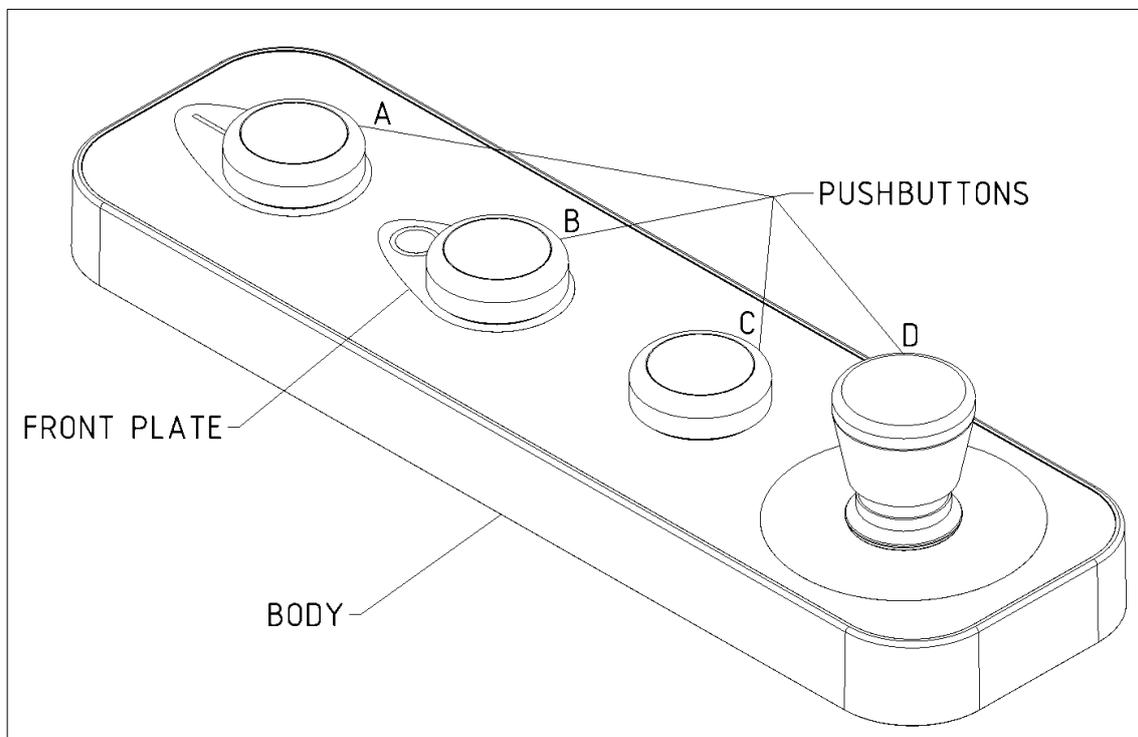# EMKEY 4001 – EMKEY 4002

Pushbuttons board

Installation, use and maintenance manual

Description

The EMKEY 4001 and EMKEY 4002 are pushbuttons boards designed as accessory of the industrial panel PC Posyc 4000 but they can be employed alone also.

They may be equipped with miscellaneous actuators (momentary or latching, illuminable or not, various colours and shapes) and a mix of N.O., N.C. contacts, fixed or free potential contacts, according to the requests of the application. Some predefined configurations are standard.

- 4 position for arranging pushbuttons and/or indicator lights
- Configurable mix of actuator, indicator lights and contacts
- Customizable front plate design
- Designed on the Posyc 4000 style
- Mountable in dedicated aluminium shell or on panel
- Front degree of protection IP65 and UL Type 1

Ordering informations

Products	SMITEC part number
Pushbuttons board EMKEY 4001 (UL panel mount), var. 0 (graphic I, 0 and yellow circle on front plate and with white + black + illuminable blue momentary actuators + red emergency mushroom latching actuator)	KZ010334
Pushbuttons board EMKEY 4001 (UL panel mount), var. 3 (graphic I, 0 and yellow circle on front plate and with green + red + illuminable blue momentary actuators + red emergency mushroom latching actuator)	KZ010477
Pushbuttons board EMKEY 4001 (UL panel mount), var. 0 (graphic I, 0 and yellow circle on front plate and with white + black + illuminable blue momentary actuators + illuminable red emergency mushroom latching actuator)	KZ010521
Pushbuttons board EMKEY 4001 (UL panel mount), var. 1 (graphic I, 0 and yellow circle on front plate and with illuminable white + red + illuminable yellow momentary actuators + red emergency mushroom latching actuator)	KZ010544
Pushbuttons board EMKEY 4001 (UL panel mount), var. 2 (graphic I, 0 and yellow circle on front plate and with white + black + illuminable blue momentary actuators + red emergency mushroom latching actuator)	KZ010545
Pushbuttons board EMKEY 4002 (UL enclosed type), var. 2 (graphic I, 0 and yellow circle on front plate and with white + black + illuminable blue momentary actuators + red emergency mushroom latching actuator)	KZ010570
Other configurations	Contact us

Accessories	SMITEC part number
Field wiring connector (Phoenix Contact p/n 1738908) *	KF101053
Body rear gasket (0,613m) *	MF101475
Aluminium shells for POSYC 4000 + EMKEY 4000	KG020082

*= Supplied with EMKEY 4000

Documentation	SMITEC part number
User manual for EMKEY 4000	DK400220

Technical data

General data

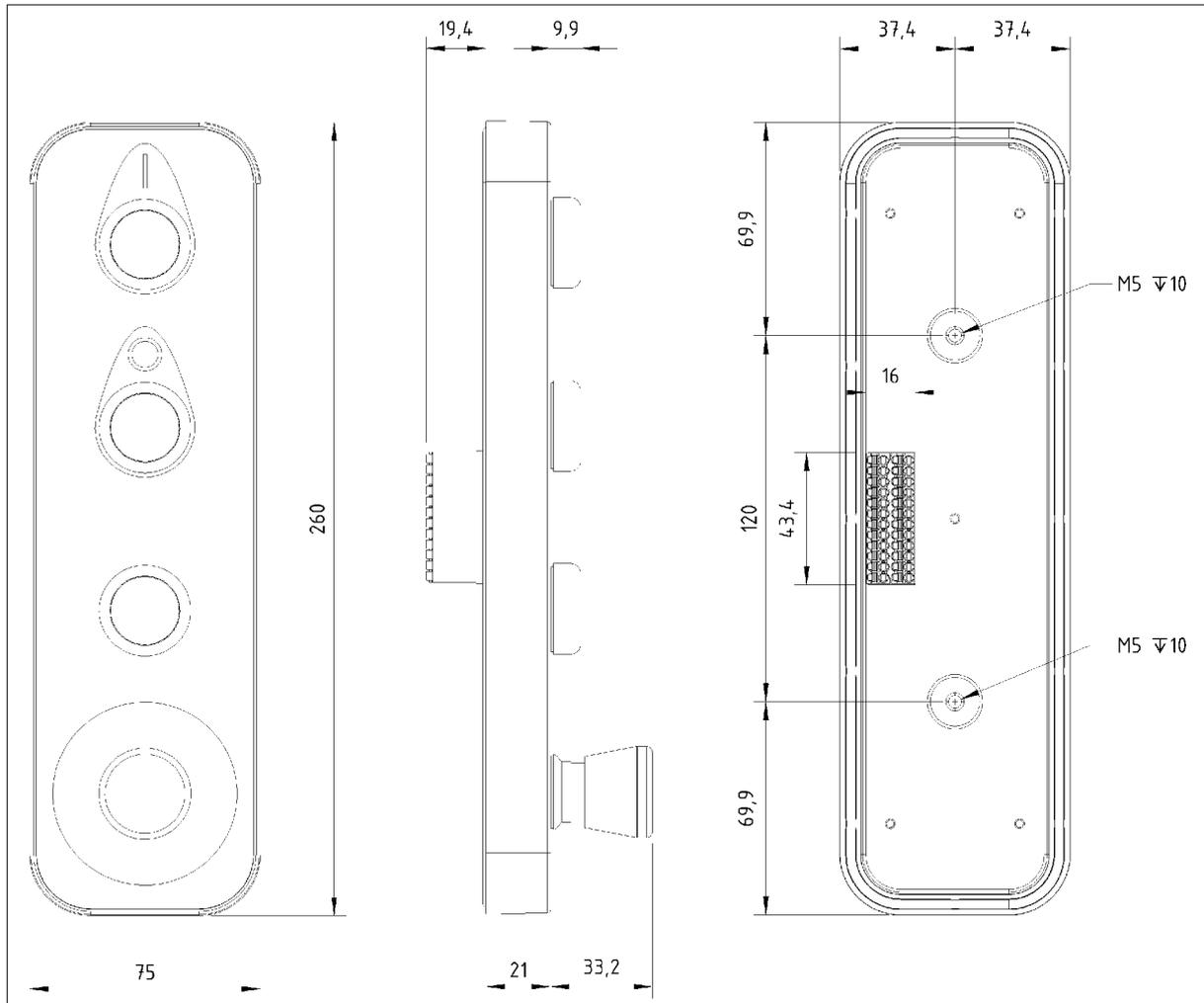|	
Overall dimensions with mushroom emergency actuator (width x height x depth) EMKEY 4001	75 mm x 260 mm x 74mm
Overall dimensions with mushroom emergency actuator (width x height x depth) EMKEY 4002	93 mm x 260 mm x 100mm
Weight EMKEY 4001	445 g
Weight EMKEY 4002	1,1 kg

Environment data

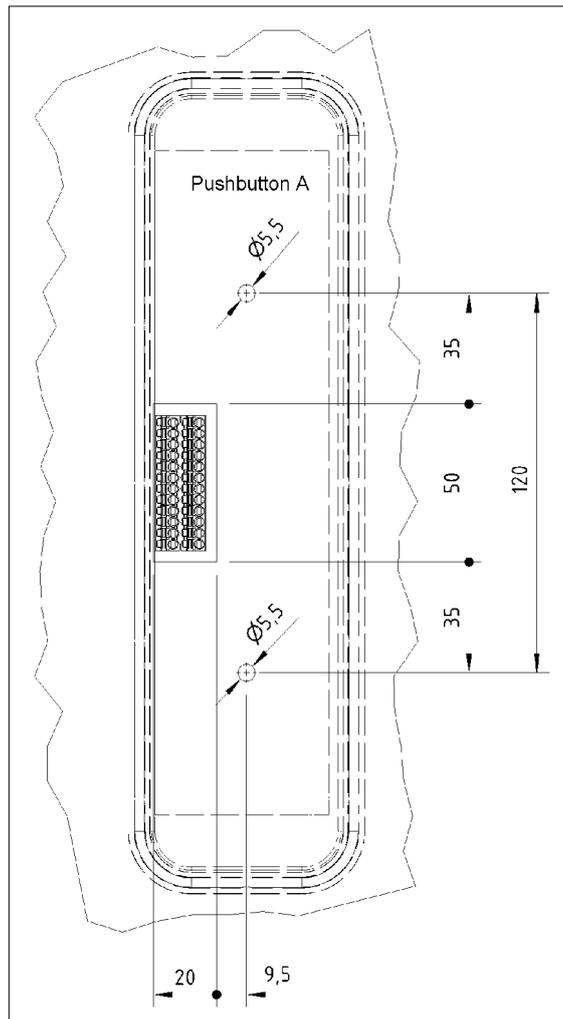|	
Permissible operating temperature	+0°C to +50°C
Permissible storage and transport temperature	-20°C to +60°C
Permissible humidity	0 ÷ 90% (without condensation)
Permissible air pressure (operation)	80 to 106 kPa (up to 2000 m above sea level)
Permissible air pressure (storage and transport)	70 to 106 kPa (up to 3000 m above sea level)
Front degree of protection EMKEY 4001	IP65 according to IEC 60529 and UL Type 1
Rear degree of protection EMKEY 4001	IP20 according to IEC 60529
Overall degree of protection EMKEY 4002	IP65 according to IEC 60529 and UL Type 1
Overvoltage category	II
Pollution degree	2
Means of protection (UL)	Class III NEC Class 2 power supply

Electrical data

Switches working voltage	24 V DC ± 10%
Switches maximum allowable current	DC13 Q300, 2.5 A (for each contact), 8A max total
Indicator lights (LEDs) working voltage	24 V DC ± 10%
Indicator lights (LEDs) current consumption	15 mA (for each light)

Life data

Red mushroom emergency latching actuator life	50000 cycles
Other momentary actuator life	1 million cycles
Other latching actuator life	500000 cycles
Contacts operating life	10 millions cycles (24 V DC, 5 mA) > 10000 cycles (24 V DC, 2 A)

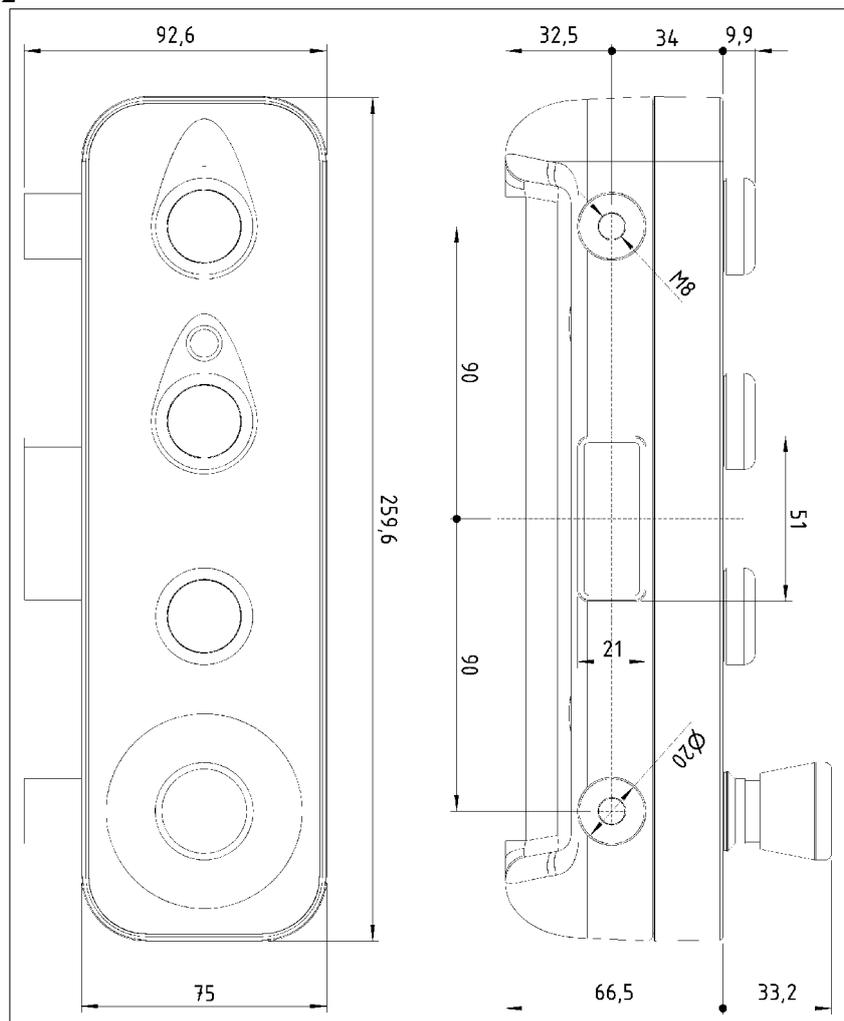# Mechanical drawing

EMKEY 4001

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Recommended panel cut out for EMKEY 4001 (rear view)

EMKEY 4002

Mounting

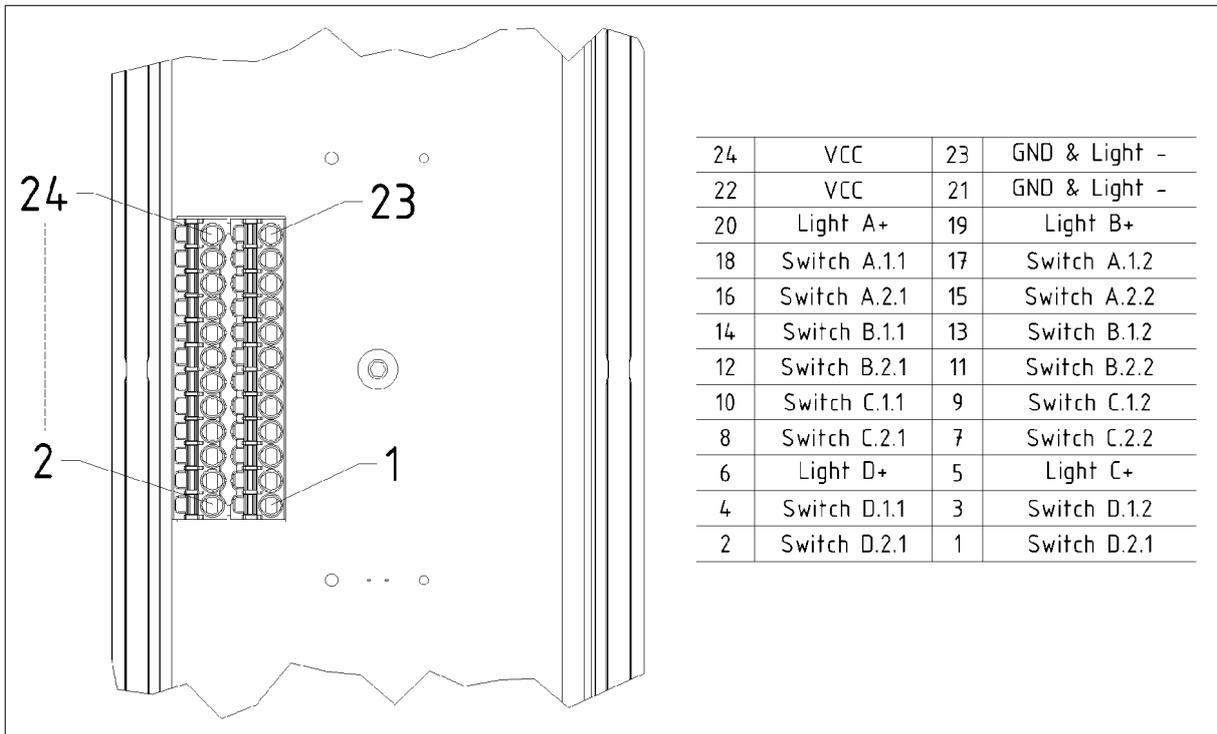The EMKEY 4001 needs to be fixed on a stable and rigid panel. Use 2xM5x12mm stainless steel screws, tightened at 3Nm.

The EMKEY 4002 needs to be fixed to POSYC 4000 shell by the 2xM8x35mm stainless steel screws included in the package, tightened at 3Nm.
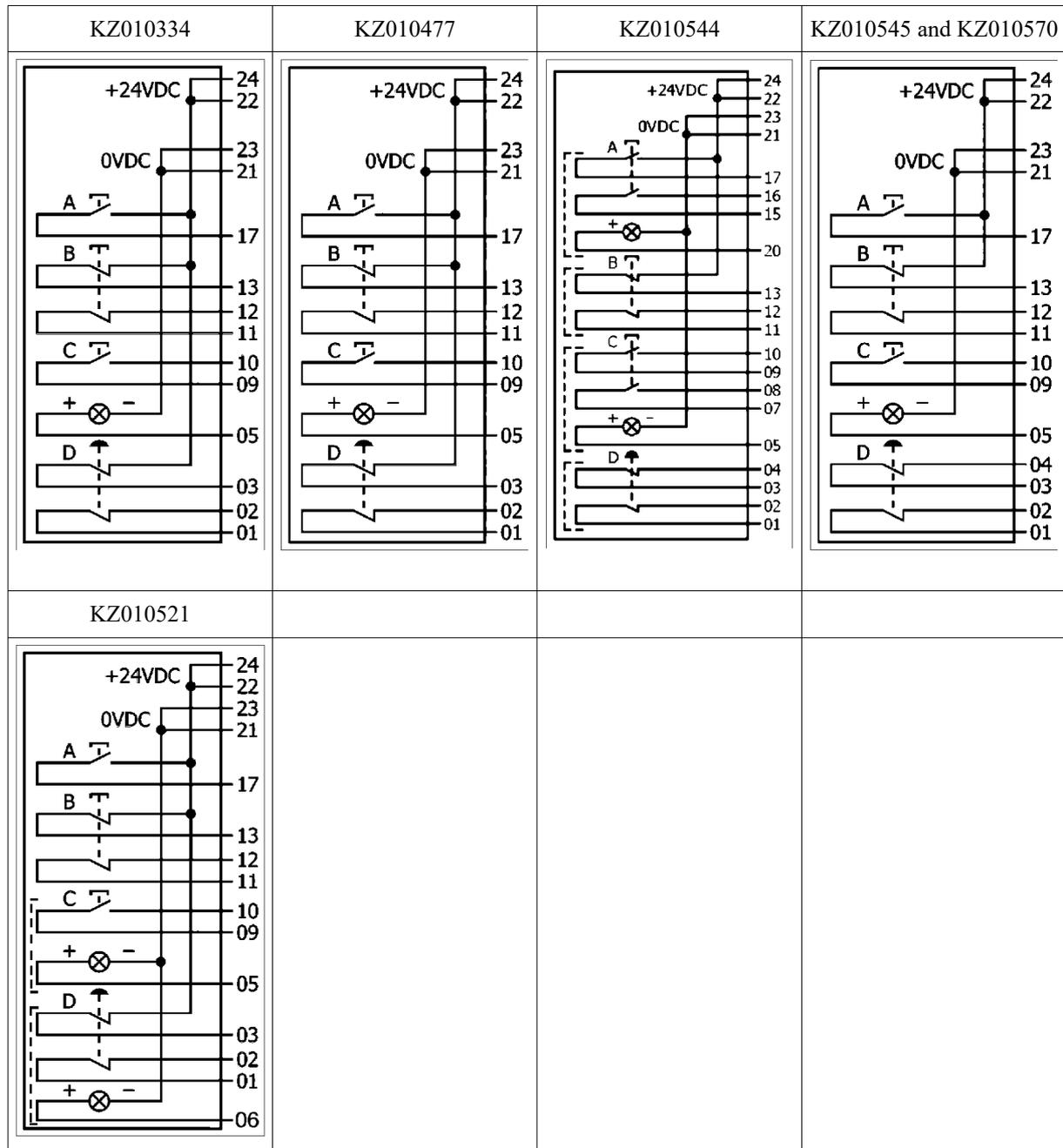
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Connections

The module has only one connector that allow easy "plug and play" of the device, and also a fast replacement of a faulty unit.

Signal connector

The signal connector is located on the rear of the device. For the general pinout, refer to the illustration below.

24	VCC	23	GND & Light -
22	VCC	21	GND & Light -
20	Light A+	19	Light B+
18	Switch A.1.1	17	Switch A.1.2
16	Switch A.2.1	15	Switch A.2.2
14	Switch B.1.1	13	Switch B.1.2
12	Switch B.2.1	11	Switch B.2.2
10	Switch C.1.1	9	Switch C.1.2
8	Switch C.2.1	7	Switch C.2.2
6	Light D+	5	Light C+
4	Switch D.1.1	3	Switch D.1.2
2	Switch D.2.1	1	Switch D.2.1

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As before stated, there are some standard configurations of indicator lights, contacts and fixed/free potential arrangement. The principle schemes are the following.

KZ010334	KZ010477	KZ010544	KZ010545 and KZ010570
KZ010521			

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For connector ratings and the applicable wiring refer to the following table.

Connector type: Phoenix Contact FMCD 1,5/12-ST-3,5 (1738908) Order code: KF101053			
Technical data		**Conductor cross section**	
Nominal voltage (CE)	160V	Solid (CE)	0,2÷1,5mm²
Nominal voltage (UL)	150V	Solid (UL)	24÷16AWG - 75°C
Nominal current (CE)	8A	Flexible (CE)	0,2÷1,5mm²
Nominal current (UL)	8A	Flexible (UL)	24÷16AWG - 75°C
Stripping length	10mm	Flexible, with ferrule without plastic sleeve	0,25÷1,5mm²
Screwdriver to open contacts	0,4 x 2,5mm	Flexible, with ferrule with plastic sleeve	0,25÷0,75mm²

Recommendations

- Do not position the equipment so that it is difficult to operate the disconnecting device
- Do not use this equipment in a manner not specified in this documentation otherwise the protection means provided in the device may be impaired

Maintenance

This device does not require special maintenance except the front cleaning when necessary.

Cleaning

When necessary it is possible to clean the front of the device by a soft cleaning cloth (microfibre recommended) damped with water or neutral detergent.

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