IPCH-4X-PCL-TCP-24DC-UT - Pulse measuring device

1045379

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Evaluation unit for the recording of surge currents and transient overvoltages over external sensor cables. Communication of the measured data to PROFICLOUD via Ethernet. The data evaluated in the cloud can be accessed on the device via Modbus/TCP or RESTful web service.

Product description

ImpulseCheck is the first assistance system for surge protection in the field of mains protection. The system consists of an IPCH-4X-PCL-TCP-24DC-UT pulse measuring device, the sensors, and the ImpulseAnalytics application in PROFICLOUD. The current state of the surge protection can be accessed online at any time. In addition to monitoring the surge protective devices, ImpulseCheck and ImpulseAnalytics also provide a simple and comprehensive analysis of the system's EMC. The accurate recording of electromagnetic interference on the supply lines makes it possible to draw conclusions as to their cause. Possible disturbance variables are detected before they result in a system failure. This means that service and maintenance work can be scheduled in advance and implemented more efficiently. In addition to using ImpulseAnalytics, the data that is acquired and evaluated in the cloud can also be accessed directly on the device via Modbus/TCP or a RESTful web service.

Your advantages

- Keeping the pulse of your system: Measure the status of your system and determine the remaining life expectancy (state of health) of SPDs
- Always on the safe side: status reports complying with standards, at any time at the push of a button
- Benefit from digital added value and services: Cloud-based data acquisition and the ability to display and combine measured values support completely new automated processes

Commercial data

Item number	1045379
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CLB321
Product key	CLB321
Catalog page	Page 213 (C-4-2019)
GTIN	4055626633879
Weight per piece (including packing)	182.5 g
Weight per piece (excluding packing)	127.9 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

General

Note	The product was successfully tested in an extended temperature range of -35 °C … +85 °C. When using in the extended temperature range, note the information in the module-specific user manual.
	The ImpulseCheck module is designed to be operated in a control cabinet in conjunction with surge protective devices (SPDs) that are used in power supply systems with nominal alternating or nominal DC voltages of no more than 600 V AC or 600 V DC between the conductor and neutral conductor. These maximum nominal voltage values refer to environments of overvoltage category IV and pollution degree 2 at a maximum installation altitude of 2,000 m above sea level.
	NOTE: Electrical damage due to overload. Provide external protection for the 24 V area. To ensure reliable tripping in the event of an error, the power supply unit must be able to supply the tripping current of the external overcurrent protection.

Product properties

Product type	Evaluation unit
Product family	IMPULSECHECK
Type	DIN rail module, one-piece

Insulation characteristics

Pollution degree	2

System properties

IoT capability: PROFICLOUD

IoT platform	PROFICLOUD
Supports cloud computing	yes
Protocol / IP-Port	MQTT / 8883
	HTTPS / 443
Smart Services	ImpulseAnalytics

Electrical properties

Current consumption	≤ 2 W

Evaluation unit

Operating voltage	24 V DC (-15 % ... +20 % including all tolerances and ripple)
Operating current	≤ 70 mA
Detectable values (current strength)	100.00 A ... 40.00 kA
Maximum measuring period	1 s
Sampling rate	500 kHz

Evaluation unit Ethernet ports

Interface	Ethernet
Number	1
Connection method	RJ45
Note on the connection method	pluggable
Transmission speed	10/100 Mbps

Evaluation unit Function

Basic functions	Acquisition of sensor data
Operation	via Proficloud application and web interface

Connection data

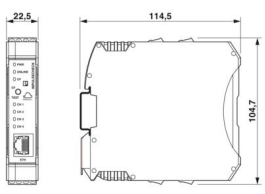
24 V supply

Connection method	Screw terminal block
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 2.5 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm² ... 2.5 mm²
Conductor cross section flexible	0.14 mm² ... 2.5 mm²
Conductor cross section rigid	0.14 mm² ... 2.5 mm²
Conductor cross section AWG	26 ... 14
Note	The DIN rail connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail in accordance with EN 60715.

Sensors

Connection method	Screw terminal block
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm² ... 2.5 mm²
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm² ... 2.5 mm²
Conductor cross section flexible	0.14 mm² ... 2.5 mm²
Conductor cross section rigid	0.14 mm² ... 2.5 mm²
Conductor cross section AWG	26 ... 14

Dimensions

Dimensional drawing	
Width	22.5 mm
Height	104.7 mm

Depth	114.5 mm
Horizontal pitch	1.3 Div.

Material specifications

Color	gray (RAL 7042)
Housing material	PA

Mechanical properties

Mechanical data

Open side panel	No

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 60 °C (I_{max} = 4 A)
	-35 °C ... 85 °C (I_{max} = 2 A)
Ambient temperature (storage/transport)	-35 °C ... 85 °C
Altitude	≤ 2000 m (amsl)
Permissible humidity (operation)	30 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	30 % ... 95 % (non-condensing)
Shock (operation)	30g (11 ms period, half-sine shock pulse, according to IEC 60068-2-27)
Vibration (operation)	5g (Bump endurance test in accordance with EN 60068-2-6)

Approvals

UL approval

Identification	UL 61010-1:2012, 3rd Ed., Revised Nov. 21 2018
	CSA C22.2 No. 61010-1-12, 3rd Ed., Revised Nov. 21 2018
	IEC 61010-2-030:2017

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conformance with EMC directives	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electrostatic discharge (ESD)EN 61000-4-2/IEC 61000-4-2 Criterion B, ±6 kV contact discharge, ±8 kV air discharge
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electromagnetic fieldsEN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Fast transients (burst)EN 61000-4-4/IEC 61000-4-4 Criterion A, 2.2 kV
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Transient overvoltage (surge)EN 61000-4-5/IEC 61000-4-5 Criterion B; DC supply lines: ±0.5 kV/±1 kV (symmetrical/asymmetrical), fieldbus cable shielding: ±1 kV

	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Conducted interferenceEN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Noise emission EN 61000-6-3/IEC 61000-6-3 Class B

Standards and regulations

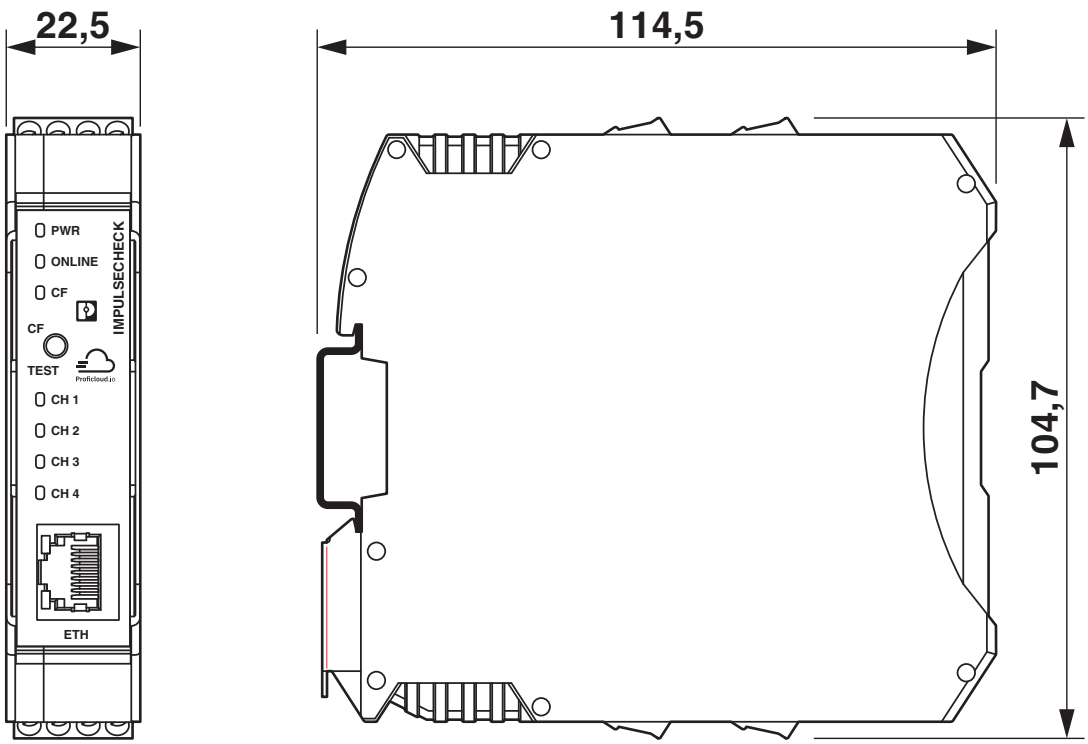
Standards/specifications	EN 61000-6-2
Standards/specifications	EN 61000-6-3

Mounting

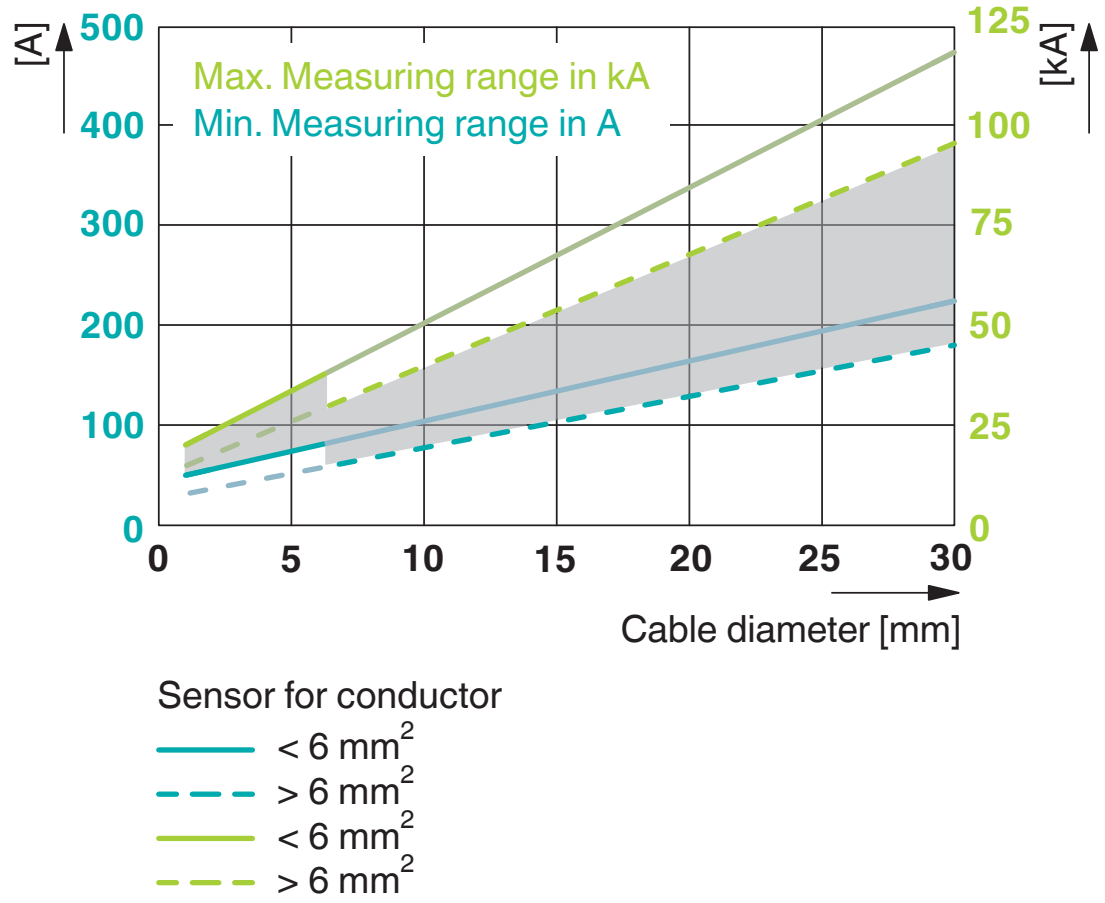
Mounting type	DIN rail: 35 mm

Drawings

Dimensional drawing

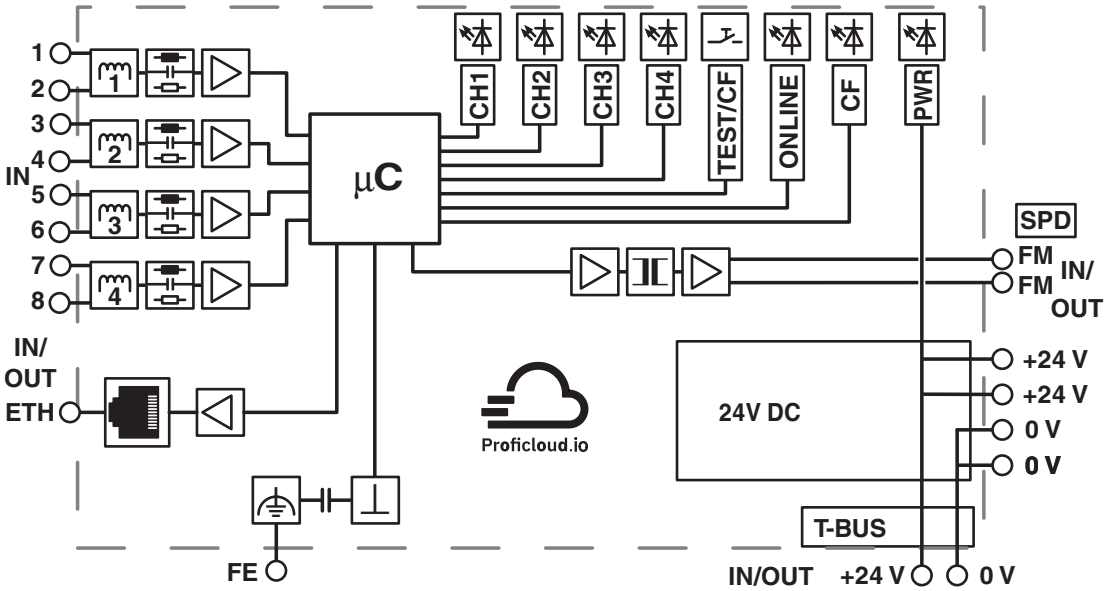


Diagram

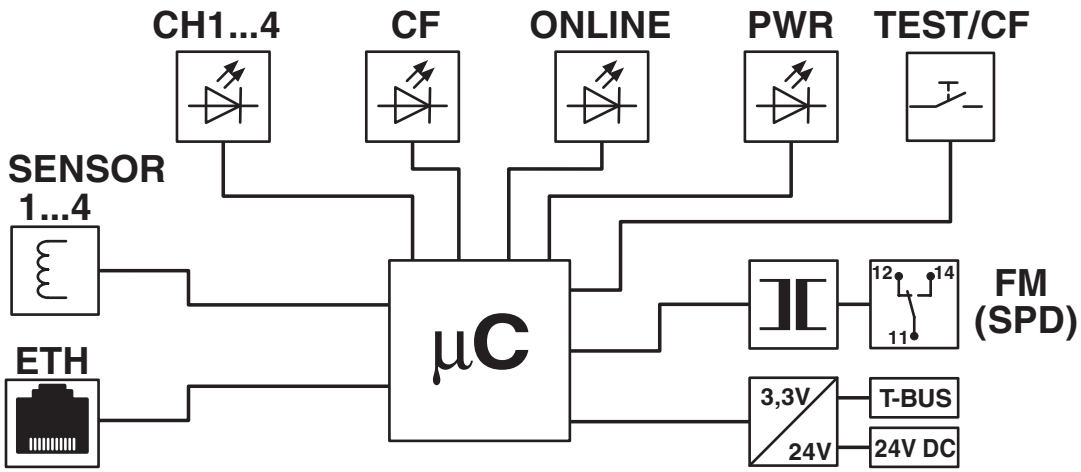


The figure shows the measuring range of pulse currents (not mains frequency operating currents!) of the sensor depending on the sensor side used and the diameter of the cable to be measured

Circuit diagram



Block diagram



Approvals

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UL Listed
Approval ID: FILE E 357804

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Classifications

ECLASS

ECLASS-13.0	27170103

ETIM

ETIM 9.0	EC002495

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	693a2d79-0923-4bb2-b307-12ac0dc67f85

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