M25 Locknut to suit 4 Pole		GMK-M25B		GMK-M25B	
5 Pole Connector	THB.387.A5A.LZ	THB.387.N5A*	THB.387.B5A.LZ	THB.387.P5A*	THH.624.A5A
Caps to suit 5 Pole	6DB021900	6DB021900	6DB023400	6DB023400	refer panel mount

*M20, locknut included



IP68 Connectors

Screw Termination

Our Techno TEEPLUG® TH405 Plug and Socket Connector allows for the installation of electrical equipment to a high protection class, IP68. The IP68 connection is made quickly and safely without the use of cast resin, gel or heat shrink. The TH405 is additionally robust and easy to work with. The bayonet style locking mechanism, is backed up by a secondary locking clip on the body of the connector, to ensure that the connectors stay mated.

Operating voltage	max. 400V AC
Operating temperature	-40°C / +125°C
Cable diameter	7.0 mm - 14 mm
Dimensions (mated)	Ø36.5x130 mm



Description	Current	Conductor	Inline Plug	Panel Mount Plug (M28)	Inline Socket	Assembly Tool
3 Pole Connector	25A	0.5 mm ² - 4 mm ²	THB.405.A2BZ		THB.405.B2BZ	600012200
5 Pole Connector	17.5A	0.5 mm ² - 4 mm ²	THB.405.A2AZ		THB.405.B2AZ	600009600
6 Pole Connector	17.5A	0.5 mm ² - 4 mm ²	THB.405.A2EZ		THB.405.B2EZ	6DB00750C
8 Pole Connector	10A*	0.25 mm ² - 1 mm ²	THB.405.A8AZ	THB.406.A8A	THB.405.B8AZ	600052600
Caps to suit			6DB00900C	6DB00900C	6DB058000	

*400V AC 60V DC

IP68 Connectors

Piercing/Screw Termination

Our Techno TEEPLUG® TH370 Insulation piercing connector solution is a quick and intuitive system for tapping into trunk cabling to install luminaires. Installation is very fast due to the insulation piercing terminals on the TH370 socket, and can be installed after the trunk cabling has been installed, allowing simple and effective tap off points to plug luminaires into. Ideal for tunnel lighting, decorative lighting, Christmas lighting or even powering irrigation systems.

Operating current	max. 17.5A
Operating voltage	max. 400V AC
Operating temperature	-40°C / +125°C
Conductor size (Socket)	2.5 mm ² - 4 mm ²
Conductor size (Plug)	0.5 mm ² - 2.5 mm ²
Cable diameter (Socket)	6 mm - 7 mm
Cable diameter (Plug)	5 mm - 12 mm



Description	Insulation Piercing Socket	Inline Plug
2 Pole Connector	THB.370.A2A	THB.384.P2A



Separate back shell component from connector and place cable between the connector and back shell

Tighten back shell to pierce the cable insulation.

No tools required for fast assembly of the socket to the trunk cabling

Connect plug to provide IP68 protected power to the luminaire. Fit the IP68 cap when not in use

IP68 Cable Joiners Screw Termination



Part number	Poles	Dimensions	Conductor	Rating	Cable diameter
THB.391.A4A.LZ	4	Ø23x95 mm	0.5 - 4mm ²	32A 450V	7 - 13.5 mm



Part number	Poles	Dimensions	Conductor	Rating	Cable diameter
THB.392.A4A.LR	4	Ø23x95 mm	0.5-2.5mm ²	17.5A 450V	7 - 13.5 mm



Part number	Poles	Dimensions	Conductor	Rating	Cable diameter
THB.400.D1AZ	5	Ø32x130 mm	0.5 - 4mm ²	32A 450V	8 - 17 mm



Part number	Poles	Dimensions	Conductor	Rating	Cable diameter
THB.402.D4AR	4	Ø32x91x121	0.5 - 4mm ²	32A 450V	7 - 13.5 mm

Part number	Poles	Dimensions	Conductor	Rating	Cable diameter
THB.390.C1AZ	3	Ø32x91x93	0.5 - 4mm ²	32A 450V	7 - 13.5 mm

IP67 Junction Box

Screw Termination

Our Techno TEEPLUG® TH200 junction boxes feature a versatile weather proof terminal block connection within an enclosure which has a protection rating up to IP67. The T-Piece construction and 5 pole terminal block greatly reduces installation time in architectural LED lighting applications. Also available in a large range of other terminal block options.



Contact marking	1 - 2 - L - N - E
Operating current	max. 16A
Operating voltage	max. 230V
Operating temperature	-20°C / +110°C
Conductor size	0.5 - 1.5 mm ²
Cable diameter	7.5 - 9.5 mm
Dimensions (mated)	70 x 82 x 20 mm

Part number	Poles
THB.200.E5E	5

Accessories

Suits all connectors with 7-13.5mm cable glands



600013600	Cable OD 1.5 - 4.0 mm
-----------	-----------------------



600037000	Cable OD 5.0 - 6.5 mm
-----------	-----------------------



600012500	Cable OD 2.0 - 4.0 mm
-----------	-----------------------



600030600	Cable OD 4.5 - 5.5 mm
-----------	-----------------------



600012600	Cable OD 2.0 - 4.0 mm
-----------	-----------------------



600018200	Cable OD 2.0 - 3.5 mm
-----------	-----------------------



600022400	Cable OD 1.5 - 3.5 mm
-----------	-----------------------



6000087LF	Cable OD 6.0 - 7.0 mm
-----------	-----------------------



600012700	Cable OD 5.5x11.0 mm
-----------	----------------------



604001100	Cable OD 7.5 - 9.0 mm
-----------	-----------------------



604004900	Cable OD 14.0 mm
-----------	------------------



600013700	Blank
-----------	-------



6000302CC	Connector mount
-----------	-----------------



6000337BC	Spanner
-----------	---------



604003900	Max cable OD 12.5mm
-----------	---------------------



6000156LF	Blank
-----------	-------

Accessories

Suits TH381 series



650000800	Suits THB.381 3 pole
-----------	----------------------



6000473GT	Cable OD 4.0 - 5.0 mm
-----------	-----------------------



6000461GT	Cable OD 1.9 - 2.5 mm
-----------	-----------------------



6000520GT	Cable OD 1.9 - 2.5 mm
-----------	-----------------------

Industrial Multipoles

Industrial Multipole connectors, are specially designed for rigorous environments, and suitable for numerous applications including industrial automation, equipment manufacturing, industrial system connection, stage and theatre lighting, as well as information, and control technology.



Featuring stainless steel handles, and silver plated contacts, (up to 500 mating cycles), these multipoles are built to last!

A connector set consists of four main components:

- Male Insert
- Female Insert
- Hood
- Base (or coupling hood)

Part Number	Gland Size	Cable clamping range
WNA-M20/(D8-14)	M20	8 - 14 mm cable O.D.
WNA-M25/(D9-16)	M25	9 - 16 mm cable O.D.
WNA-M32/(D15-22)	M32	15 - 22 mm cable O.D.
WNA-M40/(D22-32)	M40	22 - 32 mm cable O.D.
M3/N		Coding Pin

Cable glands are to be ordered separately if required.

Mini Connectors

230/400V, 10A, IP65



Contacts	Gland	Inserts		Hood without locking lever	
		Socket	Plug	Top Entry	Narrow Entry
3 pole + earth	M20	HA-003-F	HA-003-M	H3A-TE-2B-M20	H3A-SE-2B-M20
4 pole + earth		HA-004-F	HA-004-M		



Contacts	Gland	Coupling Hood	Base with locking lever		
			Open Entry	Right Angle	Bulkhead Mount
3 pole + earth	M20	H3A-CCT-1L/W-M20	H3A-BK-1L/W	H3A-BK-1L/W-SE	H3A-SF-1L/W-M20
4 pole + earth					

High Power Inserts

Fit inside standard housings



Voltage	400/690 V
Current	35A
No. of Pins	6 Pole + Earth
Hood/Base Size	16 Pole

Voltage	690V
Current	80A
No. of Pins	4 Pole + Earth
Hood/Base Size	16 Pole

Voltage	690V/400V
Current	80A/16A
No. of Pins	4 x 80A + 2 x 16A
Hood/Base Size	16 Pole

Description	Part No
Socket Insert	HSB-006-F
Plug Insert	HSB-006-M

Description	Part No
Socket Insert	HK-004/0-F
Plug Insert	HK-004/0-M

Description	Part No
Socket Insert	HK-004/2-F
Plug Insert	HK-004/2-M

Double Locking Lever

500V, 16A, IP65



Contacts	Gland	Inserts		Hood without locking lever		Hood with locking lever	
		Socket	Plug	Narrow Entry	Top Entry	Narrow Entry	Top Entry
10 pole + earth	M20	HE-010-F	HE-010-M	H10B-SE-4B-M20	H10B-TE-4B-M20	H10B-SE-2L/SC-M20	H10B-TE-2L/SC-M20
	M25			-	H10B-TEH-4B-M25	-	-
16 pole + earth	M25	HE-016-F	HE-016-M	H16B-SE-4B-M25	H16B-TE-4B-M25	H16B-SE-2L/SC-M25	H16B-TE-2L/SC-M25
	M32			-	H16B-TEH-4B-M32	-	-
24 pole + earth	M25	HE-024-F	HE-024-M	H24B-SE-4B-M25	H24B-TE-4B-M25	H24B-SE-2L/SC-M25	H24B-TE-2L/SC-M25



Contacts	Gland	Coupling Hood	Base with locking lever		Base without locking lever	
			Open Entry	Double Entry	Open Entry with Lid	Double Entry with Lid
10 pole + earth	M20	-	H10B-BK-2L/SC	H10B-SF-2L/SC-2M20	H10B-BK-4B-CV	H10B-SF-4B-CV-2M20
	M25	H10B-CCTH-2L/SC-M25	-	-	-	-
16 pole + earth	M25	H16B-CCTH-2L/SC-M25	H16B-BK-2L/SC	H16B-SF-2L/SC-2M25	H16B-BK-4B-CV	H16B-SF-4B-CV-2M25
	M32	H16B-CCTH-2L/SC-M32	-	-	-	-
24 pole + earth	M25	H24B-CCTH-2L/SC-M25	H24B-BK-2L/SC	H24B-SF-2L/SC-2M25	H24B-BK-4B-CV	H24B-SF-4B-CV-2M25

Single Locking Lever

500V, 16A, IP65



Contacts	Gland	Inserts		Hood without locking lever	
		Socket	Plug	Narrow Entry	Top Entry
6 pole + earth	M20	HE-006-F	HE-006-M	H6B-SE-2B-M20	H6B-TE-2B-M20
48 pole + earth	M32	HE-024-F x2	HE-024-M x2	H48B-SE-2B-M32	H48B-TE-2B-M32
	M40			H48B-SE-2B-M40	H48B-TE-2B-M40



Contacts	Gland	Coupling Hood	Base with locking lever			
			Open Entry	Double Entry	Double Entry with Lid	Open Entry with Lid
6 pole + earth	M20	H6B-CCTH-1L/SC-M20	H6B-BK-1L/SC	H6B-SF-1L/SC-2M20	H6B-SF-1L/SC-CV-2M20	H6B-BK-1L/SC-CV
48 pole + earth	M32	-	H48B-BK-1L/S	-	-	H48B-BK-1L/S-CV

CEEform IEC Plugs & Inlets

Rated to IP67 and conforms to European/International Standards
EN/IEC 60309-1
EN/IEC 60309-2
AS 3123:2005



Inline Plugs

Current	Poles	6h	
		230V Part No	400V Part No
16A	3 Pole	QX278	
	4 Pole		QX282
	5 Pole		QX288
32A	3 Pole	QX290	
	4 Pole		QX294
	5 Pole		QX300
63A	3 Pole	QX1571	
	4 Pole		QX1110
	5 Pole		QX1114
125A	3 Pole	QX3400	
	4 Pole		QX1443
	5 Pole		QX1447

Panel Mount Inlets

		6h	
		230V Part No	400V Part No
		QX826	
			QX827
			QX829
		QX831	
			QX832
			QX834
		QX836	
			QX3656
			QX3658
		QX3665	
			QX3583
			QX1983

Wall Mount Inlets

		6h	
		230V Part No	400V Part No
		QX1003	
			QX1004
			QX1005
		QX1006	
			QX1007
			QX1008
		QX1107	
			QX357
			QX361

CEEform IEC Sockets

Rated to IP67



Inline Sockets

Current	Poles	6h	
		230V Part No	400V Part No
16A	3 Pole	QX540	
	4 Pole		QX544
	5 Pole		QX550
32A	3 Pole	QX552	
	4 Pole		QX556
	5 Pole		QX562
63A	3 Pole	QX1574	
	4 Pole		QX1117
	5 Pole		QX1121
125A	3 Pole	QX3390	
	4 Pole		QX1450
	5 Pole		QX1454

Panel Mount Socket - Straight

		6h	
		230V Part No	400V Part No
		QX218	
			QX222
			QX228
		QX230	
			QX234
			QX240
		QX1264	
			QX1124
			QX1128
		QX3380	
			QX1457
			QX1461

Panel Mount Socket - Angled

		6h	
		230V Part No	400V Part No
		QX1475	
			QX1479
			QX1485
		QX1502	
			QX1506
			QX1551
		QX2180	
			QX205
			QX209
		QX3575	
			QX212
			QX216

CEEform IEC Wall mounted Sockets

Rated to IP67



Switched Socket with Mechanical Interlock



Wall Mounted Socket

Current	Poles	6h	
		230V Part No	400V Part No
16A	3 Pole	QX7012	
	4 Pole		QX5600
	5 Pole		QX5603
32A	3 Pole	QX5793	
	4 Pole		QX5605
	5 Pole		QX5608
63A	3 Pole	QX5911	
	4 Pole		QX5110
	5 Pole		QX5113
125A	3 Pole		
	4 Pole		QX5691
	5 Pole		QX5692

6h		6h	
230V Part No		400V Part No	
QX1192			
		QX1196	
		QX1200	
QX1202			
		QX1206	
		QX1210	
QX128			
		QX132	
		QX136	
QX1381			
		QX139	
		QX143	

Industrial Plugs & Sockets

Heavy Duty

M66 Series Plugs are rated IP66 when fitted to an M66 Series Extension socket or Socket Outlet. The body section is transparent for quick and easy inspection of the terminals and cable entry.

- IP66
- Test standards: IEC947, AS/NZS3112 & AS/NZS3123
- UV Resistant
- Impact Resistant
- UL94 VO. PC material



Inline Straight Plug

Current	3 Pin 250 V			4 Pin 500 V		5 Pin 500 V	
	3 Pin 250 V	4 Pin 500 V	5 Pin 500 V	3 Pin 250 V	4 Pin 500 V	5 Pin 500 V	5 Pin 500 V
10A	56P310	M66P410	M66P510				
15A	M66P315						
20A	M66P320	M66P420	M66P520				
32A	M66P332	M66P432	M66P532				
40A		M66P440	M66P540				
50A		M66P450	M66P550				



Switched Socket Outlet Combination

3 Pin 250 V			4 Pin 500 V		5 Pin 500 V	
3 Pin 250 V	4 Pin 500 V	5 Pin 500 V	3 Pin 250 V	4 Pin 500 V	5 Pin 500 V	5 Pin 500 V
M66C310	M66C410	M66C510				
M66C315						
M66C320	M66C420	M66C520				
M66C332	M66C432	M66C532				
	M66C440	M66C540				
	M66C450	M66C550				



Din Mount Socket

3 Pin 250 V
DINGP010

Installation Contactors

Din rail mountable

Meeting the needs of those involved in building and home automation, as well as manufacturers. Schrack's din rail mountable modular contactors, can be used to switch and control lighting, heating, ventilation and air-conditioning, window shutters, and most other control and automation applications. Schrack contactors, are renowned throughout Europe, for their quiet operation, high quality and affordability.

Part Number	Contacts	AC1 Rated Current	Width	Coil Voltage
BZ326453ME	2 NO	20 A	17.5mm	24V AC
BZ326437ME	2 NO	20 A	17.5mm	230V AC
BZ326438ME	1 NO + 1 NC	20 A	17.5mm	230V AC
BZ326421ME	1 NO + 1 NC	20 A	17.5mm	24V AC
BZ326461ME	4 NO	25 A	35mm	230V AC
BZ326467	4 NC	25 A	53.3mm	230V AC
BZ326442ME	4 NO	40 A	53.3mm	230V AC
BZ326444ME	4 NO	63 A	53.3mm	230V AC



CUBICO Miniature Contactors

3 pole with integrated Aux Contact

Part Number	Rated Power	AC1 Rated Current	AC3 Rated Current	Coil Voltage	Auxiliary Contacts
LZDM1213	5.5kW	20A	12A	230V AC	1NO
LZDM1223	5.5kW	20A	12A	230V AC	1NC
LZDM1210	5.5kW	20A	12A	24V AC	1NO
LZDM1220	5.5kW	20A	12A	24V AC	1NC
LZDM1215	5.5kW	20A	12A	24V DC	1NO
LZDM1225	5.5kW	20A	12A	24V DC	1NC

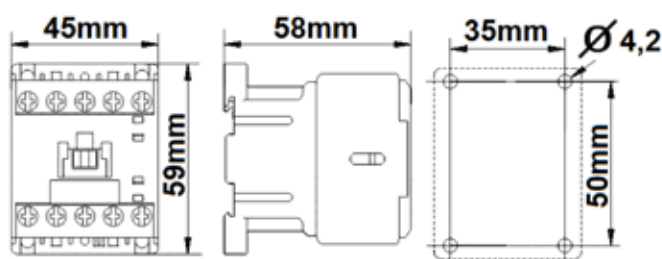


Accessories

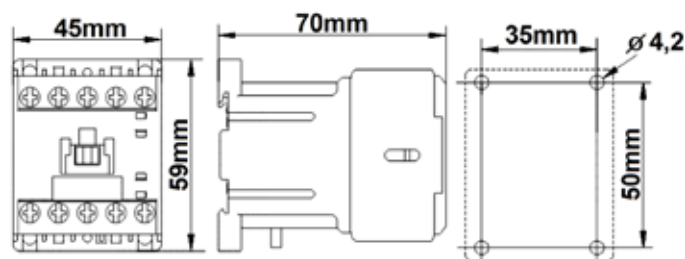
Part Number	Description	Current Range	Voltage	Auxiliary Contacts
LZZMH022	Auxiliary Contacts, front mounting			2NO + 2NC
LZZMV024	Varistor Surge Suppressor		24-48 VAC/DC	
LZZMV024	Varistor Surge Suppressor		110-250 VAC	
LZTM0100	Thermal Overload	0,63 - 1A		1NO + 1NC
LZTM0160	Thermal Overload	1 - 1.6A		1NO + 1NC
LZTM0250	Thermal Overload	1.6 - 2.5A		1NO + 1NC
LZTM0400	Thermal Overload	2.5 - 4A		1NO + 1NC
LZTM0600	Thermal Overload	4 - 6A		1NO + 1NC
LZTM0800	Thermal Overload	5.5 - 8A		1NO + 1NC
LZTM1000	Thermal Overload	7 - 10A		1NO + 1NC
LZTM1300	Thermal Overload	9 - 13A		1NO + 1NC



Dimensions



AC Coil



DC Coil

CUBICO Classic Contactors

3 pole with integrated Aux Contact

Part Number	Rated Power	AC1 Rated Current	AC3 Rated Current	Coil Voltage	Auxiliary Contacts
LZDC09B3	4kW	25A	9A	230V AC	1NO + 1NC
LZDC09B0	4kW	25A	9A	24V AC	1NO + 1NC
LZDC09B5	4kW	25A	9A	24V DC	1NO + 1NC
LZDC12B3	5.5kW	25A	12A	230V AC	1NO + 1NC
LZDC12B0	5.5kW	25A	12A	24V AC	1NO + 1NC
LZDC12B5	5.5kW	25A	12A	24V DC	1NO + 1NC
LZDC18B3	7.5kW	32A	18A	230V AC	1NO + 1NC
LZDC18B0	7.5kW	32A	18A	24V AC	1NO + 1NC
LZDC18B5	7.5kW	32A	18A	24V DC	1NO + 1NC
LZDC25B3	11kW	40A	25A	230V AC	1NO + 1NC
LZDC25B0	11kW	40A	25A	24V AC	1NO + 1NC
LZDC32B3	15kW	50A	32A	230V AC	1NO + 1NC
LZDC32B0	15kW	50A	32A	24V AC	1NO + 1NC
LZDC38B3	18.5kW	50A	38A	230V AC	1NO + 1NC
LZDC38B0	18.5kW	50A	38A	24V AC	1NO + 1NC



Accessories

Suit Cubico Classic Range

Part Number	Description	Voltage	Auxiliary Contacts
LZZCH031	Auxiliary Contacts - front mount		3NO + 1NC
LZZCH022	Auxiliary Contacts - front mount		2NO + 2NC
LZZCH020	Auxiliary Contacts - front mount		2NO
LZZCH002	Auxiliary Contacts - front mount		2NC
LZZCH011	Auxiliary Contacts - front mount		1NO + 1NC
LZZCH711	Auxiliary Contacts - side mount		1NO + 1NC
LZZCL001	Mechanical interlock		
LZZCV024	Varistor Surge Suppressor	24-48 VAC/DC	
LZZCV230	Varistor Surge Suppressor	110-250 VAC	

Part Number	Description	Current Range	Auxiliary Contacts
LZTC0160-A	Thermal Overload	1 - 1.6A	1NO + 1NC
LZTC0250-A	Thermal Overload	1.6 - 2.5A	1NO + 1NC
LZTC0400-A	Thermal Overload	2.8 - 4A	1NO + 1NC
LZTC0630-A	Thermal Overload	4.5 - 6.3A	1NO + 1NC
LZTC0800-A	Thermal Overload	5.5 - 8A	1NO + 1NC
LZTC1000-A	Thermal Overload	7.5 - 10A	1NO + 1NC
LZTC1300-A	Thermal Overload	9 - 13A	1NO + 1NC
LZTC1600-A	Thermal Overload	12 - 16A	1NO + 1NC
LZTC2400-A	Thermal Overload	18 - 24A	1NO + 1NC
LZTC3200-A	Thermal Overload	23 - 32A	1NO + 1NC
LZTC3800-A	Thermal Overload	30 - 38A	1NO + 1NC

CUBICO High Current Contactors

3 pole with integrated Aux Contact

Part Number	Rated Power	AC3 Rated Current	Coil Voltage	Auxiliary Contacts
LZDH65B3	30kW	65A	230V AC	1NO + 1NC
LZDH65B0	30kW	65A	24V AC	1NO + 1NC
LZDH99B3	40kW	100A	230V AC	1NO + 1NC
LZDH99B0	40kW	100A	24V AC	1NO + 1NC
LZDG17B3	90kW	170A	230V AC	2NO + 2NC
LZDG20B3	110kW	205A	230V AC	2NO + 2NC
LZDG26B3	132kW	265A	230V AC	2NO + 2NC
LZDG30B3	160kW	300A	230V AC	2NO + 2NC
LZDG40B3	200kW	400A	230V AC	2NO + 2NC
LZDG50B3	250kW	500A	230V AC	2NO + 2NC



CUBICO Motor Protection Switch

CUBICO Series - Frame size 0

To safeguard motors from thermal overload, it is best to use a motor protection switch. Its fuseless construction, makes the motor protection switch a very cost-efficient type of protection with a small footprint. It also makes sure that the motor is shut down very quickly in case of a short circuit. Even with one or two live wires failing, the motor protection switch will disconnect within milliseconds to protect the motor from harm.

Motor protection switches are also used as manual ON/OFF switches. Whenever it is necessary, whether triggered by yourself or by a faulty circuit, the motor protection switch will shut down the motor, to prevent it from being damaged.

Part Number	Current Range	Power (kW)
BE200100	0.63-1A	0.25
BE200160	1-1.6A	0.55
BE200250	1.6-2.5A	0.75
BE200400	2.5-4A	1.5
BE200630	4-6.3A	2.2
BE201000	6-10A	4
BE201400	9-14A	5.5
BE201800	13-18A	7.5
BE202300	17-23A	11
BE202500	20-25A	11
BE203200	24-32A	15



Aux Contacts 1NO + 1 NC		Under Voltage Release 230V
Side mount	Front mount	
BE2ZAS11	BE2ZAF11	BE2ZU230

Interface Relays

6.2mm wide Din rail mountable relay package

The narrow housing of the new IRCU relays, allows them to be used in very confined spaces. With their minimal width of only 6.2 mm, they open up new possibilities, in designing control schemes. Their relay-terminal design, makes them very versatile and gives you enormous potential for savings. Jumpers and partitions are also available

- Mounts on TS 35 rail
- Internal EMC coil circuitry and LED display
- All-purpose use as coupling relay at PLC input, or in the output of the PLC for controlling actuators
- Screw connection
- 1 CO with 6 A rated load

Part Number	Contacts	Rated Current	Coil Voltage
16231.2	1 CO	6A	12V AC/DC
16232.2	1 CO	6A	24V AC/DC
16234.2	1 CO	6A	230V AC/DC

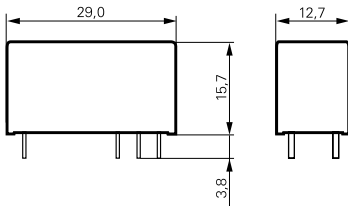


	Blue	Black	Red	Partition
16 pole jumper	16209.5	16209.4	16209.9	
Accessories				16228.2

Relays

PCB Power relay RT series

- Sensitive coil 400mW / 0.75 VA
- 5 kV / 10 mm coil-contact, protection class II (VDE 0700)
- Ambient temperature 85°C (DC-coil)
- Module height only 15.7 mm
- PCB and screwed socket available



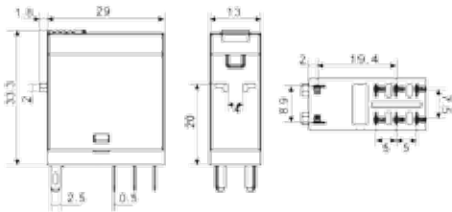
Part Number	Coil Voltage	Contacts	Rated current	Standard Din mount base	Retaining clip	8 relay jumper bar
RT314005	5V DC	1 CO	16A	RT78725	RT17017	RT170R8
RT314012	12V DC					
RT314024	24V DC					
RT314524	24V AC					
RT314730	230V AC	2 CO	8A			
RT424012	12V DC					
RT424024	24V DC					
RT424048	48V DC					
RT424524	24V AC					
RT424730	230V AC					

Relays

Pluggable industrial interface relay

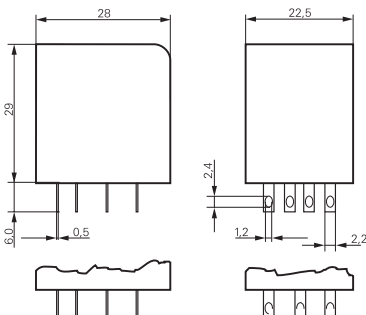
Included within relay

- LED Indicator
- Protection Diode
- Latching slider



Part Number	Coil Voltage	Contacts	Rated current	Logical Din mount base	Retaining clip	8 relay jumper bar
RXT21LB2	12V DC	2 CO	5A	YRXT2010	YRXT4000	YRXT6000
RXT21LC4	24V DC					
RXT21R24	24V AC					
RXT21T30	230V AC					

- Switching performance up to 3000 VA
- Relay height 29 mm
- Cadmium free contact material
- Mechanical indicator, optional LED and protection diode
- Manual test tab, optionally lockable

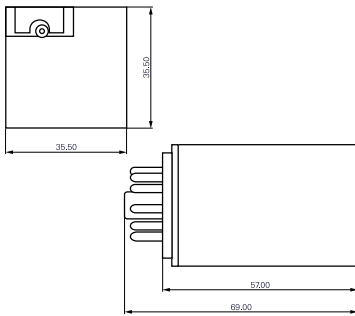


Part Number	Coil Voltage	Contacts	Rated current	Poles	Standard Din mount base	Retaining clip	6 relay jumper bar
PT270024	24V DC	2 CO	12A	8 pin	YPT78702	PT17024	PT170R6
PT370024	24V DC	3 CO	10A	11 pin	YPT78703		
PT570024	24V DC	4 CO	6A	14 pin	YRS50004	YRS400PT	
PT570524	24V AC	4 CO					
PT570730	230V AC	4 CO					

Relays

Multimode relay MT series

- 2 CO or 3 CO contacts
- DC and AC coils
- Cadmium free contact material
- Mechanical indicator as standard
- Optional electrical indicator
- New test system with front operated finger protected push-to-test button and integral locking test tab
- White write on panel

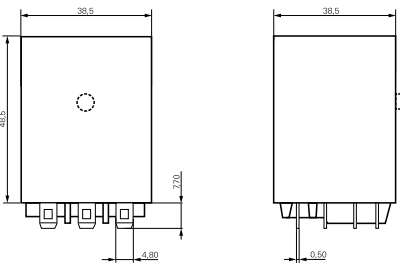


Part Number	Coil Voltage	Contacts	Rated current	Poles	Din mount base
MT221012	12VDC	2 CO	10A	8 pin	YMR78701
MT221024	24VDC				
MT226024	24VAC				
MT226230	230VAC	3 CO		11 pin	YMU78740
MT321012	12VDC				
MT321024	24VDC				
MT326012	12VAC				
MT326024	24VAC				
MT326230	230VAC				

Relays

Power relay RM series

- Mechanical indicator
- Push-to-test button
- Plug-in version
- RM7 & RM8 - 6000 VA switching capacity



Part Number	RM732012-C	RM732024-C	RM78705
Coil Voltage	12VDC	24VDC	Suits plug-in terminals
Rated Current	16A	16A	
Contacts	3 CO	3 CO	
Terminals	Plug-in		

Switch to Schrack



Austria's Leading Switchgear Manufacturer!

Schrack, Austria's major supplier of Electro Technology, Lighting, and Networking products. Have partnered up with Switches Plus to bring you a full and innovative product package that will save you both time and money.

Schrack, best known as a market leader, in relay and circuit breaker technologies, based in Vienna, Austria, not only offers relays, but a full suite of products, to provide a one stop shop for electrical designers, consultants, contractors, board builders, equipment manufacturers, and architects.

To see the full product capability visit www.schrack.com

Plastic Enclosures

IP67, IK08

An extensive range of plastic enclosures suitable for various applications. Material choice is dependant on application.

ABS plastic is suitable for indoor use only, but with the addition of polycarbonate, the ABS/PC blend is suitable for outdoor applications. Polyester will provide even greater strength, and resistance to the elements.

All terminal boxes are rated at IP67. Mounting plates (gear tray) to be ordered separately.



	AG/AT (ABS)	PG/PT (PC 70% + ABS 30%)	PCG/PCT (Polyester)	Clear Cover (Polycarbonate)
Outdoor Use	★	★★★	★★★★★	★★★
Indoor Use	★★★★★	★★★★★	★★★★★	★★★★★
High rigidity	★★★	★★★★	★★★★	★★★★
Impact resistance	★★★	★★★★★	★★★★★	★★★★★
Chemical resistance	★★★	Not tested	★★★★★	Not tested
Temperature (Temporary)	-40°C ~ 85°C	-40°C ~ 90°C	-40°C ~ 100°C	-40°C ~ 132°C
Temperature (Continuous)	-40°C ~ 60°C	-40°C ~ 85°C	-40°C ~ 75°C	-40°C ~ 130°C
Flammability	UL94-HB	UL94-V0	UL94-5VA	UL94-V0

★Poor ★★★Good ★★★★★Very Good ★★★★★Excellent

Terminal box with Transparent Lid

IP67, Solid colour base and polycarbonate lid

Indoor ABS	Outdoor (UV Resistant)		Height (mm)	Width (mm)	Depth (mm)	Mounting plate	
	ABS/PC	Polyester				Plastic	Steel
DS-AT-0818			80	180	70	DS-0818PL	DS-0818
DS-AT-0825-1			80	250	85	DS-0825PL	Not available
DS-AT-1212			125	125	100	DS-1212PL	Not available
DS-AT-1217			125	175	75	DS-1217PL	DS-1217
DS-AT-1520	DS-PT-1520		150	200	100	DS-1520PL	DS-1520
DS-AT-1525			150	250	100	DS-1525PL	DS-1525
	DS-PT-1717	DS-PCT-1717	175	175	75	DS-1717PL	DS-1717
DS-AT-1725			175	250	75	DS-1725PL	DS-1725
DS-AT-1725-1			175	250	100	DS-1725PL	DS-1725
DS-AT-1919			190	190	130	DS-1919PL	DS-1919
DS-AT-2020			200	200	130	DS-2020PL	DS-2020
DS-AT-2819			280	190	130	DS-2819PL	DS-2819
DS-AT-2828			280	280	130	DS-2828PL	DS-2828
DS-AT-3819	DS-PT-3819	DS-PCT-3819	380	190	130	DS-3819PL	DS-3819
DS-AT-3819-1			380	190	180	DS-3819PL	DS-3819
	DS-PT-5638		560	380	180	2x DS-3828PL	DS-5638



Terminal box with Opaque Lid

IP67, Solid colour base and lid

Indoor ABS	Outdoor (UV Resistant)		Height (mm)	Width (mm)	Depth (mm)	Mounting plate	
	ABS/PC	Polyester				Plastic	Steel
	DS-PG-0808		80	82	60	Not available	Not available
	DS-PG-0811		80	110	70	DS-0811PL	DS-0811
DS-AG-0813		DS-PCG-0813	80	130	70	DS-0813PL	DS-0813
DS-AG-0813-1			80	130	85	DS-0813PL	DS-0813
PL-AG-0816			85	165	50	Included	Not available
DS-AG-0816			80	160	90	Not available	DS-0816
	DS-PG-0818		80	180	70	DS-0818PL	DS-0818
DS-AG-0825-1			80	250	85	DS-0825PL	DS-0825
DS-AG-1212-S	DS-PG-1212-S		125	125	75	DS-1212PL	Not available
DS-AG-1217			125	175	75	DS-1217PL	DS-1217
DS-AG-1217-1	DS-PG-1217-1	DS-PCG-1217-1	125	175	100	DS-1217PL	DS-1217
DS-AG-1417	DS-PG-1417		140	170	95	DS-1417PL	DS-1417
DS-AG-1520		DS-PCG-1520	150	200	100	DS-1520PL	DS-1520
DS-AG-1525		DS-PCG-1525	150	250	100	DS-1525PL	DS-1525
DS-AG-1525-1	DS-PG-1525-1		150	250	130	DS-1525PL	DS-1525
DS-AG-1717-1			175	175	100	DS-1717PL	DS-1717
DS-AG-1725		DS-PCG-1725	175	250	75	DS-1725PL	DS-1725
DS-AG-2020	DS-PG-2020		200	200	130	DS-2020PL	DS-2020
DS-AG-2819		DS-PCG-2819	280	190	130	DS-2819PL	DS-2819
	DS-PG-2819-1		280	190	180	DS-2819PL	DS-2819
DS-AG-2828	DS-PG-2828		280	280	130	DS-2828PL	DS-2828
DS-AG-2834			280	340	130	DS-2834PL	DS-2834
DS-AG-3819		DS-PCG-3819	380	190	130	DS-3819PL	DS-3819
DS-AG-3828	DS-PG-2838		380	280	130	DS-3828PL	DS-3828
DS-AG-3828-1			380	280	180	DS-3828PL	DS-3828
DS-AG-5628			560	280	130	2x DS-2828PL	DS-5628
DS-AG-5638	DS-PG-5638		560	380	180	2x DS-3828PL	DS-5638



Terminal Box (includes terminals)

IP67, Suitable for Indoor & Outdoor Use

ABS/PC (Outdoor)	Height (mm)	Width (mm)	Depth (mm)	No. of Terminals
DS-MTB-10P	110	75	40	10
DS-PG-15P	100	200	70	15



Terminal Box with glands (includes terminals)

IP67, Suitable for Indoor & Outdoor Use

Polyester (Outdoor)	Height (mm)	Width (mm)	Depth (mm)	No. of Terminals
DS-MTB-4P	70	50	40	4
DS-MTB-6P	85	55	40	6



Hinged Opaque Lid, Plastic Draw Latches

IP67, Solid colour base and lid, NE models include ext mounting brackets

Indoor	Outdoor (UV Resistant)		Hinge side	Width (mm)	Depth (mm)	Mounting plate	
	ABS	ABS/PC				Polyester	Height (mm)
	EN-PG-1013		130	100	70	Included	Not available
EN-AG-1015			150	100	70	Included	Not available
		EN-PCG-1027	270	100	70	DS-1027PL	Not available
EN-AG-1515			150	150	90	DS-1515PL	Not available
EN-AG-1520	EN-PG-1520		200	150	100	Included	DS-1520
NE-AG-1727	NE-PG-1727		270	170	110	DS-1525PL	DS-1525
NE-AG-1929-S	NE-PG-1929-S		290	190	100	DS-2819PL	DS-2819
NE-AG-1929	NE-PG-1929		290	190	140	DS-2819PL	DS-2819
NE-AG-2530	NE-PG-2530		300	250	180	DS-2530PL	Not available
NE-AG-3030-S			300	300	130	DS-3030PL	DS-3030
NE-AG-3030	NE-PG-3030		300	300	180	DS-3030PL	DS-3030
NE-AG-2535	NE-PG-2535		350	250	150	DS-2535PL	DS-2535
NE-AG-2939-S	NE-PG-2939-S	NE-PCG-2939-S	390	290	100	DS-2939PL	DS-2939
NE-AG-2939	NE-PG-2939		390	290	160	DS-2939PL	DS-2939
EN-AG-3545			450	350	200	Included	Not available
		NE-PCG-3546-S	465	350	160	DS-3546PL	DS-3546
EN-AG-4353			530	430	200	DS-4353PL	DS-4353
EN-AG-5060-S		EN-PCG-5060-S	600	500	180	Not available	DS-5060
	EN-PG-5060		600	500	250	Not available	DS-5060



Hinged Transparent Lid, Plastic Draw Latches

IP67, Solid colour base and polycarbonate lid, NE models include ext mounting brackets

Indoor	Outdoor (UV Resistant)		Hinge side	Width (mm)	Depth (mm)	Mounting plate	
	ABS	ABS/PC				Height (mm)	Plastic
NE-AT-1013			130	100	70	DS-1013PL	Not available
NE-AT-1515			150	150	90	DS-1515PL	Not available
		NE-PT-2919	190	290	140	DS-2819PL	DS-2819
EN-AT-1020			200	100	70	Included	Not available
NE-AT-1722			220	170	110	DS-1520PL	DS-1520
NE-AT-1929			290	190	140	DS-2819PL	DS-2819
NE-AT-3030-S			300	300	130	DS-3030PL	DS-3030
NE-AT-3030			300	300	180	DS-3030PL	DS-3030
NE-AT-2939			390	290	160	DS-2939PL	DS-2939
NE-AT-3546			465	350	200	DS-3546PL	DS-3546



Hinged Opaque Lid, Stainless Steel Draw Latches

IP67, includes ext mounting brackets

Indoor	Outdoor (UV Resistant)	Hinge side	Width (mm)	Depth (mm)	Mounting plate	
					Plastic	Steel
ABS	ABS/PC	Height (mm)				
	DS-PG-01	300	200	180	DS-015PL	Not available
DS-AG-02		400	300	180	DS-2939PL	DS-2939



Hinged Transparent Lid, Stainless Steel Draw Latches

IP67, includes ext mounting brackets

Indoor	Outdoor (UV Resistant)	Hinge side	Width (mm)	Depth (mm)	Mounting plate	
					Plastic	Steel
ABS	ABS/PC	Height (mm)				
DS-AT-015		300	200	150	DS-015PL	Not available
DS-AT-01		300	200	180	DS-015PL	Not available



Mounting Brackets

Plastic enclosures



Part Number	Length
DS-B-40	40mm
DS-B-50	50mm

Ventilators

Plastic enclosures



Part Number	Mounting hole
DS-VH-40	20mm
DS-VH-60	60mm

Locks

Plastic enclosures



Part Number	Stainless Steel
DSK-20	Key Lock
DSK-40	Padlock Kit

Replacement Cover Screws

Plastic enclosures



Part Number	Shape	Part Number	Shape
DSB-25 (-)	-	DSB-49 (-)	-
DSB-25 (+)	+	DSB-49 (+)	+

M22 Control enclosures

IP65, M22



E-Stop enclosure



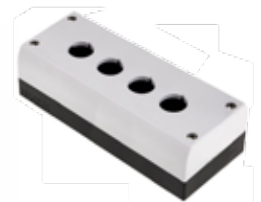
1 x M22



2 x M22



3 x M22



4 x M22

Part Number	B1 YELLOW/BK	B1 GREY	B2 GREY	B3 GREY	B4 GREY

Wall Mount Powder Coated Steel

Our Industrial grade enclosures come with a minimum protection rating of IP66 and have UV resistant powder coat.

Construction

- Door: 1.5mm - 1.8mm Mild Steel
- Body: 1.2mm - 1.5mm Mild Steel
- 2mm galvanized steel mounting plate
- High quality seamless foam-in-place PUR gasket
- Seams continuously welded
- Hinges reversible (left/right door open)
- Quarter-turn metal lock and heavy duty metal hinges
- Grounding studs on body and door (flexible earth link included)

Finish

- RAL 7035 UV resistant polyester powder coat
- Galvanised mounting plate

IP66, IEC 60529

RoHS Compliant, REACH Compliant, CE



Part Number Enclosures	Accessories		Dimensions (mm)					Metal Thickness (mm)		Weight (kg)
	Inner Door kit	Rainhood	Height	Width	Depth	Gland Plate opening	Walls	Door		
FT202015			200	200	150	130x60	A	1.2	1.5	2.9
FT302015			300	200	150	130x60	A	1.2	1.5	3.9
FT303015			300	300	150	230x60	B	1.2	1.5	5.0
FT303020			300	300	200	230x60	B	1.2	1.5	5.8
FT403015	FT-IND4030		400	300	150	230x60	B	1.2	1.5	5.7
FT403020	FT-IND4030		400	300	200	230x60	B	1.2	1.5	7.2
FT404020	FT-IND4040	TG-4020AS	400	400	200	330x120	C	1.2	1.5	9.1
FT404030	FT-IND4040	TG-4030AS	400	400	300	330x120	C	1.2	1.5	11.4
FT406030	FT-IND6040	TG-6030AS	400	600	300	530x120	D	1.2	1.5	15
FT503020			500	300	200	230x60	B	1.2	1.5	10.4
FT504020	FT-IND5040	TG-4020AS	500	400	200	330x120	C	1.2	1.5	11
FT504025	FT-IND5040		500	400	250	330x120	C	1.2	1.5	12
FT505020			500	500	200	330x120	C	1.2	1.5	13.4
FT505025		TG-5025AS	500	500	250	330x120	C	1.2	1.5	13.9
FT604020	FT-IND6040	TG-4020AS	600	400	200	330x120	C	1.2	1.5	12.9
FT604030	FT-IND6040	TG-4030AS	600	400	300	330x120	C	1.2	1.5	15
FT605025		TG-5025AS	600	500	250	330x120	C	1.2	1.5	16.9
FT606020	FT-IND6060	TG-6020AS	600	600	200	530x120	D	1.2	1.5	18.4
FT606025	FT-IND6060		600	600	250	530x120	D	1.2	1.5	19.6
FT606030	FT-IND6060	TG-6030AS	600	600	300	530x120	D	1.2	1.5	20.8
FT705025		TG-5025AS	700	500	250	330x120	C	1.2	1.5	19.2
FT806020		TG-6020AS	800	600	200	530x120	D	1.2	1.8	26.5
FT806030		TG-6030AS	800	600	300	530x120	D	1.2	1.8	27.7
FT806040			800	600	400	530x120	D	1.2	1.8	31.6
FT808030		TG-8030AS	800	800	300	2x 330x120	C	1.2	1.8	34.5
FT1006030		TG-6030AS	1000	600	300	530x120	D	1.5	1.8	37.8
FT1008030		TG-8030AS	1000	800	300	2x 330x120	C	1.5	1.8	47.5
FT10010030			1000	1000	300	2x 330x120	C	1.5	1.8	59
FT1206030		TG-6030AS	1200	600	300	530x120	D	1.5	1.8	52.8
FT1208030		TG-8030AS	1200	800	300	2x 330x120	C	1.5	1.8	53.7

Wall Mount Stainless Steel

These enclosures are manufactured with 1.2mm thick, 304 grade stainless steel, with 1.5mm thick doors for extra rigidity. The mounting plate, (gear tray), is a generous 2mm thick, to carry the heaviest of loads. Interior and mounting plates are painted white, to reduce glare inside enclosure. Foamed polyurethane door gasket. With ingress protection rating of IP66, and the heavy duty stainless steel construction, these enclosures are sure to perform and impress.

Construction

- Door: 1.5mm - 1.8mm Stainless Steel
- Body: 1.2mm - 1.5mm Stainless Steel
- 2mm galvanized steel mounting plate
- High quality seamless foam-in-place PUR gasket
- Seams continuously welded
- Hinges reversible (left/right door open)
- Stainless Steel Heavy-duty Quarter-turn lock
- Stainless Steel Heavy-duty hinge
- Grounding studs on body and door (flexible earth link included)



Finish

- Cover and body brushed smooth
- Interior of enclosure and mounting plate are painted white.

IP66, IEC 60529

RoHS Compliant, REACH Compliant, CE

Part Number	Dimensions (mm)			Metal Thickness (mm)		Weight (kg)	
	SUS 304 grade	Height	Width	Depth	Walls		Door
FTSS202015		200	200	150	1.2	1.5	2.9
FTSS302015		300	200	150	1.2	1.5	3.9
FTSS302515		300	250	150	1.2	1.5	4.5
FTSS303015		300	300	150	1.2	1.5	5.3
FTSS303020		300	300	200	1.2	1.5	5.8
FTSS403020		400	300	200	1.2	1.5	7.2
FTSS404020		400	400	200	1.2	1.5	9.1
FTSS503020		500	300	200	1.2	1.5	10.4
FTSS504020		500	400	200	1.2	1.5	11
FTSS504025		500	400	250	1.2	1.5	12
FTSS604020		600	400	200	1.2	1.5	12.9
FTSS604025		600	400	250	1.2	1.5	15.3
FTSS605025		600	500	250	1.2	1.5	16.9
FTSS606020		600	600	200	1.2	1.5	18.4
FTSS606025		600	600	250	1.2	1.5	19.6
FTSS606030		600	600	300	1.2	1.5	20.8
FTSS705025		700	500	250	1.2	1.5	19.2
FTSS806030		800	600	300	1.2	1.8	27.7
FTSS1008030		1000	800	300	1.5	1.8	47.5
FTSS1208030		1200	800	300	1.5	1.8	53.7

Accessories for metal enclosures



Spare Key to suit FT enclosure	Spare Key to suit FTSS enclosure	Wall mount kit	Document pocket
FTKEY	FTSSKEY	FTWALL	CSW-35001



Mounting plate stud conversion kit	Cam to suit CL001 Lock & Spin handle	CL001 Key Lock	Padlockable Spin handle	
FTMOUNT	CL001CAM	CL001LOCK	Nickel Plated Brass	IF736
			Stainless Steel	IF736 SS

LED Cabinet light

Magnetic/Screw mount, 110-230V AC



	6W	12W
Part Number	LCL-6W-230C	LCL-12W-230C
Dimensions (mm)	390 x 30 x 45	500 x 30 x 45
Luminous flux (LM)	500	1000

Pressure Compensation Device

M40, IP66, 60mm Ø x 19mm high

Pressure differentials in enclosures can occur when temperatures change (day/night) particularly when installed outside. Humid air can condense causing a build up of water inside the enclosure. For optimal pressure compensation we recommend to use 2 devices on opposite sides towards the top of the enclosure.



Part Number	Description
28400.0-00	DA284 PCD - supplied as 2 pieces

Heaters

IP20

These heaters are used in enclosures where damage from condensation must be prevented or where the temperature must not fall below a minimum value. The aluminium profile heater body distributes the heat evenly by creating a chimney effect. 250-400W models use a high performance axial fan to provide air circulation to ensure even temperatures throughout enclosures.

- Mounts on TS 35 rail
- PTC Resistor, temperature limiting
- Spring clamp terminations, 0.5-1.5mm² with ferrule

Part Number	Voltage (AC/DC)	Heating Capacity	Inrush Current (max)	Length of heatsink (mm)
HG140-15	120-250V	15W	1.5A	65
HG140-30	120-250V	30W	2.5A	65
HG140-45	120-250V	45W	3A	65
HG140-60	120-250V	60W	3.5A	65
HG140-75	120-250V	75W	4A	145
HG140-100	120-250V	100W	4.5A	145
HG140-150	120-250V	150W	9A	220



Part Number	Voltage (AC)	Heating Capacity	Dimensions (mm)	Weight (kg)
HGL046-250	230V	250W	182x85x85	1.1
HGL046-400	230V	400W	222x85x85	1.4

Thermostats

Suitable for heating and cooling applications

- Sensor Element: Bi-metal
- Adjustment Range: 0-60°C
- Contact Rating: 6A 250V AC
- Dimensions: 60H x 33W x 35D (mm)
- Connections: 2 pole screw terminal 2.5mm²
- Mounting: TS35 Din rail mountable



	Blue	Red	Red/Blue
Function	Cooling	Heating	Heating/Cooling
Part Number	KTS 011	KTO 011	ZR 011

Filters and fans

IP54, Side or door mounting

The FK55 series, offers a low shape and quick mounting, with a distinct curved modern styling, for the ventilation of control cabinets, enclosures and housings.

- Grey - RAL7035
- Filter mats for dust collection
- IP54
- 230V AC or 24V DC



24V DC Filter and fan	230V AC Filter and fan	Exit filter	Cutout dimensions (H x W mm)	External dimensions (H x W mm)	Air Flow no Filter m ³ /hr	Air Flow with Filter m ³ /hr	IPx5 Rainhood to suit
FK5521.024	FK5521.230	FK5521.300	92x92	109x109	35	24/27	FPK-201404 SR60
FK5522.024	FK5522.230	FK5522.300	125x125	150x150	67	50/58	FPK-241804 SR60
	FK5523.230	FK5523.300	177x177	204x204	105	85/100	FPK-292304 SR60
	FK5525.230	FK5525.300	223x223	250x250	230	170/230	FPK-342804 SR60
	FK5526.230	FK5526.300	291x291	325x325	550	360/490	
	FK5527.230	FK5526.300	291x291	325x325	650	500/600	

Louvre Vent Kit

Includes gasket



Part Number	Colour	Dimensions
LVP-1515C	RAL7035	150 x 150 mm

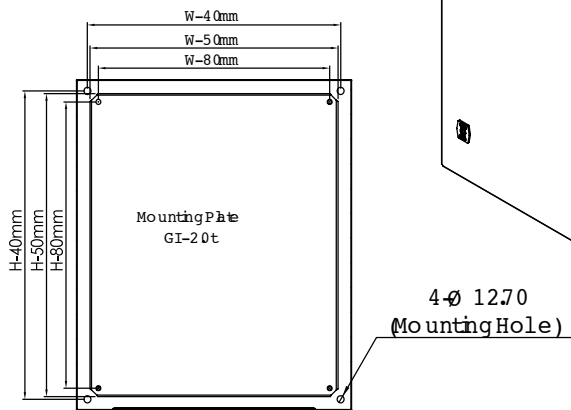
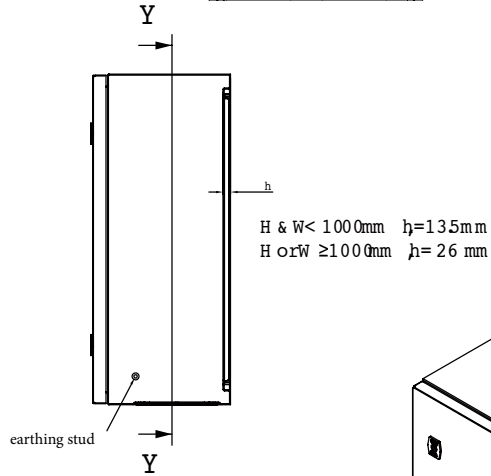
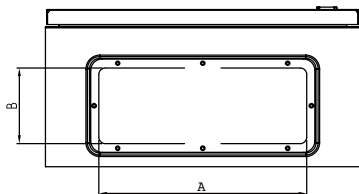
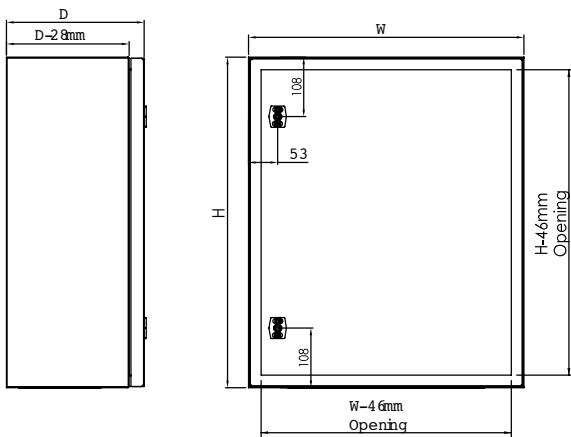
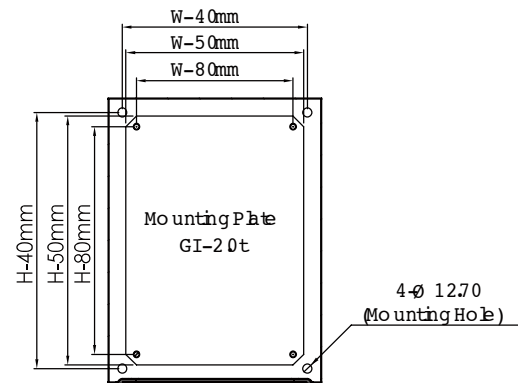
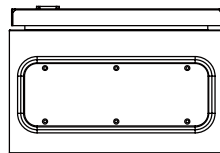
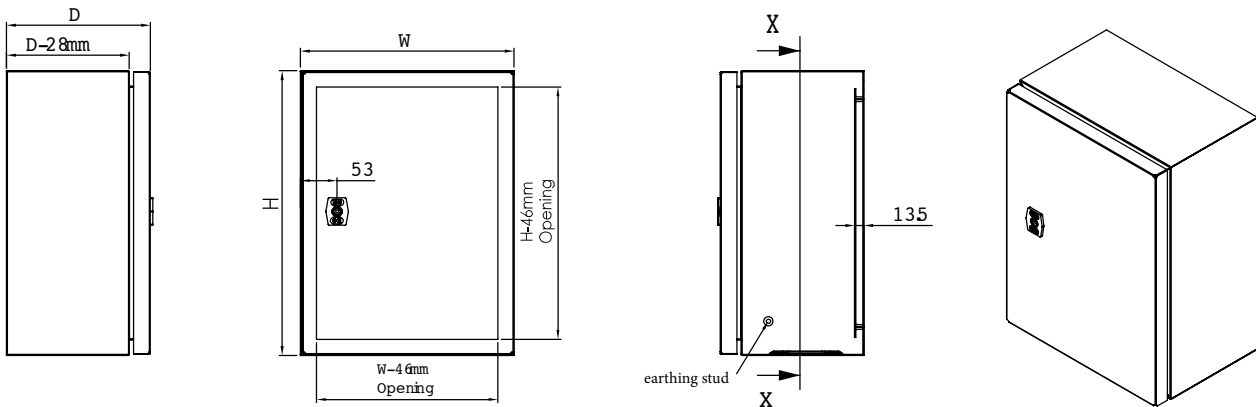
Rainhoods for enclosures

RAL7035, powder coated steel



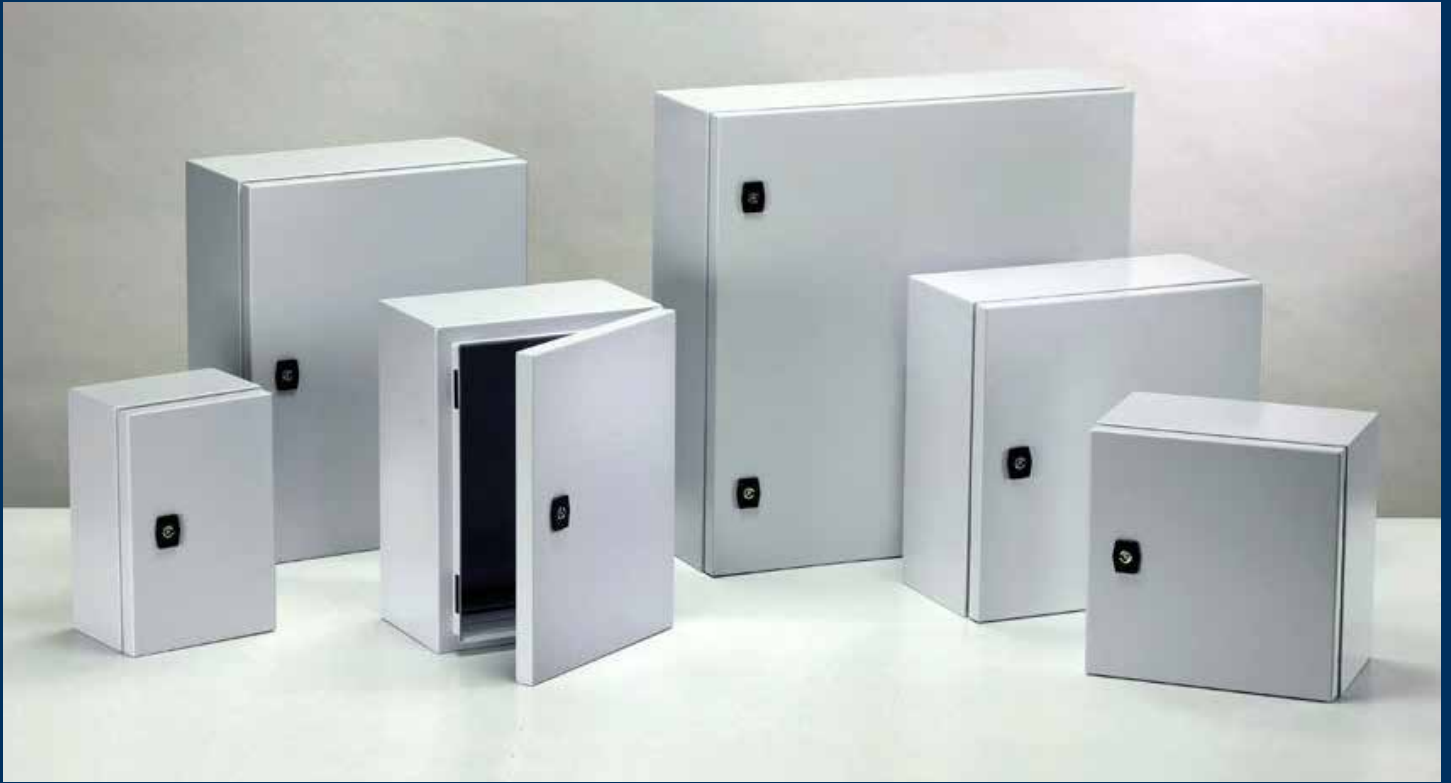
Rainhood Part Number	Suit Enclosure Width (mm)	Suit Enclosure Depth (mm)
TG-4020AS	400	200
TG-4030AS	400	300
TG-5025AS	500	250
TG-6020AS	600	200
TG-6030AS	600	300
TG-8020AS	800	200
TG-8030AS	800	300

Metal Enclosure Dimensional Drawings



Custom Enclosures

Save Time and Money



Customised enclosures are easy!

Did you know that it's cheaper to customise your enclosure at the factory, than to do it yourself?

If you find that you are building the same box, with the same cut-outs on a regular basis, or have a project coming up, have a chat to us about how we can save you considerable time, by carrying out this work at the factory level. It's easier than you may think, and depending on the level of customisation, the minimum order quantities could be quite small. 10's not 100's are usually required for a customised build! We can modify mounting plates, doors, or the enclosure itself. We can add PCB standoffs, and even change the colour!



Main Switches

IP66, Padlockable, Optional 4th pole for Neutral and Aux contacts also available

Load-break switches can be used anywhere where compact ON-OFF switches with large contact gaps (isolators), high contact pressure, and greater short circuit protection is required.

Therefore, they are available as:

- **Main switches** according to IEC/EN 60204 and VDE 0113 with locking device, terminal cover and forced switching contactors.
- **Disconnectors** according to IEC/EN 60947-3 and VDE 0660 Part 107 with disconnecting distance for 690 V.
- **Motor switches**, 3-pole or 4-pole. According to IEC/EN 60947-3 and VDE 0660 Part 107, the LT(S) series switches have a high AC3 and AC23 A switching capacity.

AC-21		AC-3	AC-23	
Rated Current	Voltage	Voltage	Utilisation	Category
20A	690V	3~400V	5.5 kW	7.5 kW
32A	690V	3~400V	11 kW	12.5 kW
63A	690V	3~400V	18.5 kW	22 kW
80A	690V	3~400V	18.5 kW	22 kW
125A	690V	3~400V	37 kW	45 kW



Rated Current	3 Pole Panel Mount (22mm mounting)	3 Pole Panel Mount (4 hole mounting)	4 Pole Panel Mount with door clutch (length adjustable)	3 Pole Enclosed	Neutral Pole	Aux Contacts 1NO + 1 NC
20A	LTS20ZHN1A3	IN8E2332	IN8A2432	IN8P2332	IN809002	IN809001
32A		IN8E2334	IN8A2434	IN8P2334	IN809002	IN809001
63A		IN8E2337	IN8A2437	IN8P2337	IN809003	IN809001
80A		IN8E2338	IN8A2438	IN8P2338	IN809003	IN809001
125A		IN8E233B				

300mm extension shaft to suit door clutch model P/N LTS-0003-E

Isolators and Switches



	IP66 Surface Mount Switch		IP66 Isolating Switch	Din Mount Disconnector	Din Mount C/O Switch I-0-II	
Current Rating	32 A	63 A	63 A	125A	16A	
3 Pole	M66SW332	M66SW363	MF-3-63	AZ200223	Single Pole	BZ106380

Cam Switches

IP65, 22mm mounting

A diverse range of Cam switches rated to IP65, with 22mm central fastening.



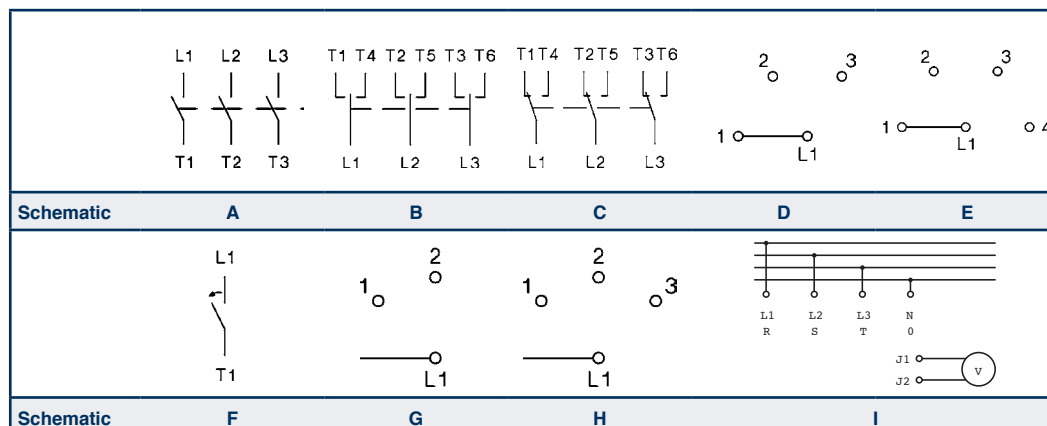
Current	Poles	0 - 1	1 - 0 - 2	1 - 2
Schematic		A	B	C
20A	1	IN025120	IN026120	IN027120
20A	3	IN025320	IN026320	IN027320
32A	3	IN125325		



Current	Poles	1 - 2 - 3	1 - 2 - 3 - 4	START (momentary)
Schematic		D	E	F
20A	1	IN023901	IN023902	INOZC102



Current	Poles	0 - 1 - 2	0 - 1 - 2 - 3	Voltmeter
Schematic		G	H	I
20A	1	IN023904	IN023903	IN009V02



Part Number	Face Plate Only
D482-MAN	MAN - OFF - AUTO
D482-FOR	FORWARD - OFF - REVERSE
D481-BLK	BLANK

The new M22 series of Industrial Pilot devices, combine modern European styling with an attractive slim design, long life, and worldwide approvals.

The rugged design of the IP65 pushbutton operators and contact blocks, provide reliable mechanical operation exceeding five million switching cycles. The illuminated versions, have a LED light source, that will operate between 12-30V AC/DC, with optional 230V LED modules also available, providing 100,000 hours of illumination.

Contact blocks are capable of switching 6A at 230V AC, and 3A at 24V DC, making them a very versatile switch. Keyed switch operators, Emergency stops, and illuminated selector switches complete the product offering.

Rated operational current

230V	AC-15	6 A
400V		4 A
500V		2A
24V	DC-13	3 A
42V		1.7 A
60V		1.2 A
110V		0.8 A
220V		0.3 A

22mm Pushbuttons

IP65, Supplied with 1NO + 1NC



Function	LED	Green	Red	White	Yellow /Amber	Blue	Black
Latching	No	M22FP-ASF11G	M22FP-ASF11R	M22FP-ASF11W	M22FP-ASF11Y	M22FP-ASF11BL	
	12-30V AC/DC	M22FP-ASF11E30G	M22FP-ASF11E30R	M22FP-ASF11E30W	M22FP-ASF11E30Y	M22FP-ASF11E30BL	
Momentary		M22FP-MSF11E30G	M22FP-MSF11E30R	M22FP-MSF11E30W	M22FP-MSF11E30Y	M22FP-MSF11E30BL	
	No	M22FP-MSF11G	M22FP-MSF11R	M22FP-MSF11W	M22FP-MSF11Y	M22FP-MSF11BL	M22FP-MSF11BKO
230V AC LED Module		M22-SF-E230G	M22-SF-E230R	M22-SF-E230W	M22-SF-E230Y	M22-SF-E230BL	

22mm Emergency Stop

Complete assembly

Specifications:
IP65, 230V, 6A



Contacts	Illuminated	Latching, Twist release	Latching, Twist release	Latching, key release	Legend plate	Guard
2 NC	No	M22E-TSF02		M22E-KSF02	LABEL EMERG STOP	M22E-GR
1 NO + 1 NC	12-30V AC/DC		M22EL-TSF11E30			

22mm Mushroom

IP65



Contacts	Function	Red 36mm Ø	Green 36mm Ø
1 NO + 1 NC	Momentary	M22MP-MSF11RO	M22MP-MSF11GO

22mm Double pushbutton

IP65



Contacts	Function	Double Switch block
1 NO + 1 NC	Momentary	M22DP-SF11E30GR

22mm Selector Switches

IP65, Supplied with Contact Blocks



Position	Contacts	Maintained
2		2 NO M22S-T20SF20WO
3 Centre Off		2 NO M22S-T30SF20WO

Position	Contacts	Momentary
2 Spring Return from Right		2 NO M22S-T22SF20WO
3 Spring Return from Left & Right		2 NO M22S-T32SF20WO



Position	Contacts	Maintained - Illuminated 12-30V AC/DC				
2		2 NO	M22S-T20SF20E30R	M22S-T20SF20E30G	M22S-T20SF20E30Y	M22S-T20SF20E30BL

Key Selector Switches

IP65, 22mm mount, no Key Traps
Includes 1 x Key



	Off - On	Off - (On)	On - Off - On	NC Contact block	NO Contact block	Contact Holder
Part Number	MM216887	MM216881	MM216900	M22-SF-NC	M22-SF-NO	M22-A3

Joystick

IP65, 22mm mount, Momentary



	2 Way	4 Way	NC Contact block	NO Contact block	Contact Holder
Part Number	MM289196	MM279417	M22-SF-NC	M22-SF-NO	MM279437

Potentiometer

IP66, 22mm mount, 10KOhm



Part Number	10kOhm Pot
MM229491	

22mm Accessories



**Front Mount
NC Contact block**



**Front Mount
NO Contact block**



**Base Mount
NC Contact block**



**Base Mount
NO Contact block**



**Emergency Stop
Self Monitoring contact
1NC + 1NO**

Description	Front Mount NC Contact block	Front Mount NO Contact block	Base Mount NC Contact block	Base Mount NO Contact block	Emergency Stop Self Monitoring contact 1NC + 1NO
Part Number	M22-SF-NC	M22-SF-NO	MM216382	M22-SB-NO	M22-K01SMC10S



**3 Contact
Holder**



**4 Contact
Holder**



MS1 Key



**12-30V AC/DC LED block
- white**



M22K - Key trap kit

Description	3 Contact Holder	4 Contact Holder	MS1 Key	12-30V AC/DC LED block - white	M22K - Key trap kit
Part Number	M22-A3	MM279437	MM216416	M22-SF-E30W	MM216406



Face Plate - ARROW



Face Plate - STOP



**30mm to 22mm
Adaptor**



Din Mount Adaptor



**Water resistant cover to suit
single push-
button**



**Water resistant cover to suit
double push-
button**

Description	Face Plate - ARROW	Face Plate - STOP	30mm to 22mm Adaptor	Din Mount Adaptor	Water resistant cover to suit single push- button	Water resistant cover to suit double push- button
Part Number	M22-ARROW	M22-STOP	MM216408	MM216400	M22-C1	M22-C2

M22 Control enclosures

IP65, M22



E-Stop enclosure



1 x M22



2 x M22



3 x M22



4 x M22

Part Number	B1 YELLOW/BK	B1 GREY	B2 GREY	B3 GREY	B4 GREY
--------------------	--------------	---------	---------	---------	---------

Anti-Vandal pushbuttons

IP67, Single Pole Double Throw,
250V 5A Contacts



Function	LED Voltage	Diameter	Red	Green	Blue	White
Momentary	24V AC/DC	22mm	AV02L-B12-M3-FR-R-24V	AV02L-B12-M3-FR-G-24V	AV02L-B12-M3-FR-B-24V	AV02L-B12-M3-FR-W-24V

Anti-vandal Pilot lights

IP67, M12 thread, 5mm LED



Voltage	Red	Green	Blue	White
24V AC/DC	IL-NI-05-R-4-N	IL-NI-05-G-4-N	IL-NI-05-B-4-N	IL-NI-05-W-4-N

22mm LED Pilot lights

IP65



Voltage	Red	Green	Blue	White	Yellow
24V AC/DC	L22 24V R	L22 24V G	L22 24V B	L22 24V W	L22 24V Y
220V AC	L22 220V R	L22 220V G	L22 220V B	L22 220V W	L22 220V Y

Palm switch

IP67/69K

3xM20

1xM16



Description	Red/Yellow 1 NC + 1 NO	Red/Grey 1 NC + 1 NO	Black/Grey 1 NC + 1 NO	Base Mount Contact Blocks	
Function	Maintained	Momentary	Momentary	Normally Closed	Normally Open
Part Number	MM229748	MM229746	MM229749	MM216382	M22-SB-NO

Footswitch

Commercial Duty

Construction:

- Steel housing is painted black
- Two single models mounted on a twin base plate
- A divider bar between pedals, which helps prevent accidental operation of both switches, at one time in Twin models

Features & Benefits:

- Non-skid base pad and foot treadle pad
- 2 Holes provided for rigid mounting to floor or equipment
- The low profile and light pressure required to operate reduces operator fatigue



Part Number	Type	Dimensions	Switch Function	Switch circuit	Electrical Rating	IP rating
T-91-S	Single	89 x 66 x 21mm	Momentary	SPDT (NO / NC)	250V AC 15A	IP20
Twin HT-52-S	Twin	138 x 90 x 38mm	2 x Momentary	2 x SPDT (NO / NC)	250V AC 15A	IP20

Construction:

- Mounted in a chrome plated heavy zinc die cast housing
- A full nonskid base pad
- A special vinyl cover gives added environmental protection against limited amounts of water and dirt (VK)
- The dip molded cover, is bonded to the vinyl base pad of the foot switch

Features & Benefits:

- Features a round black actuating cap
- Moderate pressure from any direction operates the switch
- Supplied with 3 core 1.8m prewired lead (bare ends/no plug)
- Wired normally open and grounded
- Ease of operation with foot or hand



Part Number	Type	Dimensions	Switch Function	Switch circuit	Electrical Rating	IP rating
GEM-V36	Single	96 x 33mm	Momentary	SPST (NO)	250V AC 10A	IP20
GEM-VK36	Single	101 x 39mm	Momentary	SPST (NO)	250V AC 10A	IP21

Construction:

- Rustproof and corrosion proof polymeric material
- Raised ribs on treadle for positive traction during operation
- Integrated adjustable strain relief clamp accommodates cord size from .250" Dia. to .400" Dia

Features & Benefits:

- Flame retardant to 94-VI
- Maximum versatility, total performance
- Non-skid base pad
- 2 holes provided for rigid mounting to Floor or equipment



Part Number	Type	Dimensions	Switch Function	Switch circuit	Electrical Rating	IP rating
971-SWNO210	Single (Plastic-3mtr lead)	101 x 87 x 29mm	Momentary	SPDT (NO / NC)	25V AC 3A	IP20

Footswitch

Medium Duty

Construction:

- Constructed of Cast Iron for long life
- Non-skid base pad
- Adjustable Strain relief connector
- Durable black finish

Features & Benefits:

- Proven Reliability
- 2 holes provided for rigid mounting to floor or equipment



Part Number	Type	Dimensions	Switch Function	Switch circuit	Electrical Rating	IP rating
642-S	Single	177 x 139 x 45mm	Momentary	SPDT (NO / NC)	250V AC 20A	IP20

Footswitch

Medium Duty

Construction:

- Constructed of Cast Iron for long life
- Non-skid base pad
- Adjustable Strain relief connector
- Durable black finish
- Divider Bar on Twin Model

Features & Benefits:

- Proven Reliability
- 2 holes provided for rigid mounting to floor or equipment



Part Number	Type	Dimensions	Switch Function	Switch circuit	Electrical Rating	IP rating
632-S	Single	115 x 87 x 45mm	Momentary	SPDT (NO / NC)	250V AC 20A	IP20
635-SW	Single	115 x 87 x 45mm	Momentary	DPDT (NO / NC)	250V AC 10A	IP68
Twin 632-S	Twin	212 x 115 x 45mm	Momentary	SPDT (NO / NC)	250V AC 20A	IP20

Footswitch

Heavy Duty

Construction:

- Treadle and housing constructed from cast iron, for strength and durability
- Protected by a strong cast aluminum Shield
- Painted Alert Orange
- Single 3/4"-14 N.P.T. threaded conduit entry is standard
- All models have a neoprene cover gasket, plus O-rings, on the activating shaft and a separate ground screw

Features & Benefits:

- Rugged cast metal enclosure has sufficient weight to keep the switch from sliding when being operated
- In all Maintained Contact models the release is accomplished by simply pressing the latch with a light forward movement of the toe. The release is placed under the Full Shield, so falling objects cannot easily release it
- 3 holes provided for rigid mounting to the floor or equipment



Part Number	Type	Dimensions	Switch Function	Switch circuit	Electrical Rating	IP rating
531-SWH	Single	228 x 149 x 111mm	Momentary	SPDT (NO / NC)	250V AC 20A	IP56

Construction:

- Treadle and housing constructed from cast aluminum, for environmental durability
- Painted Alert Orange
- Single PG 16 threaded conduit entry is standard
- Protected by a strong cast aluminum Shield
- Oversize "O" Shield models accept oversized safety shoes

Features & Benefits:

- Snap action - SPDT with forced disconnect (positive break) on NC contacts
- Direct PLC interface compatible (two-circuit bifurcated contact single-pole versions)
- Galvanically isolated bifurcated contacts - NO and NC circuits can be wired to different loads and polarities
- 3 holes provided for rigid mounting to the floor or equipment



Part Number	Type	Dimensions	Switch Function	Switch circuit	Electrical Rating	IP rating
936-SWH	Single	230 x 149 x 119mm	Momentary	SPDT (NO / NC)	300V AC 10A	IP68
936-SWH-O	Single	230 x 149 x 138mm	Momentary	SPDT (NO / NC)	300V AC 10A	IP68
936-SWH-OX	Single	230 x 150 x 153mm	Momentary	SPDT (NO / NC)	300V AC 10A	IP68

Toggle Switches

250V AC 15A, M12 thread, 17mm actuator

General purpose toggle switches suitable for most applications.

On = Maintained
(On) = Momentary

Function	Part Number	Poles				Termination			
		SPST	SPDT	DPST	DPDT	6.3 Quick Connect	Screw Connect	Solder Lug	Bushing height
On-Off	L7-FP1-A3-B4-H5-15A			✓		✓			12.5
	L7-2P1-A3-B4-H5-15A	✓				✓			12.5
On-Off-On	L7-DP3-A3-B4-H5-15A				✓	✓			12.5
On-On	L7-SP1-A3-B4-H1-15A		✓				✓		12.5
	L7-DP1-A3-B4-H5-15A				✓				12.5
	L7-SP1-A3-B4-H5-15A		✓			✓			12.5
On-Off-(On)	L7-DPT-A3-B4-H5-15A				✓	✓			12.5
	L7-SPT-A3-B2-H5-15A		✓			✓			9.5
On-(On)	L7-SPA-A3-B4-H1-15A		✓				✓		12.5
(On)-Off-(On)	L7-SP4-A3-B4-H5-15A		✓			✓			12.5
	L7-DP4-A3-B4-H3-15A				✓			✓	12.5
	L7-DP4-A3-B4-H5-15A				✓	✓			12.5
(On)-Off	L7-FPA-A3-B4-H5-15A			✓		✓			12.5



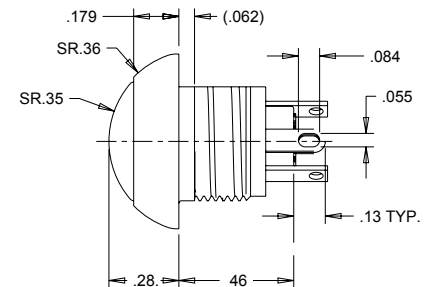
Part Number	Description	Option
YS1306	Toggle Switch Guard	Plastic
WUN-0077	Toggle Switch Plate	On-Off
YE2A06	Black Toggle Boot	M12
YE1A06		15/32-32

Dome pushbuttons

Momentary action

The P9 Dome series is a quality precision switch designed for use in panels, control grips, computers, instruments, heavy equipment and other demanding applications where attractive, rugged pushbutton switches are required.

Compact Momentary Snap Action panel mount switches for wet and dusty environments with positive tactile feedback. Manufactured in the USA with a mechanical life expectancy of 1,000,000 operations and an electrical life of 25,000 operations at full rated load. The switch series, offers excellent mechanical and electrical performance while operating under severe conditions found in demanding applications.



IP	Force	Red	Black	Orange	Yellow	Green	Blue
IP64	Standard	P9-113121	P9-113122	P9-113123	P9-113124	P9-113125	P9-113126



IP64	Standard	Purple	Grey	White
		P9-113127	P9-113128	P9-113129

Load	Ratings	
Resistive: 28VDC	4A	25,000 cycles
Resistive: 115VAC	1A	25,000 cycles
Inductive: 28VDC	2A	25,000 cycles
Logic Level	10mA @ 5 VDC	1,000,000 cycles
Operating Force:	Standard	1.7 lbs. +/- 0.5 lb
Thread	15/32-32	
Contacts	1NO + 1NC	

Keyed Switchlocks -19mm

Solder Lug Silver Contacts, 150mA @ 250V AC/DC
350mA @ 110V AC/DC, 1A @ 12V AC/DC, 5A non switching

2 Position DPDT key switch with momentary spring return action.
4 Position Single pole key switch with maintained action.
Available in a wide variety of key codes, choose key option below.

Features/Benefits

- Switch indexed 60°.
- Contacts are non-shorting (BBM)
- No key traps
- Two keys per lock.
- Wide choice of keys available ex stock



Part Number	Function	Switch	Position
RAL9349/KEY	Momentary	Double Pole	2 Position
RAL9348/KEY	Maintained	Single Pole	4 Position

Available KEY codes - eg RAL9349/93201

93201	93204	93207	93210	93213	93216	93219	93222	93225	93228
93202	93205	93207	93211	93214	93217	93220	93223	93226	93229
93203	93206	93209	93212	93215	93218	93221	93224	93227	

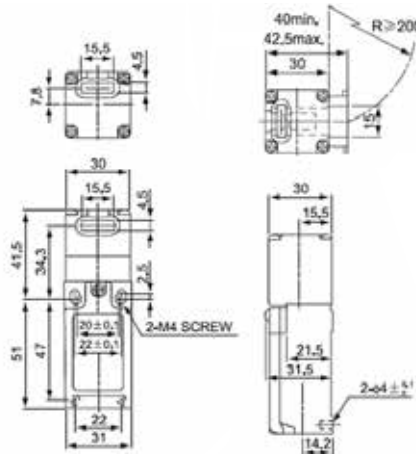
Interlock Switch

IP65, Key interlock, M20, 2 NC

Key interlock switch with right angle mount key. Head can be rotated for side actuation, and key can also be inserted in top of actuation head, allowing maximum mounting versatility.

Operating Specifications

Key plug in force	1500 gf
Key pull out force	3000 gf
Pre Travel	6 ± 3 mm
Total Travel	28 mm
Positive opening travel	10 mm



Part Number	Contacts
CZ-93BPM02	2 Normally Closed



OTTO
Expect Excellence.

OTTO designs and manufactures precision switches and control grips including mechanical switches; Hall effect switches with digital and analog output options. OTTO's portfolio includes sealed and lighted high performance, snap action, rocker, pushbuttons and toggles as well as commercial and military control grips and Hall effect technology joysticks.

Our switches, joysticks and control grips perform every day in some of the toughest applications including heavy equipment, aerospace, marine, medical, communication and other demanding markets.

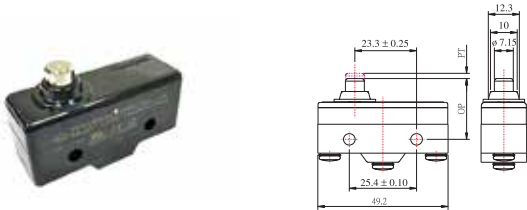
Visit www.otto-controls.com for more information.

Micro Switch

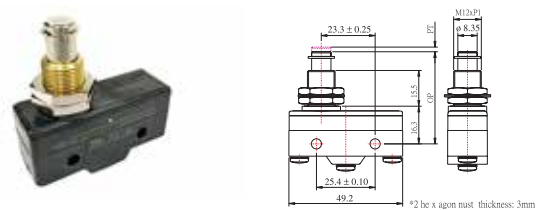
250V AC 15A, SPDT, PBT & Phenolic body, Snap-acting Switch

- Side mount switches
- Momentary contacts
- Wide choice of heads and actuators
- Regular or Sealed actuators
- Temperature range -25° C to +80° C
- 15A at 250V AC
- 0.5A at 125V DC
- 240 operations/min
- Screw Terminations

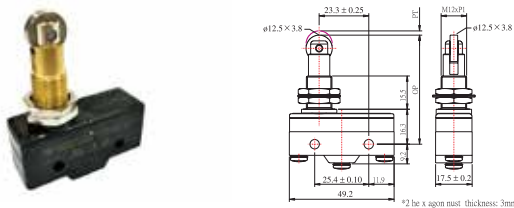
Operating Speed	0.01mm to 1m/sec
Operating Frequency	Mechanical: 240 operations/min Electrical: 20 operations/min
Vibration	Malfunction durability: 10 to 55Hz; 1.5mm double amplitude
Shock	Mechanical durability: Approx 1km/sec ² (approx 100 G's) Malfunction durability: Approx 300m/sec ² (approx 30 G's)
Operating Temperature	-25°C to +80°C (IP40) -15°C to +80°C (IP65)
Service Life	Mechanical: 20,000,000 operations (min) Electrical: 500,000 operations min (1.7A 110V AC)
Humidity	85% RH max (IP40) 95% RH max (IP65)
Electrical Contacts	1 CO 250V AC 15A / 125V DC 500mA (resistive)



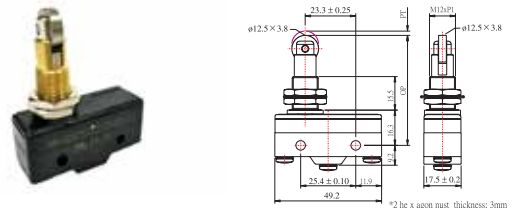
Part Number	Description	IP
MJ2-1306	Plunger Actuator	IP40



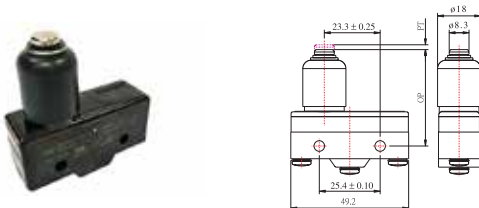
Part Number	Description	IP
MJ2-1307	Plunger Actuator	IP40



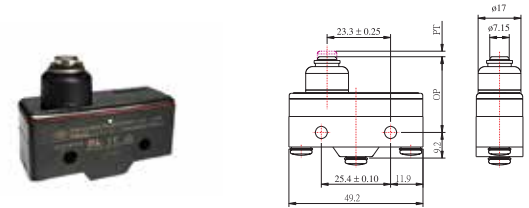
Part Number	Description	IP
MJ2-1308	Roller Plunger Actuator	IP40



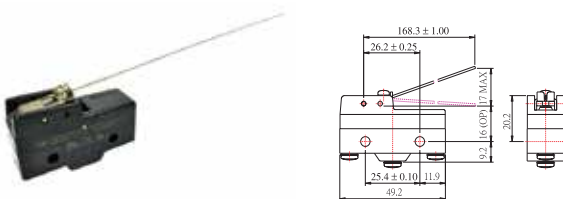
Part Number	Description	IP
MJ2-1308-R	Right Angled Roller Plunger Actuator	IP40



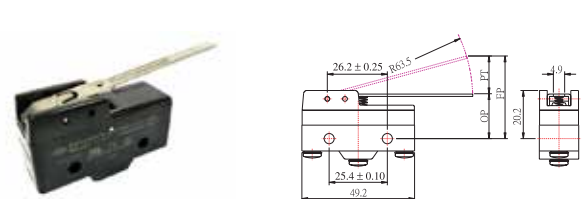
Part Number	Description	IP
MJ2-1317	Plunger Actuator	IP65



Part Number	Description	IP
MJ2-1515	Sealed Plunger Actuator	IP65



Part Number	Description	IP
MJ2-1578	168mm Wire Lever Actuator	IP40



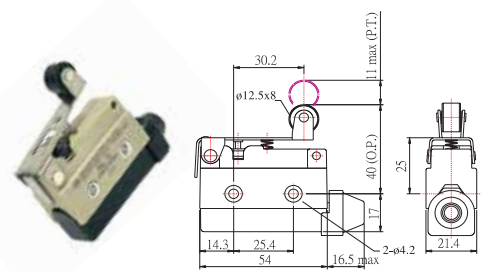
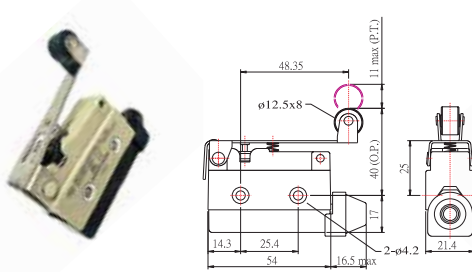
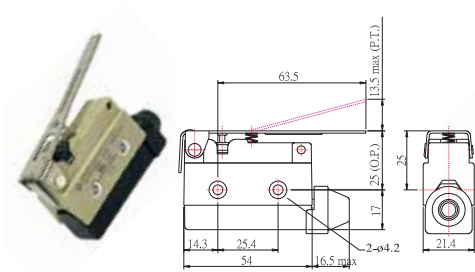
Part Number	Description	IP
MJ2-1701	Long Lever Actuator	IP40

Limit Switches - MN Series

250V AC 10A, SPDT, IP65, PBT, Phenolic & Steel body, Snap-acting Switch

- Side mount switches
- Momentary contacts
- Wide choice of heads and actuators
- Sealed actuators
- Completely sealed structure
- Plastic sealed construction
- Temperature range -15° C to +80° C
- 10A at 250V AC
- 0.5A at 125V DC
- 120 operations/min.

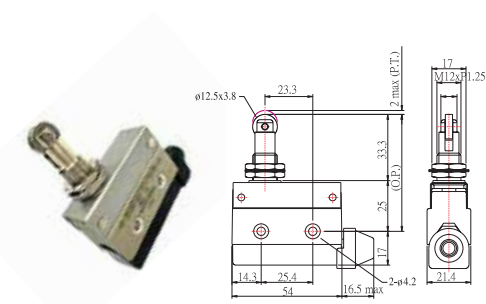
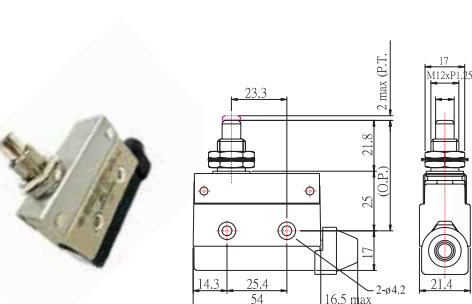
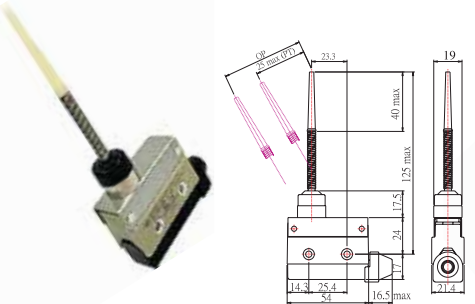
Operating Speed	0.01mm to 50cm/sec (at the pin plunger)
Operating Frequency	120 operations/min
Vibration	Malfunction durability: 10 to 55Hz; 1.5mm double amplitude
Shock	Mechanical durability: Approx 1km/sec ² (approx 100 G's) Malfunction durability: Approx 300m/sec ² (approx 30 G's)
Operating Temperature	-10°C to +80°C
Service Life	Mechanical: 10,000,000 operations (min) Electrical: 500,000 operations min (2A 110V AC)
Humidity	95% RH max (at +20° to +30°C)
Electrical Contacts	1 CO 250V AC 10A / 125V DC 500mA (resistive)
Degree of protection	IP65



Part Number	Description
MN-5120	Lever Actuator

Part Number	Description
MN-5121	Roller Lever Actuator

Part Number	Description
MN-5141	Roller Lever Actuator



Part Number	Description
MN-5166	Flexible Arm Actuator

Part Number	Description
MN-5310	Plunger Actuator

Part Number	Description
MN-5311	Roller Plunger Actuator

Model	OF (max)	RF (min)	PT (max)	OT (min)	DT (max)	OP
MN-5120	150g	40g	13.5mm	4.0mm	3.2mm	25 ± 2.0mm
MN-5121	180g	50g	11.0mm	3.0mm	2.4mm	40 ± 1.9mm
MN-5141	240g	80g	6.5mm	2.0mm	1.5mm	40 ± 1.6mm
MN-5166	120g	-	25mm	11mm	-	-
MN-5310	600g	100g	2.0mm	6.0mm	0.8mm	46.8 ± 1.5mm
MN-5311	600g	100g	2.0mm	6.0mm	0.8mm	58.3 ± 1.5mm

OF = Operating Force, RF = Release Force, PT = Pre-Travel, OT = Over-Travel, DT = Differential Travel, OP = Operation Position

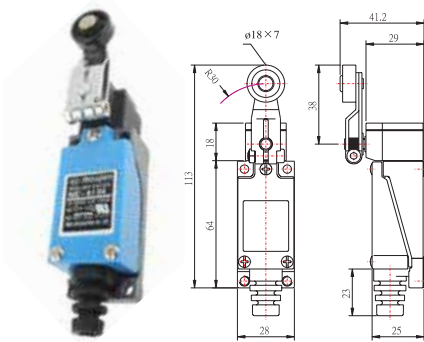
Limit Switches - ME Series

250V AC 5A, DPST, IP65, PBT, Zinc Alloy body, 1 NO + 1 NC, Snap-acting Switch

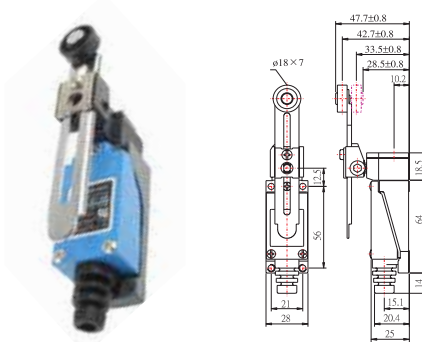
Rotary motion roller lever, and rod actuators, are adjustable through 360°. They may be set for operation clockwise, counter-clockwise, or in both directions. Operating heads can be positioned in any of the four 90° positions.

- Variety of operating characteristics
- Wide choice of heads and actuators
- Captive cover screws
- Dust proof, Oil-Tight, Water Resistant
- Temperature range -15° C to 70° C

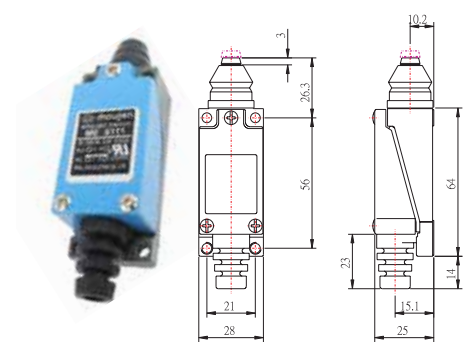
Operating Speed	0.5mm to 50m/sec
Operating Frequency	Mechanical: 120 operations/min Electrical: 30 operations/min
Vibration	Malfunction durability: 10 to 55Hz; 1.5mm double amplitude
Shock	Mechanical durability: Approx 1km/sec ² (approx 100 G's) Malfunction durability: Approx 300m/sec ² (approx 30 G's)
Operating Temperature	-15°C to +70°C
Service Life	Mechanical: 10,000,000 operations (min) Electrical: 300,000 operations min (2A 110V AC)
Humidity	95% RH max
Electrical Contacts	1 NO + 1 NC 250V AC 5A / 115V DC 400mA (resistive)
Degree of protection	IP65



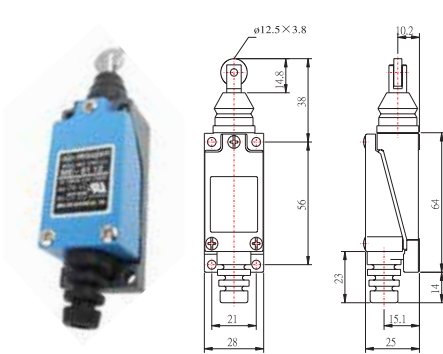
Part Number	Description
ME-8104	Roller Actuator



Part Number	Description
ME-8108	Adjustable Roller Actuator



Part Number	Description
ME-8111	Plunger Type Actuator



Part Number	Description
ME-8112	Roller Plunger Actuator



Part Number	Description
ME-8166	Flexible Rod Actuator

Model	OF (max)	RF (min)	PT (max)	OT (min)	DT (max)	TT (min)
ME-8104	600g	50g	20°	75°	10°	95°
ME-8108	340g	21g	20°	75°	10°	95°
ME-8111	900g	150g	1.5mm	4.0mm	0.7mm	5mm
ME-8112	900g	150g	1.5mm	4.0mm	0.7mm	5mm
ME-8166	90g	-	30mm	20mm	-	-

OF = Operating Force, RF = Release Force, PT = Pre-Travel, OT = Over-Travel, DT = Differential Travel, TT = Total Travel

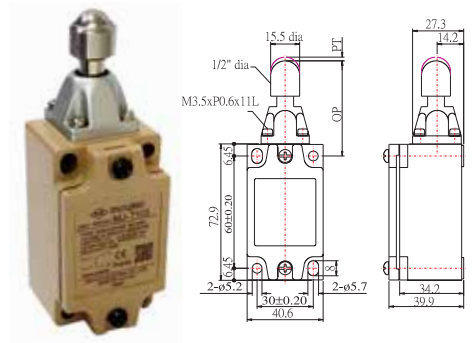
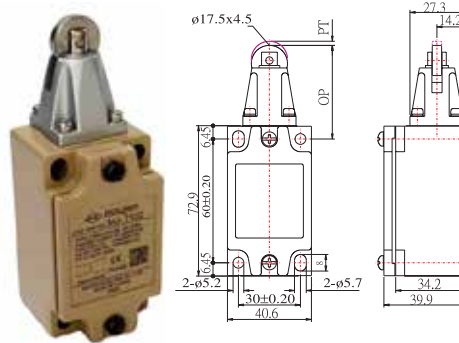
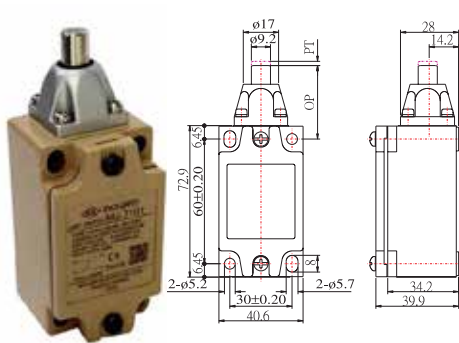
Limit Switches - MJ Series

300V AC 10A, DPST, IP65, Aluminium Alloy body, 1 NO + 1 NC, Snap-acting Switch

The MJ series of limit switches from Moujen, feature a rigid diecast construction, and oil/water tight housing, and operates in temperatures of -10 to +80 degrees Celsius. This rugged series, offers a wide choice of actuators and comes with 1/2" conduit entry. The double contacts, 1NO/1NC, are rated at 10A/250VAC.

- Captive cover screws
- Dustproof. Oil-Tight, Water-Resistant
- Stainless steel essentials
- Temperature range -10° C to 80° C

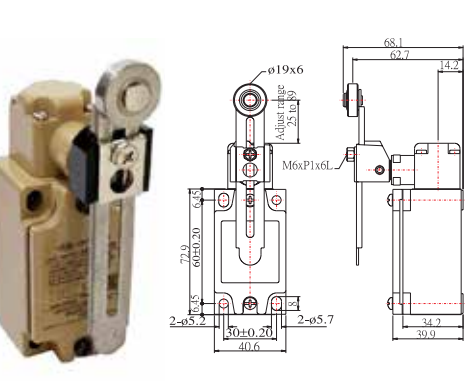
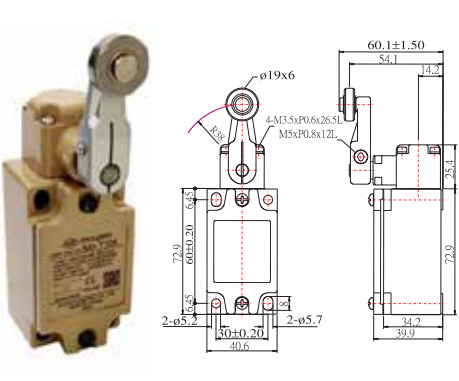
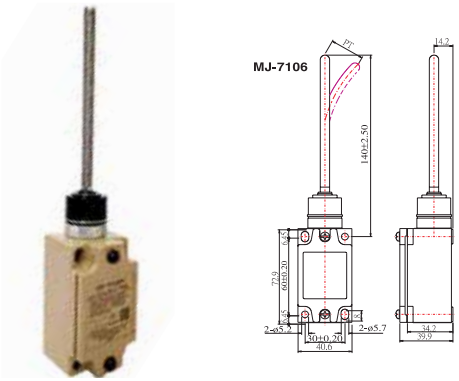
Operating Speed	1mm to 2m/sec
Operating Frequency	Mechanical: 120 operations/min Electrical: 30 operations/min
Vibration	Malfunction durability: 10 to 55Hz; 1.5mm double amplitude
Shock	Mechanical durability: Approx 1km/sec ² (approx 100 G's) Malfunction durability: Approx 300m/sec ² (approx 30 G's)
Operating Temperature	-10°C to +80°C
Service Life	Mechanical: 15,000,000 operations (min) Electrical: 500,000 operations min (2.5A 110V AC)
Humidity	95% RH max
Electrical Contacts	1 NO + 1 NC Double Break Isolated 300V AC 10A / 125V DC 800mA (resistive)
Degree of protection	IP65



Part Number	Description
MJ-7101	Oil Tight Plunger Actuator

Part Number	Description
MJ-7102	Oil Tight Roller Plunger Actuator

Part Number	Description
MJ-7103	Oil Tight Ball Plunger Actuator



Part Number	Description
MJ-7106	Oil Tight Spring Arm Actuator

Part Number	Description
MJ-7104	45° Oil Tight Roller Actuator

Part Number	Description
MJ-7108	45° Oil Tight Adjustable Roller Lever

Part Number	Description
MJ-7204	90° Oil Tight Roller Actuator

Part Number	Description
MJ-7208	90° Oil Tight Adjustable Roller Lever

Model	OF (max)	RF (min)	PT (max)	OT (min)	DT (max)	OP	TT (min)
MJ-7101	2800g	900g	2.0mm	5.5mm	1.0mm	34 ± 0.8	-
MJ-7102	2800g	900g	2.0mm	5.5mm	1.0mm	44 ± 0.8	-
MJ-7103	2800g	900g	2.0mm	4.0mm	1.0mm	44.5 ± 0.8	-
MJ-7104	1400g	227g	15-20°	25°	12°	-	43°
MJ-7204	900g	50g	25-30°	60°	16°	-	90° + 10°
MJ-7106	150g	-	30°	-	-	-	-
MJ-7108	1400g	227g	15-20°	25°	12°	-	43°
MJ-7208	900g	50g	25-30°	60°	16°	-	90° + 10°

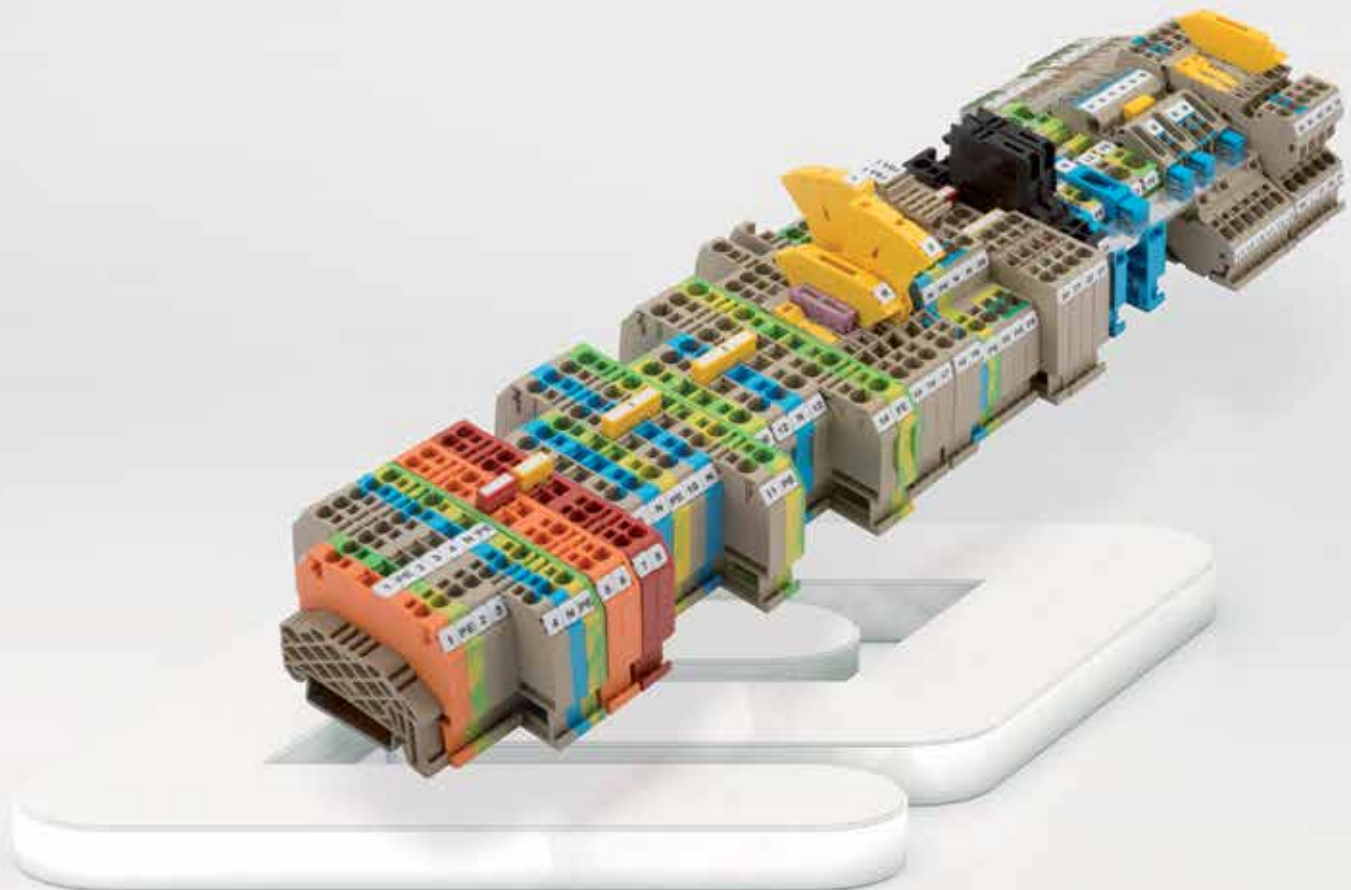
OF = Operating Force, RF = Release Force, PT = Pre-Travel, OT = Over-Travel, DT = Differential Travel, OP = Operation Position, TT = Total Travel



CONTA-CLIP

WE TAKE CARE OF EVERYTHING IN THE ELECTRICAL CABINET

Users of connection systems have come to rely on CONTA-CLIP's broad portfolio of products – and for good reason. Our products are developed in close consultation with users and under the strictest quality standards. They are available worldwide and are designed to meet individual requirements.



DEKRA



EAC



Single tier feed through terminals

Screw Connection



One of the most cutting-edge, screw connection terminal systems, currently available on the market, the CONTA-CLIP SRK series, combines all crucial innovations, in the field of electric terminal blocks, and satisfies even the most demanding quality requirements, regarding stability, safety and easy handling.

The series includes SRK feed-through terminals, and SSL protective earth terminals, in single and double level versions, as well as SSIK fuse disconnect terminals. A very versatile range of accessories is available for all terminal types.



		2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²
Ratings	Rated Voltage (IEC)	1000V	1000V	1000V	1000V	1000V
	Rated Current	24A	32A	41A	57A	76A
	Maximum Current	32A	41A	57A	76A	101A
Conductor size	Solid/Stranded	0.2-4mm ²	0.2-6mm ²	0.2-10mm ²	0.2-16mm ²	1.5-25mm ²
	Flexible					1-25mm ²
	Flexible with ferrules	0.2-2.5mm ²	0.2-4mm ²	0.2-6mm ²	0.2-10mm ²	1-16mm ²
Colour	Beige	17100.2	17104.2	17108.2	17112.2	17124.2
	Blue	17100.5	17104.5	17108.5		17124.5
	Red	17100.9	17104.9	17108.9		17124.9
	White	17100.7	17104.7			
	Black	17100.4	17104.4			
Plates	End Plate	2001.2	2001.2	2001.2	2001.2	17254.2
	Partition	2002.2	2002.2	2002.2	2002.2	
Jumpers (cuttable to desired length)	2 pole Insulated	17201.8	17211.8	17221.8	17231.8	17247.8
	10 pole Insulated	17209.8	17219.8	17229.8	17239.8	
	30 pole Insulated	17210.8	17220.8	17230.8	17240.8	
End cap for cut insulated jumpers		17200.8	17200.8	17200.8	17200.8	



		35mm ²	50mm ²	70mm ²	120mm ²
Ratings	Rated Voltage (IEC)	1000V	1000V	1000V	1000V
	Rated Current	125A	150A	192A	269A
	Maximum Current	150A	192A	232A	290A
Conductor size	Solid/Stranded	1.5-50mm ²	10-70mm ²	10-95mm ²	16-150mm ²
	Flexible		10-50mm ²	10-70mm ²	16-120mm ²
	Flexible with ferrules	1.5-35mm ²	10-50mm ²	10-70mm ²	16-95mm ²
Colour	Beige	17140.2	17156.2	17161.2	17165.2
Jumpers	2 pole insulated	17252.8			

Earth terminals

Screw Connection



		4mm ²	6mm ²	10mm ²	16mm ²	35mm ²
Conductor size	Solid/Stranded	0.2-6mm ²	0.2-10mm ²	0.2-16mm ²	1.5-25mm ²	1.5-50mm ²
	Flexible				1-25mm ²	
	Flexible with ferrules	0.2-4mm ²	0.2-6mm ²	0.2-10mm ²	1-16mm ²	1.5-35mm ²
Colour	Green/Yellow	17107.2	17111.2	17115.2	17130.2	17145.2
End Plate		2001.1	2001.1	2001.1	17254.1	

Multi-tier feed through terminals

Screw Connection

*More 3 tier initiator terminals available on next page



		2.5mm ² Triple*	2.5mm ² Double	4mm ² Double	10mm ² Double
Ratings	Rated Voltage (IEC)	250V	1000V	1000V	1000V
	Rated Current	24A	24A	32A	57A
	Maximum Current		32A	41A	76A
Conductor size	Solid/Stranded	0.2-4mm ²	0.2-4mm ²	0.2-6mm ²	0.2-16mm ²
	Flexible				
	Flexible with ferrules	0.2-2.5mm ²	0.2-2.5mm ²	0.2-4mm ²	0.2-10mm ²
Colour	Beige	2268.2	17180.2	17185.2	17190.2
End Plate		2699.2	17292.2	17292.2	17293.2
Jumpers (cuttable to desired length)	2 pole Insulated		17201.8	17211.8	17231.8
	10 pole Insulated		17209.8	17219.8	17239.8
	30 pole Insulated		17210.8	17220.8	17240.8
	10 pole uninsulated	2425.0			
	98 pole uninsulated	2151.0			
End cap for cut insulated jumpers			17200.8	17200.8	17200.8



		2.5mm ² Triple w/ earth	2.5mm ² Double	4mm ² Double	10mm ² Double
Ratings		As above	As above	As above	As above
Conductor size					
Colour	Beige/Earth	1425.2	17182.2	17187.2	17192.2
End Plate		2862.2	17292.1	17292.1	17293.1
10 pole Insulated jumper		2141.0	17209.8	17219.8	17239.8

Initiator terminals

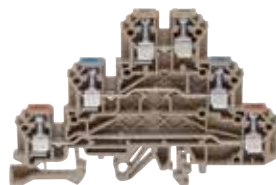
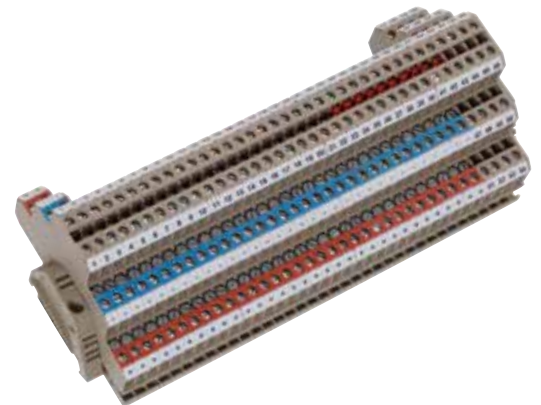
Screw Connection



In the field of machinery construction, inductive/capacitive proximity switches, and diffuse reflection sensors, are being increasingly used, for contactless switching purposes. These sensors are mostly designed for three-wire systems: plus and minus wires, for the power supply, and a third wire for switching signals.

In order to ensure the proper overview of wiring, and also to help you save time and space during your work, CONTA-CLIP offers a 5mm thin initiator terminal with a screw connection – the IK 2.5. This product combines all of the connections found in an initiator, or an actuator into a single terminal.

When combined with the IKD 2.5 power supply terminal, it is possible to connect the terminal strip, of the IK 2.5 initiator terminals, to the power supply without any loss of poles.



2.5mm² Triple - IKD 2.5

2.5mm² Triple - IK 2.5

		2.5mm² Triple - IKD 2.5	2.5mm² Triple - IK 2.5
Ratings	Rated Voltage (IEC)	250V	250V
	Rated Current	24A	24A
Conductor size	Solid/Stranded	0.2-4mm²	0.2-4mm²
	Flexible		
	Flexible with ferrules	0.2-2.5mm²	0.2-2.5mm²
Colour	Beige	2269.2	1260.2
End Plate		2699.2	2698.2
Jumpers	10 pole uninsulated	2425.0	2425.0
	98 pole uninsulated	2151.0	2151.0



Looking for a compact connector for sensors?

Techno Connectors are rated to IP68 and available in a range of pin counts, from 2 to 8 pole.

Landscaping, irrigation, lighting, pumping, industrial and signage applications, are some of the toughest tests for electrical connectors. Often subjected to freezing temperatures, direct sunlight, heavy rain, and even full submersion in water, or buried underground, the connectors need to protect wiring year round, with no requirement for maintenance or repair.

The Tee range of waterproof products from Italian manufacturer, Techno, are ideally suited to these types of applications and many more. Techno connectors are re-useable, as they do not require gel, and accommodate a wide range of cable sizes.

View our stocked range on pages 30-33, or visit www.techno.it to view the massive range available from Italy.

Fused and Disconnect terminals

Screw Connection



The STK 1 and STK D1 fuse-disconnect terminals, feature a compact shape, so they take up minimal space. The hinged lever, is used to hold the fuse, and locks into its open position. LED status displays, are available for a variety of voltage ranges.

The fuse-disconnect terminals SSIK, feature an extraction lever, that locks into its end position and allows a spare fuse to be attached from the side. Two cross-connection channels, within the fuse-disconnect terminals, allow for potentials to be distributed to adjacent fused and feed-through terminals, from the SRK series, using the standard 4mm² jumper bars. Two or three pole extraction levers, can be coupled, and operated simultaneously by using the VBS connection sleeves. They are available with or without a status display, whereby the display can be retro-fitted onto the base terminal, at a later point in time.



The black fuse holders listed below, have an extended temperature range up to 140°C



4mm² fuse terminal (STK 1) 4mm² fuse terminal w/- feed through (STK D1) 6mm² fuse terminal (SSIK) 10mm² fuse terminal

Ratings	Rated Voltage (IEC)	400V	400V	500V	400V
	Rated Current	6.3A	6.3A	10A	10A
Fuse size		5x20	5x20	5x20	5x20
Conductor size		0.2-4mm ²	0.2-4mm ²	0.14-6mm ²	0.2-10mm ²
Colour	Beige	2190.2	1079.2		
	Black			17150.4	1367.4
2 pole VBS connection sleeve		2873.3	2873.3	2873.3	
3 pole VBS connection sleeve		2874.3	2874.3	2874.3	
30 pole Insulated Jumper bar				17220.8	
End Plate		2046.2	2187.2	17258.4	2047.4



10mm² fuse terminal 4mm² Disconnect Terminal Auto blade fuse terminal* Current 32V Auto Fuse

Ratings	Rated Voltage (IEC)	400V	400V	400V (fuse = 32V)
	Rated Current	10A	10A	18A
Fuse size		6.3x32	5x20	Auto Blade Fuse
Conductor size		0.2-10mm ²	0.2-4mm ²	0.5-2.5mm ²
Colour	Beige		1390.2	3609.2
	Black	17041.4		
End Plate		Not required		3796.2

1A	4991.0
2A	4992.0
3A	4993.0
4A	4994.0
5A	4995.0
7.5A	4996.0
10A	4997.0
15A	4998.0

*Auto blade fuse terminal is spring clamp termination.

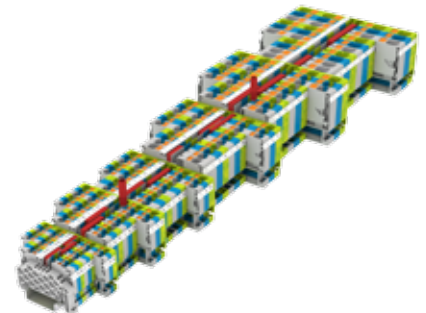
Push-in feed through terminals

Push-in Connection

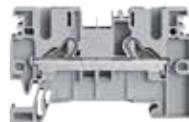


The PRK terminal blocks with Push-in wire connections have distinct advantages over other existing connection systems. Our CONTA-CLIP solution permits solid and stranded (with wire-end ferrules) wires to be inserted using minimal force and no tools. The PushIn spring ensures high contact force. The wire can be removed using the built-in insulated push mechanism.

Despite the high contact force of the push-in-spring, the PRK series terminals allow a safe tool-free insertion of conductors with low insertion forces. The conductors are decontacted via the integrated / insulated pushers, which ensure a safe actuation of the clamping point. This results in a noticeable time advantage in the wiring process.



Technical Data		2.5mm ²	4mm ²	6mm ²
Ratings	Rated Voltage (IEC)	800V	800V	1000V
	Rated Current	28A	32A	52A
Conductor size	Solid	0.14-4mm ²	0.2-6mm ²	0.5-10mm ²
	Flexible with ferrules	0.14-2.5mm ²	0.2-4mm ²	0.5-6mm ²



Size	2.5mm ²	2 way	3 way	4 way
Colour	Grey	27006.6	27008.6	27010.6
Plates	End Plate	27103.6	27104.6	27105.6
Push-in Jumpers	2 pole Insulated	27132.9	27132.9	27132.9
	10 pole Insulated	27140.9	27140.9	27140.9
	20 pole Insulated	27141.9	27141.9	27141.9

Size	4mm ²	2 way	3 way	4 way
Colour	Grey	27012.6	27014.6	27016.6
Plates	End Plate	27106.6	27107.6	27108.6
Push-in Jumpers	2 pole Insulated	27142.9	27142.9	27142.9
	10 pole Insulated	27150.9	27150.9	27150.9
	20 pole Insulated	27151.9	27151.9	27151.9

Size	6mm ²	2 way	3 way	4 way
Colour	Grey	27018.6	27020.6	27022.6
Plates	End Plate	27109.6	27110.6	27111.6
Push-in Jumpers	2 pole Insulated	27152.9	27152.9	27152.9
	10 pole Insulated	27160.9	27160.9	27160.9
	20 pole Insulated	27161.9	27161.9	27161.9



Size	2.5mm ²	27007.2	27009.2	27011.2
	4mm ²	27013.2	27015.2	27017.2
	6mm ²	27019.2	27021.2	27023.2
End Plate	See grey feed through terminal section - end plates only available in grey			

Spring Clamp feed through terminals

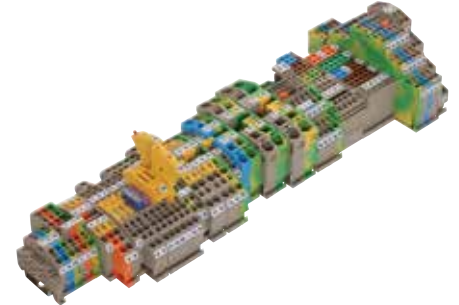
Tension Spring Connection



CONTA-CLIP, offers an innovative product line, featuring the proven tension-spring connection system, for the smallest cross-sections, ranging from 0.2mm² to 16mm². This includes feed through, and protective earth terminal, disconnect terminals, fused terminals, actuator terminals, sensor terminals, motor connection terminals, and direct mounting terminals.

The tension-spring top mechanism, provides safe and quick connections, for solid and stranded wires, with or without wire-end ferrules. The protective-earth terminals, feature a PE foot contact, that is snapped on, ensuring mechanical and electrical safety. The PE foot contact is on both sides of the PE terminals, and can be snapped on to the DIN rail, with no screws.

Our well-designed line of accessories, allows you to significantly reduce your installation and storage costs. You can multiply voltage potentials, with the ZQI pluggable potential distribution systems - both horizontally, and vertically across tiers. All of the insulating materials, used in this product line are free of pollutants. They also comply with flammability class V0, (self- extinguishing), according to UL 94.



2.5mm² Single Tier



2.5mm² Double Deck



4mm² Single Tier

		2.5mm ² Single Tier	2.5mm ² Double Deck	4mm ² Single Tier
Ratings	Rated Voltage (IEC)	800V	500V	800V
	Rated Current	24A	24A	32A
Conductor size	Solid/Stranded	0.5-4mm ²	0.5-4mm ²	0.5-6mm ²
	Flexible with ferrules	0.5-2.5mm ²	0.5-2.5mm ²	0.5-4mm ²
Colour	Beige	3500.2	3562.2	3515.2
	Blue			3515.5
Plates	End Plate	3700.2	3756.2	3703.2
Jumpers	2 pole Insulated	3710.8	3710.8	3720.8
	10 pole Insulated	3718.8	3718.8	3728.8
	Vertical (tiers)		3744.2	



6mm² Single Tier



10mm² Single Tier



4mm² Earth

		6mm ² Single Tier	10mm ² Single Tier	4mm ² Earth
Ratings	Rated Voltage (IEC)	1000V	1000V	
	Rated Current	41A	57A	
Conductor size	Solid/Stranded	0.5-10mm ²	0.2-16mm ²	0.5-6mm ²
	Flexible with ferrules	0.5-6mm ²	0.2-10mm ²	0.5-4mm ²
Colour	Beige	3581.2	3597.2	3525.2
Plates	End Plate	3760.2	3788.2	3703.1
Jumpers	2 pole Insulated	3763.8	3789.8	
	10 pole Insulated	3771.8		

High Current terminals

Stud Connection, Din mount



The newest generation of stud terminals from CONTA-CLIP, offer secure connections, for all energy-transmitting applications. Depending on the wire cross-section, the HSKG stud terminals, can be used with M6, M8, M10, M12 and M16 threaded studs.

The rated current is from 125 A to 520 A, with a rated voltage of 1000 V. The wire connection range is from 2.5 mm² to 300 mm². Wires with crimped cable lugs, are applied to threaded bolts, and then connected securely to the busbar, by tightening the hex nut. Optimal security is guaranteed, by the low voltage drop, and by the use of self-extinguishing material, with a V0 (UL94) flammability rating.

When used together with the ADH hinged covers, the HSKG stud terminals provide outstanding finger and touch protection. The ADH cover is easy to mount; it simply snaps into the side walls of the stud terminals, as it is closed. In this quick and reliable way, touch-safe protection of the terminal points, is always guaranteed.



Conductor size	35mm ²	70mm ²	120mm ²	185mm ²	300mm ²
Stud Size	M6	M8	M10	M12	M16
Rated Voltage	1000V	1000V	1000V	1000V	1000V
Rated Current	125A	192A	269A	353A	520A
Dimensions	107 x 27 x 51mm	132 x 32 x 61mm	133 x 42 x 72mm	288 x 55 x 90mm	288 x 55 x 90mm
Terminal	17170.2	17035.2	17023.2	17024.2	17027.2
Cover (yellow)	17275.8	17268.8	17025.8	17123.8	17123.8
2 pole jumper	17276.0	17269.0	17241.0	17243.0	17245.0
3 pole jumper	17277.0	17270.0	17242.0	17244.0	17246.0

Terminal Strips

With wire protection

Screw connection with wire protection. The terminal housing is made from high-quality polyamide (PA 6.6 UL 94-V2). Other sizes available upon request.



Part Number	Description
1817.0	1.5mm ² 12 pole terminal strip with wire protection
1829.0	2.5mm ² 12 pole terminal strip with wire protection
1841.0	4.0mm ² 12 pole terminal strip with wire protection

Distribution blocks - low current

76A, 450V, screw or TS35 din mount

Single pole distribution (or combiner) terminal block, with screw clamp input accepting 2 x up to 16mm² inputs (25mm² stranded), and 14 x 0.5-14mm² cage clamp outputs.



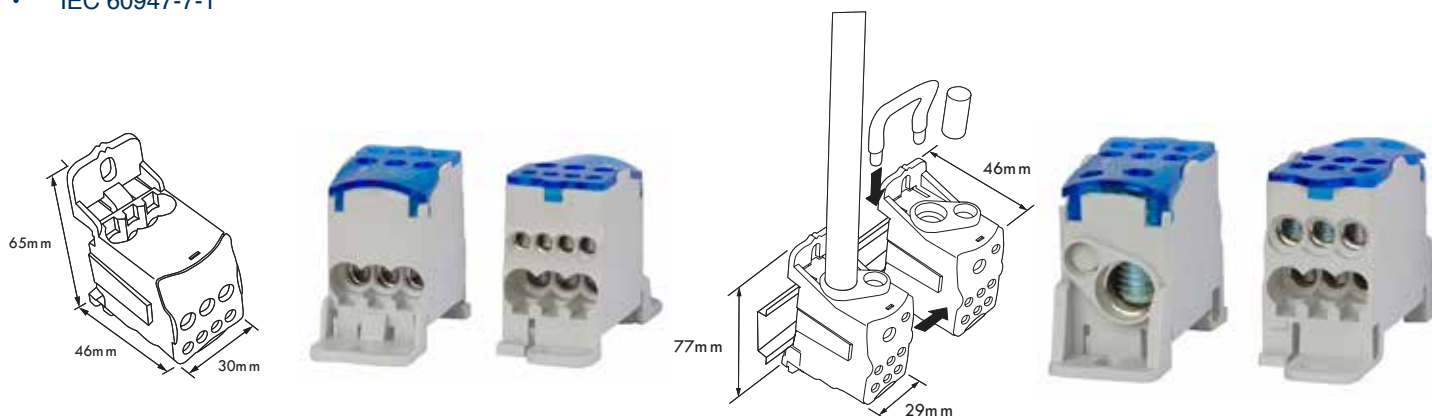
Part Number	Description
IK021081	2x 2.5-16mm ² Screw connect input, 14 x 0.5-4mm ² output

Distribution blocks - high current

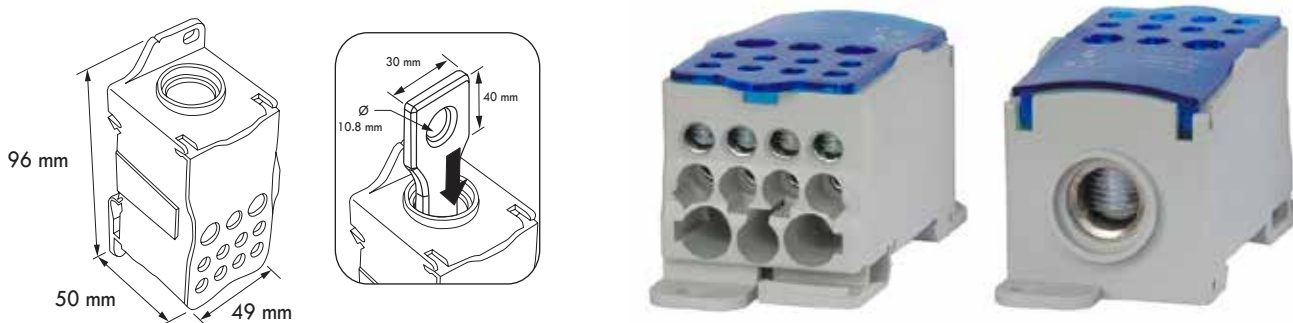
Tinned copper block, IP20 finger protection

A new generation of power distribution blocks, featuring tinned copper, and IP20 finger proof protection. These distribution blocks can be used as stand alone, or jumpered in parallel, to multiply the number of connection points. Busbar lugs, are also available for the larger current rating, distribution blocks.

- Space saving: compact
- Tinned copper block: high conductivity
- IP 20 protection/UL finger-safe: improved safety
- Cable fixing screw diameters >95% fill ratio: excellent electrical contact, safe connections
- Visual inspection of wire: confirmation of connection
- Hinged or removable cover: easy wiring
- Clip-on DIN rail or mount to panel with screws: easy fixing
- IEC 60947-7-1



Part Number	LK-80A	LK-160A
Current Rating	80A	160A
kA	22	30
Input (mm ²)	1x 6-16	1x 6-16 + 1x 10-35
Output (mm ²)	4x 2.5-6 + 2x 2.5-16	6x 2.5-16
Dimensions (mm)	65 x 46 x 30	77 x 46 x 29



Part Number	LK-250A	LK-400A
Current Rating	250A	400A
kA	51	51
Input (mm ²)	1x 35-120	1x 95-185
Output (mm ²)	2x 6-35 + 5x 2.5-16 + 4x 2.5-10	2x 6-35 + 5x 2.5-16 + 4x 2.5-10
Busbar Lug P/N	TF-250A	TF-400A
Dimensions (mm)	96 x 50 x 49	96 x 50 x 49

Din Rail and Accessories



Plastic screw-on end bracket



Metal foot screw-on end bracket



GT1 Group Label Holder

Description	Part Number	Part Number	Part Number
	2005.2	2828.0	3783.2



Suits TS35x7.5mm rail

DIN RAIL CUTTER



DIN Rail - TS35 x 7.5 Steel 2m

4563.0

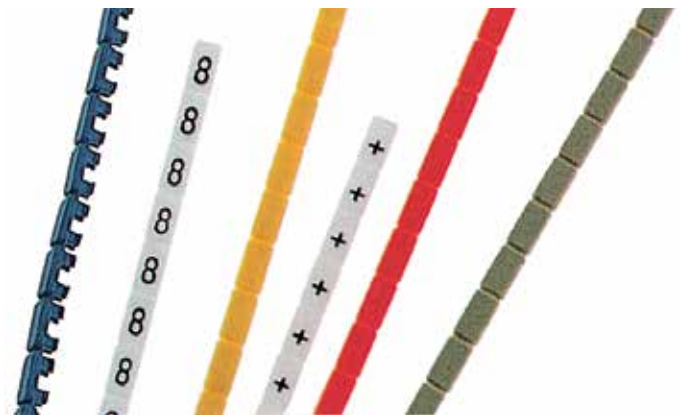
Universal Terminal Markers

2.5mm x 5mm

The AS 3/10, are suitable for labelling all Conta-Clip terminal blocks, end stops or marker holders wider than 5 mm. The compact shape, and one-character inscription, allow the printed standard tags, to be put together in any combination. Two or four tags, (depending on the terminal block or end stop), can be attached to a single terminal.

Material: Polyamide 6.6 UL 94-V2, halogen-free

Supplied as 1 x strip of 10 characters



Part Number	Marker	Part Number	Marker	Part Number	Marker	Part Number	Marker
2573.0001	1	2573.0200	A	2573.0211	L	2573.0222	W
2573.0002	2	2573.0201	B	2573.0212	M	2573.0223	X
2573.0003	3	2573.0202	C	2573.0213	N	2573.0224	Y
2573.0004	4	2573.0203	D	2573.0214	O	2573.0225	Z
2573.0005	5	2573.0204	E	2573.0215	P	2573.0419	+
2573.0006	6	2573.0205	F	2573.0216	Q	2573.0420	-
2573.0007	7	2573.0206	G	2573.0217	R	2571.1000	Green
2573.0008	8	2573.0207	H	2573.0218	S	2571.3000	Orange
2573.0009	9	2573.0208	I	2573.0219	T	2571.5000	Blue
2573.0000	0	2573.0209	J	2573.0220	U	2571.8000	Yellow
2571.0000	Blank	2573.0210	K	2573.0221	V	2571.9000	Red

2.5mm² Terminal Markers

5mm wide

The SB 5 quick marking system, is suitable for labelling all Conta-Clip terminals, that are wider than 5 mm (2.5mm²).

Supplied as 50 x strips of 10 markers - 500 markers per pack

Part Number	Marker
2431.0001	1-10
2431.0002	11-20
2431.0003	21-30

Part Number	Marker
2431.0004	31-40
2431.0005	41-50
2431.0006	51-60



Part Number	Marker
2431.0007	61-70
2431.0008	71-80
2431.0009	81-90

Part Number	Marker
2431.0010	99-100
2430.0000	Blank
2471.0004	L1,L2,L3,N PE*

Part Number	Marker
2432.0001	1
2432.0002	2

Part Number	Marker
2432.0003	3
2432.0004	4



Part Number	Marker
2432.0005	5
2432.0006	6

Part Number	Marker
2432.0007	7
2432.0008	8
2432.0009	9

4mm² Terminal Markers

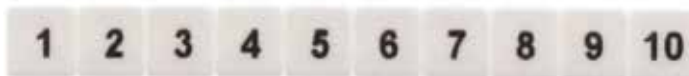
6mm wide

The SB 6 quick marking system, is suitable for labelling all Conta-Clip terminals, that are wider than 6 mm (4mm²).

Supplied as 50 x strips of 10 markers - 500 markers per pack

Part Number	Marker
2036.0001	1-10
2036.0002	11-20
2036.0003	21-30

Part Number	Marker
2036.0004	31-40
2036.0005	41-50
2036.0006	51-60



Part Number	Marker
2036.0007	61-70
2036.0008	71-80
2036.0009	81-90

Part Number	Marker
2036.0010	99-100
2035.0000	Blank
2040.0004	L1,L2,L3,N PE*

*PE = earth symbol



Terminal Block Assemblies

If you have a repetitive connection arrangement and you want to reduce the management costs CONTA-CLIP can give you an excellent service by creating Custom terminal blocks to design.

With only one part number, you will no longer have to worry about the management of all the other items, and no assembly!

Want to know more call us for a chat 03 85873200
email us at sales@switchesplus.com.au

Analogue, Digital, single or multi-channel Schrack, have a time switch solution for you. Made in Germany, our Time switches have been designed and proven to last the test of time. Din rail mountable, and modular in design, our time switch range, offers you an intuitive, and user friendly interface, and are packed with features. Model dependent, you can get up to 16A @ 250VAC, Multi-channel change over switching, 10 year battery back-up, 56 memories and more.

7 Day Digital Time Switch

10 year Li-Ion battery backup



Digital time switch, with 1 channel 7 day program. The BZT26440 has a power reserve of 10 years, with battery backup supplied by the built in Li-Ion battery. Spring Clamp Terminals.

- 10 year battery reserve
- Shortest switching time, 1 minute
- 230V AC 50-60 Hz
- 17.5mm wide
- Time accuracy, $\leq \pm 0.5$ s/day

Part Number	Memory Locations	Channels	Contacts
BZT26440	56	1	1 x NO

24 Hour Analogue Time Switch

Potential free, and phase independent



- Shortest switching time, 15 minutes
- 230V AC 50 Hz
- 17.5mm wide
- Synchronised with mains

Part Number	Switching segments	Channels	Contacts
BZT26448	96	1	1 x NO

Day/Week Digital Time Switch

3 year battery backup



Digital time switch, with daily and weekly program. User interface with icons on the display. Screw terminals. Simplified summer-/winter time changeover.

- 3 year battery reserve
- Shortest switching time, 1 minute
- 230V AC 50-60 Hz
- 35mm wide
- Time accuracy, $\leq \pm 0.5$ s/day

Part Number	Memory Locations	Channels	Contacts
BZT18D011W	28	1	1 x NO
BZT18D012W	56	2	2 x NO



- 3 day reserve
- Shortest switching time, 30 minutes
- 230V AC 50 Hz
- 52.5mm wide
- Time accuracy, $\leq \pm 1$ s/day (quartz)

Part Number	Segments	Channels	Contacts	Termination
BZ927131	48	1	1 x CO	Screw
BZT27131A	48	1	1 x CO	Spring clamp

Grid Protection Relay

Preconfigured for Australia

The grid and system protection relay, NA003-M64 from TELE Haase, provides secondary protection monitoring, where grid and system protection is required, typically for solar systems with 30kW or more of installed capacity.

- One device for local & international markets (preconfigured settings for Australia and other countries)
- Easy handling for service personnel and commissioning engineers
- Pre-configured parameter sets
- Individual solutions can be implemented through a variety of configuration options
- Integrated FRT (Fault ride through)



Part Number	Description
NA003-M64	Grid Protection and Monitoring Relay

Hour Run Meter

48x48mm, Panel mount, 230V, IP54, with terminal cover

- Large format numerals 4.4 mm in height
- Quick-fix retaining clip
- Easy to connect – screw terminals accessible from rear
- Ring seal for IP 54 – also seals front panel cutout
- 230V AC 50Hz
- 99,999 hours
- Accuracy 0.01 hours



Part Number	Description
BZ326414-A	Operating hour meter 230 V-AC

Phase Indication Relay

Din mount

- 3x LED Indicators
- 230/400VAC
- 17.5mm width



Part Number	Description
BZ106803	Phase fail indication 230/400V AC

Emergency Light Test Relay

Integated Test Button, Adjustable times, 1 CO contact

Single shot leading edge with control contact (Ws)
 The supply voltage U must be constantly to the device (green LED U/t illuminated). Pressing the integrated test key forces the output relay R to switch into on-position (yellow LED illuminated), so the emergency lights are disconnected from the mains and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated), the output relay R switches into off-position (yellow LED not illuminated) and the emergency lights are reconnected to the mains. During the interval, the test key can be operated any number of times. Prolonged pressure on the test key (>2s) aborts the running test interval (green LED U/t flashes fast) and a further cycle can be started.

For light loads greater than 16A, our Modular contactors can be used to increase switching capacity.

Time ranges

10min, 30 min, 60 min, 90 min, 2h and 3h

Indicators

Green LED U/t ON: indication of supply voltage
 Green LED U/t flashes: indication of time period
 Yellow LED ON/OFF: indication of relay output

Input circuit

Supply voltage: 230 V AC
 Reset time: 500 ms
 Rated surge voltage: 4kV

Output circuit

1 change over contact
 Rated voltage: 250 V AC
 Switching capacity: 16A
 Start up peak (20ms) 80A



Part Number	Description
ZR5RT011	Emergency Light Test Relay

Multifunction Timer

Multifunction time relay with auto sensing input voltage

This unique din rail mountable, wide-voltage 12-240V AC/DC, Multi-function timer, will allow you to stock only one item, to perform up to 7 selectable functions. Modular in design at only 17.5mm wide, this small package has 7 time ranges from 1 second to 100 hours.

Functions

The function has to be set before connecting the relay to the supply voltage.

- E ON delay
- R OFF delay
- Ws Single shot leading edge with control input
- Wa Single shot trailing edge with control input
- Wu Single shot leading edge voltage controlled

- Bp Flasher pause first
- Es * ON delay with control input
- F # Toggle (Flip Flop)

* Only available on ZR5 version

Only available on ZRA version

Time ranges

Time range	Adjustment range
1s	50ms - 1s
10s	500ms - 10s
1min	3s - 1min
10min	30s - 10min
1h	3min - 1h
10h	30min - 10h
100h	5h - 100h

Indicators

- Green LED U/t ON: indication of supply voltage
- Green LED U/t flashes: indication of time period
- Yellow LED R ON/OFF: indication of relay output



Part Number	Contact	Functions	Input voltage	Width
ZR5MF011	1 x 8A CO (250V AC)	7 function	12 - 240 V AC/DC	17.5mm
ZRAMF011	1 x 5A CO (250V AC)	7 function	24-48 V DC 24-240 V AC	17.5mm

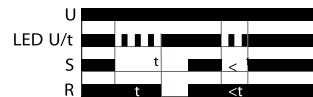
ON delay (E)

When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay R switches into on-position (yellow LED illuminated). This status remains until the supply voltage is interrupted. If the supply voltage is interrupted before the expiry of the interval t, the interval already expired is erased and is restarted when the supply voltage is next applied.



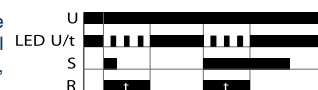
OFF delay (R)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). If the control contact is closed again before the interval t has expired, the interval already expired is erased and is restarted.



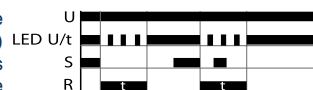
Single shot leading edge with control input (Ws)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (green LED U/t illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times. A further cycle can only be started when the cycle run has been completed.



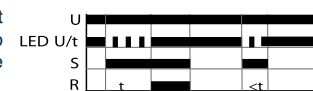
Single shot trailing edge with control input (Wa)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). Closing the control contact S has no influence on the condition of the output R. When the control contact is opened, the output relay switches into on-position (yellow LED illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated), the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times. A further cycle can only be started when the cycle run has been completed.



ON delay with control input (Es)

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay R switches into on-position (yellow LED illuminated). This status remains until the control contact is opened again. If the control contact is opened before the interval t has expired, the interval already expired is erased and is restarted with the next cycle.



Single shot leading edge voltage controlled (Wu)

When the supply voltage U is applied, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). This status remains until the supply voltage is interrupted. If the supply voltage is interrupted before the interval t has expired, the output relay switches into off-position. The interval already is erased and is restarted when the supply voltage is next applied.



Flasher pause first (Bp)

When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins again. After the interval t has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.



Pump Control - alternating or parallel

24 or 230V AC selected by power supply module

Alternating or parallel pump operations can be controlled via the G2ASMA20 pump control relay to evenly spread the load between two pumps.

The pump alternator is part of the GAMMA series, providing alternate access to two pumps and various other devices. The even distribution of duty, or parallel operation is possible at high demand, while operation can be done using one or two input signals. The timing offset of the two loads helps avoid water hammer effects, while the supply voltage is selectable using a TR2 power module. Finally, there are two separate change over relays for device control with a width of 22.5mm.

- Alternated control of two pumps (or other devices)
- Even distribution of duty
- Parallel duty at high demand
- Operation using 1 or 2 input signals (two modes of operation)
- Timing offset of the two loads to avoid water hammer effects
- Supply voltage selectable via TR2 power modules (TR2-24VAC or TR2-230VAC)
- 2 separate CO relays for device control



Part Number	Description
G2ASMA20	Pump Control Relay (requires additional power supply module)
TR2-24VAC	Power supply module to suit 24VAC Supply
TR2-230VAC	Power supply module to suit 230VAC Supply

Pump Control & Level Monitoring

24-230V AC/DC Supply Voltage

The new V4LM4S30 electrode relay from TELE, is used for level monitoring in conductive fluids and combines 10 different functions in one very compact device.

It monitors the level of a fluid via probes, which are directly immersed. Depending on the function selected, the V4LM controls the pumping in and pumping out, as well as the running dry and overflow alarm. The device is utilized where observing a defined fill level, represents an important criterion for function, efficiency and safety. It protects machines and systems from leakage damage, fluid loss, as well as running dry, or overflow.

Unlike float switches, the TELE V4LM, has no moving parts and thus has a high service life. In contrast to ultrasonic and radar measurements, the device is resistant to contamination, dust, foam, and mist, in the containers.

With extremely low probe voltage, small measuring currents, and a large sensitivity window from 0.25 to 500 kOhm, the fill level measurement, is suitable for feed applications, and does not endanger the animals. The selected measuring frequency of 18.3 Hz, enables an extremely robust measurement, without interference (no harmonics to mains frequency 50 or 60 Hz). In addition, the alternating current measurement prevents the build-up of oxyhydrogen gas, as well as electrolytic disintegration of the probes, which can occur with comparable devices with direct current measurement.

Functions:

- 2uA = Pump up; Min- / Max-Alarm (1 container, 4 probes)
- 2dA = Pump down; Min- / Max-Alarm (1 container, 4 probes)
- 3b- = Pump up and down; Min-Alarm (1 container, 3 (4) probes)
- 3b+ = Pump up and down; Max-Alarm (1 container, 3 (4) probes)
- 2u2 = Pump up (2 independent containers, 2 probes each)
- 2d2 = Pump down (2 independent containers, 2 probes each)
- 2uc = Pump up with pump change (1 container, 2 probes)

- 2dc = Pump down with pump change (1 container, 2 probes)
- 3w- = Well control; Min-Alarm (2 containers, 3 probes)
- 4ce = Level code (up to 4 containers, 4 probes)

Sensitivity (threshold):

Low = 0,25 ... 12,5 kΩ; High = 10 ... 500 kΩ



Part Number	Description
V4LMS30	Pump Control & Level Monitoring Relay

Current & Temperature Monitoring

24-230V AC/DC Supply Voltage



Function	1-phase AC/DC current monitoring	1-phase AC/DC current monitoring	Temperature monitoring (PTC)
O ... Over	•	•	
U ... Under	•	•	
W ... Window	•	•	
2MAX ... Maximum monitoring		•	
MM ... Minimum and maximum monitoring		•	
LATCH ... Error memory		•	
Temperature monitoring (PTC)			•
Short circuit monitoring (PTC)			•
Switching threshold			
Maximum	10 to 100% of I_N	10 to 100% of I_N	$\geq 3.6k\Omega$ (switch-off resistance)
Minimum	5 to 95% of I_N	5 to 95% of I_N	$\leq 1.6k\Omega$ (switch-on resistance)
Measuring circuit			
Measuring variable	Current AC/DC AC Sinus	Current AC/DC AC Sinus	Temperature
Measuring input	10A AC/DC	100A AC/DC Built-in current transformer	-
Supply circuit			
Supply voltage	AC: 110 - 240V DC: 24 - 240V AC: -15% to +15% DC: -30% to +30%	24 - 240V AC/DC AC: -15% to +10% DC: -30% to +30%	24 - 240V AC/DC -15% to +10%
Frequency range	16.6 to 400Hz or DC	16.6 to 400Hz or DC	16.6 to 400Hz or DC
Time circuits			
ON DELAY	approx. 300 ms	approx. 300 ms	approx. 50 ms
Start-up suppression time (START)	-	0 - 10 s	-
Tripping delay (DELAY)	0.1 - 10 s	0.1 - 10 s	-
Output circuit			
Number of switch contacts	1 CO contact	2 CO contacts	1 NO contact
Max. switching capacity	2000VA (8A / 250V AC)		
Design			
Dimensions (w x h x d)	22.5 x 67 x 76 mm	45 x 67 x 76 mm	22.5 x 67 x 76 mm
Certificates	CE, cULus, EAC		
Part Number	V2IM10AL10	V4IM100AL20	V2TF01

Timers & Monitoring Relays

Voltage Monitoring

24-230V AC/DC Supply Voltage

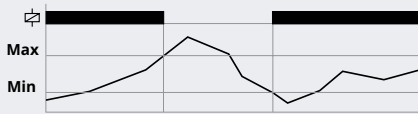


Function	Phase monitoring	3- phase AC voltage monitoring	1- phase AC/DC voltage monitoring	3- phase AC voltage monitoring
U ... Under		•	•	
W ... Window		•	•	
SEQ ... Phase sequence	•	•		•
Phase failure	•	•		•
ASYM ... Asymmetrie	•			•
Temperature monitoring (PTC)				•
Switching threshold				
Maximum	-	75 to 130% of U_N	80 to 115% of U_N	-
Minimum	-	70 to 125% of U_N	75 to 110% of U_N	-
Asymmetry	5 to 25%, OFF	-	-	5 to 25%, OFF
Measuring circuit				
Measuring variable	3~ AC Sinus	3~ AC Sinus	Voltage AC/DC AC Sinus	Temperature, Voltage 3~ AC Sinus
Measuring input	$U_N = 208/120V$ to 480/277V AC	$U_N = 400/230V$ AC	24V AC/DC; 230V AC	$U_N = 208/120V$ to 480/277V AC
Supply circuit				
Supply voltage	= Measuring voltage 3~ 208/120V to 480/277V AC -10% to +10%	= Measuring voltage 3(N)~ 400/230V AC -35% to +35%	= Measuring voltage 24V AC/DC; 230V AC 24V: -30% to +30% 230V: -30% to +20%	= Measuring voltage 3~ 208/120V to 480/277V AC -10% to +10%
Frequency range	48–63 Hz	16.6–400 Hz	16.6–400 Hz or DC	48–63 Hz
Time circuits				
ON DELAY	approx. 400 ms	approx. 200 ms	approx. 300 ms	approx. 500 ms
Tripping delay (DELAY)	< 250 ms	0.1 – 10 s	0.1 – 10 s	approx. 250 ms
Output circuit				
Number of switch contacts	1 CO contact	1 CO contact	1 CO contact	2 CO contacts
Max. switching capacity	2000VA (8A / 250V AC)			
Design				
Dimensions (w x h x d)	22.5 x 67 x 76 mm	22.5 x 67 x 76 mm	22.5 x 67 x 76 mm	45 x 67 x 76 mm
Certificates	CE, cULus, EAC			
Part Number	V2PF480Y/277VSY01	V2PM400Y/230VS10	V2UM230V10	V4PF480Y/277VSYTK02

TELE Haase Steuergeräte, is an Austrian based technology company that is passionate about hiring the best in the business to develop control and monitoring solutions for both the energy, and industrial sector. Founded in 1963, Tele-Haase has been a market leader for time and monitoring relays, and have been developing customized solutions, and components for the industrial and energy sectors for more than five decades. TELE Haase produces one-hundred percent of its core products in Austria.

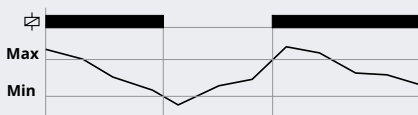


O OVER



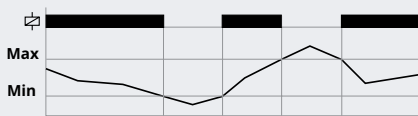
If the measured value exceeds the adjusted MAX threshold, the output relay switches into off-position. The output relay switches into on-position again, as soon as the measured value falls, below the adjusted MIN threshold.

U UNDER



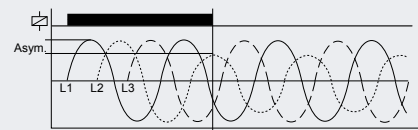
If the measured value falls below the adjusted MIN threshold, the output relay switches into off-position. The output relay switches into on-position again, as soon as the measured value exceeds the adjusted MAX threshold.

W WINDOW



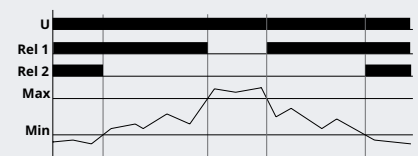
If the measured value falls below the adjusted MIN threshold, the output relay switches into off-position. The output relay switches into on-position again, as soon as the measured value exceeds the adjusted MIN threshold. If the measured value exceeds the adjusted MAX threshold, the output relay switches into off-position. The output relay switches into on-position again, as soon as the measured value falls below the adjusted MAX threshold.

ASYM ASYMMETRY MONITORING



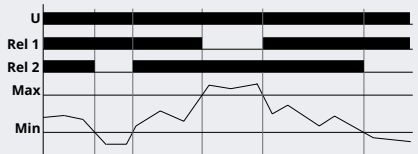
If the asymmetry of the phase-to-phase voltages exceeds the value set at the ASYM-regulator, the output relay switches into off-position. If the neutral wire is connected to the device, the asymmetry of the phase voltages referred to the neutral wire (Y-voltage) is monitored also. In that case both values of the asymmetry are evaluated and if one of the values exceeds the value set at the ASYM-regulator, the output relay switches into off-position.

2MAX MAXIMUM MONITORING



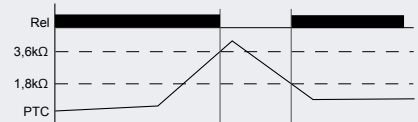
If the measured value, exceeds the adjusted MIN threshold, the output relay Rel2, switches into off-position. If the measured value, exceeds the adjusted MAX threshold, the output relay Rel1 switches into off-position. The output relays, Rel1 and Rel2, switch into on-position again, as soon as the measured value falls below the according adjusted threshold (MAX or MIN).

MM MINIMUM AND MAXIMUM MONITORING (MIN/MAX)



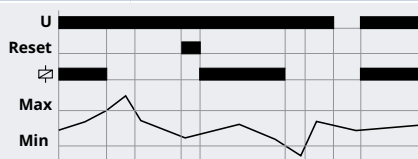
If the measured value falls below the adjusted MIN threshold, the output relay Rel2, switches into off-position. The output relay Rel2, switches into on-position again, as soon as the measured value, exceeds the adjusted MIN threshold. If the measured value exceeds the adjusted MAX threshold, the output relay Rel1 switches into off-position. The output relay Rel1 switches into on-position again, as soon as the measured value, exceeds the adjusted MIN threshold.

TEMP TEMPERATURE MONITORING



If the supply voltage U, is applied and the cumulative resistance of the PTC-circuit, is less than 3.6kΩ (standard temperature of the motor), the output relay R, switches into on-position. When the cumulative resistance of the PTC-circuit exceeds 3.6kΩ, the output relay switches into off-position. The output relay switches into on-position again, after the cumulative resistance falls below 1.6kΩ.

LATCH LATCH (ERROR MEMORY)



If the device detects a fault, the output relay only switches on again, when the fault latch, has been reset. The fault latch can be reset by means of an internal, or external reset button, or by interrupting the supply voltage.

Bell Transformers

Isolated windings, DIN rail mounted

- Din rail mountable bell transformer
- Includes PTC
- Protection Class IP40
- Isolated windings



Part Number	Power	Secondary Voltage	Secondary Current	Width	Primary Voltage
BZ326578A	30 VA	12 / 24 V	1.25A	53.5mm	220-240V AC
BZ326579A	63 VA	12 / 24 V	5.25A / 2.62A	105mm	220-240V AC

Power Supplies

Modular design, DIN rail mounted

Mornsun's modular series are a cost-effective, energy efficient solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise, compliant with international IEC62368 standards for EMC and safety sepecifitions meet IEC/EN61000-4, CISPR32/EN55032, UL62368, EN62368, IEC62368, IEC/EN61010, IEC/EN61558 and IEC60335. These light weight AC-DC converters also have an extremely compact design for space saving and are ideal for applications such as industrial control equipment, machinery, mechanical services and building automation.

Output Power	15W	60W
Output Current	630 mA	2.5 A
Output Voltage	24V DC	24V DC
Input Voltage	85-264V AC / 120-370V DC	85-264V AC / 120-370V DC
Dimensions (mm)	90 x 58 x 17.5	90 x 58 x 52
Part Number	LI15-20B24PR2	LI60-20B24PR2



Power Supplies

Industrial design, DIN rail mounted

Mornsun's Industrial series are a cost-effective, energy efficient power supply solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise for industrial control equipment, machinery, and other industrial equipment in a variety of harsh environments. These light weight AC-DC converters have an extremely compact design featuring good EMC performance, compliant with international UL61010, UL508 (LIxxx-20B24R2S models), EN/BS EN 62368 standards for EMC and safety.



Output Power	75W	120W	240W	480W
Output Current	3 A	5 A	10 A	20 A
Output Voltage	24V DC	24V DC	24V DC	24V DC
Input Voltage	90-264V AC / 120-370V DC	90-264V AC / 127-370V DC	85-264V AC / 120-370V DC	85-264V AC / 120-370V DC
Dimensions (mm)	130 x 98 x 32	130 x 100 x 36	130 x 110 x 41	130 x 132 x 48
Part Number	LI75-20B24R2S	LI120-20B24R2S	LIF240-10B24R2	LIF480-10B24R2

Conductor Stranding

VDE0295 / IEC 60228

Conductor Size (mm ²)	Stranded Wires Class 2	Multi Stranded Wires	Fine Wires Class 5	Superfine Wires Class 6	Column 5	Column 6	Column 7
0,14	-	-	18x0,10	18x0,10	18x0,10	36x0,70	72x0,05
0,25	-	-	14x0,15	32x0,10	32x0,10	65x0,70	128x0,05
0,34	-	7x0,25	19x0,15	42x0,10	42x0,10	88x0,70	174x0,05
0,38	-	7x0,27	12x0,20	21x0,15	48x0,10	100x0,70	194x0,05
0,50	7x0,30	7x0,30	16x0,20	28x0,15	64x0,10	131x0,70	256x0,05
0,75	7x0,37	7x0,37	24x0,20	42x0,15	96x0,10	195x0,70	384x0,05
1,00	7x0,43	7x0,43	32x0,20	56x0,15	128x0,10	260x0,70	512x0,05
1,50	7x0,52	7x0,52	30x0,25	84x0,15	192x0,10	392x0,70	768x0,05
2,50	7x0,67	19x0,14	50x0,25	140x0,15	320x0,10	651x0,70	1280x0,05
4,00	7x0,85	19x0,52	56x0,30	224x0,15	512x0,10	1040x0,70	-
6,00	7x1,05	19x0,64	84x0,30	192x0,20	768x0,10	1560x0,70	-
10,00	7x1,35	49x0,51	80x0,40	320x0,20	1280x0,10	2600x0,70	-
16,00	7x1,70	49x0,65	128x0,40	512x0,20	2048x0,10	-	-
25,00	7x2,13	84x0,62	200x0,40	800x0,20	3200x0,10	-	-
35,00	7x2,52	133x0,58	280x0,40	1120x0,20	-	-	-
50,00	7x3,02/19x1,83	133x0,69	400x0,40	705x0,30	-	-	-
70,00	19x2,17	189x0,69	356x0,50	990x0,30	-	-	-
95,00	19x2,52	259x0,69	485x0,50	1340x0,30	-	-	-
120,00	37x2,03	336x0,67	614x0,50	1690x0,30	-	-	-
150,00	37x2,27	392x0,69	765x0,50	2123x0,30	-	-	-
185,00	37x2,52	494x0,69	944x0,50	1470x0,40	-	-	-
240,00	61x2,24	627x0,70	1225x0,50	1905x0,40	-	-	-
300,00	61x2,50	790x0,70	1530x0,50	2385x0,40	-	-	-
400,00	61x2,89	-	2035x0,50	-	-	-	-
500,00	61x3,23	-	1768x0,60	-	-	-	-

The number of strands according to IEC 60228 shown in Class 2 is mandatory. Stranding shown in classes 5 & 6 gives the maximum strand diameters, and may have less strands, provided the conductor does not exceed the maximum resistance assigned to that cross-sectional area.

AWG Conversion Chart

US to European values

American Wire Gauge (AWG)	Cross Sectional Area (mm ²)	American Wire Gauge (AWG)	Cross Sectional Area (mm ²)	American Wire Gauge (AWG)	Cross Sectional Area (mm ²)	American Wire Gauge (AWG)	Cross Sectional Area (mm ²)
0000	107.16	5	16.76	13	2.63	20	0.52
000	84.97	6	13.29	14	2.08	21	0.41
00	67.40	7	10.55	15	1.65	22	0.33
0	53.46	8	8.36	16	1.31	23	0.26
1	42.39	9	6.63	17	1.04	24	0.20
2	33.61	10	5.26	18	0.82	25	0.16
3	26.65	11	4.17	19	0.65	26	0.13
4	21.14	12	3.31	20	0.52		

Minimum Size of Copper Earth Conductors

AS/NZS 3000

Active Conductors (mm ²)	Earth (mm ²)
1	* 1
1.5	* 1.5
2.5	2.5
4	2.5
6	2.5
10	4
16	6

Active Conductors (mm ²)	Earth (mm ²)
25	6
35	10
50	16
70	25
95	25
120	35
150	50

Active Conductors (mm ²)	Earth (mm ²)
185	70
240	95
300	120
400	** ≥120
500	** ≥120
630	** ≥120

* Refer Wiring Rules (AS/NZS 3000) regarding 1.5 earthing conductors. **A larger earthing conductor may be required to satisfy Clause 5.3.3.1.1

IP Ratings

The IP Code, (or International Protection Rating, sometimes also interpreted as Ingress Protection Rating), consists of the letters IP followed by two digits, and an optional letter. As defined in international standard IEC 60529, it classifies the degrees of protection provided, against the intrusion of solid objects, (including body parts like hands and fingers), dust, accidental contact, and water, in electrical enclosures. The standard aims to provide users more detailed information than vague marketing terms, such as waterproof.

Level	Protection against solid objects
0	Not protected
1	>50mm
2	>12.5mm
3	>2.5mm
4	>1mm
5	Dust Protected (no harmful deposit)
6	Totally protected against dust

IP 68

Level	Protection against liquids
0	Not protected
1	Dripping water
2	Dripping water when tilted up to 15°
3	Dripping water when tilted up to 60°
4	Splashing water
5	Low pressure water jets
6	Powerful water jets
7	Temporary Immersion up to 1m
8	Continual Immersion beyond 1m
9K	Powerful high temperature water jets

The first digit indicates the level of protection that the enclosure provides against access to hazardous parts, (e.g., electrical conductors, moving parts), and the ingress of solid foreign objects.

The second digit indicates the level of protection of the equipment, inside the enclosure against harmful ingress of water.

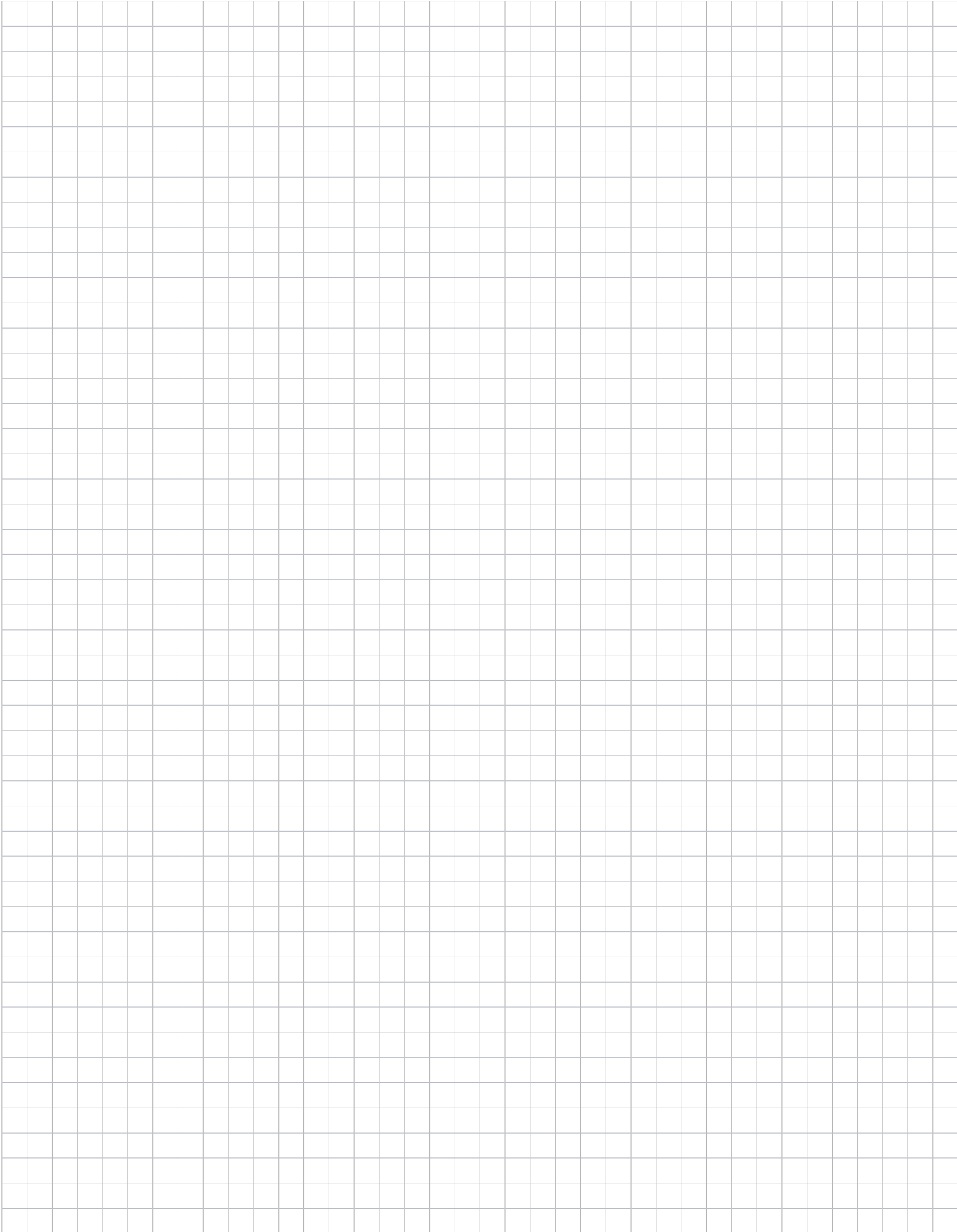
Enclosure Material Selection

The table below indicates basic properties of our enclosures. More detailed resistance tables are available upon request.

	ABS	Polycarbonate	Polyester	Fibreglass	Powder coated steel	304 Stainless steel
Outdoor Use	★	★★★	★★★★★	★★★★★	★★★★★	★★★★★
Indoor Use	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
High rigidity	★★★	★★★	★★★	★★★★★	★★★★★	★★★★★
Impact resistance	★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Chemical resistance	★★★	Not tested	★★★★★	★★★★★	★★★★★	★★★★★
Flammability	UL94-HB	UL94-V0	UL94-5VA	UL94-5V	Non-flammable	Non-flammable

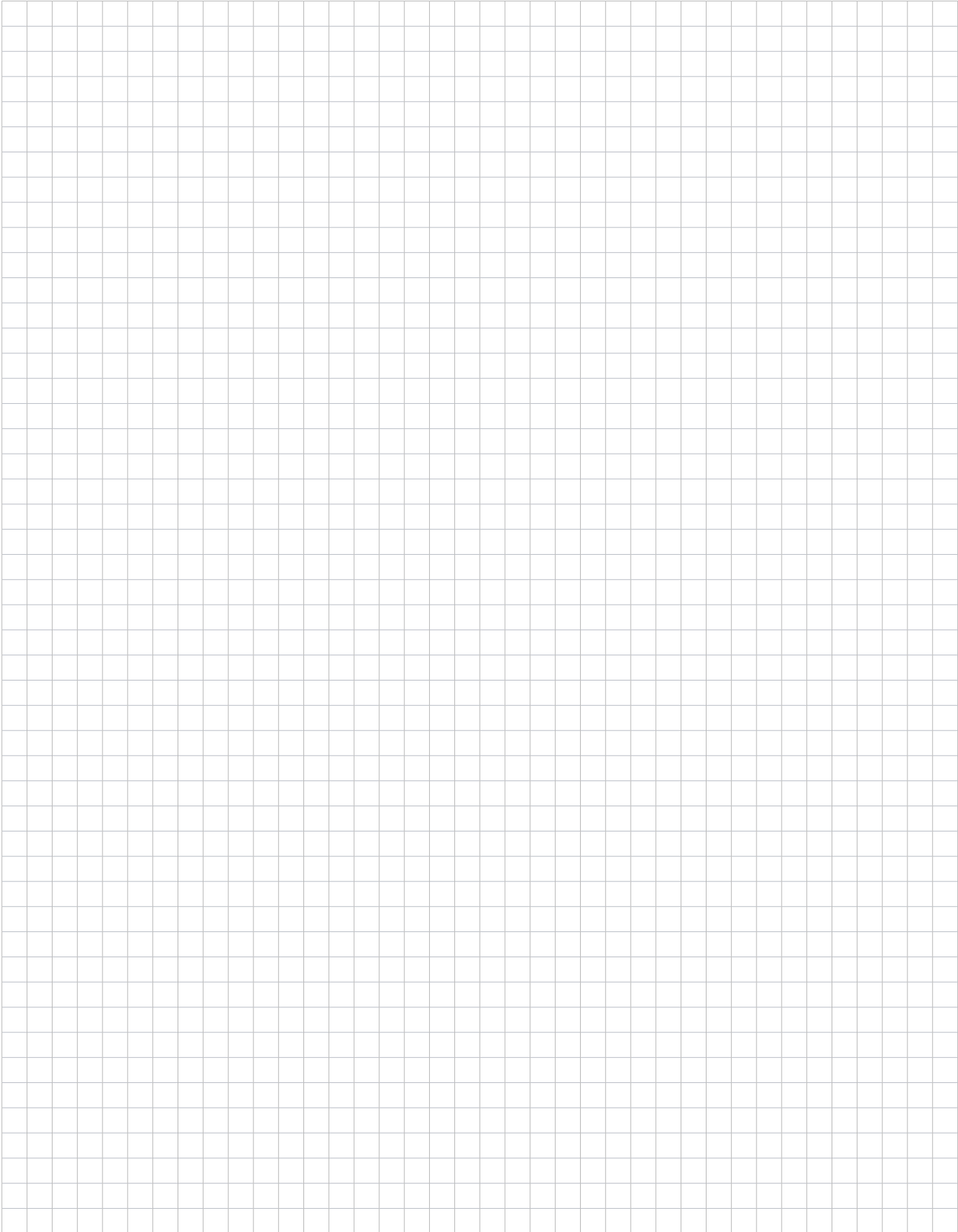
★Poor ★★Good ★★★Very Good ★★★★★Excellent





My preferred supplier for:

- **Connectors**
- **Enclosures**
- **Switches**
- **Pilot Devices**
- **Cable Accessories**
- **Din Rail Terminals**



My preferred supplier for:

- **Connectors**
- **Enclosures**
- **Switches**
- **Pilot Devices**
- **Cable Accessories**
- **Din Rail Terminals**



Switches Plus Components Pty Ltd
242 Governor Road, Braeside, VIC, 3195
Phone: 03 8587 3200
Email: sales@switchesplus.com.au

V 23.10.12.1