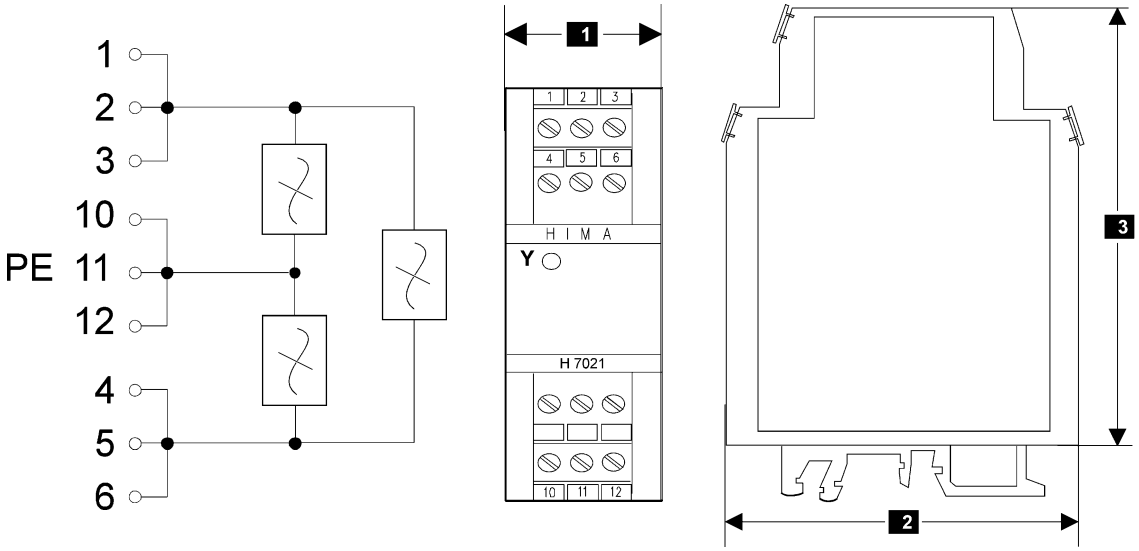
H 7021: Mains Filter

- For 48 V supply interference suppression in the HIMatrix and HIMax system families.
- Surge and burst protection.



1 Width: 25 mm
2 Height: 80 mm
3 Depth: 95 mm

Figure 1: H 7021 Mains Filter: Wiring Diagram, Top View and Side View

The H 7021 mains filter is use to dampen wideband, low-energy switching voltage interference (burst) in accordance with IEC EN 61000-4-4 up to 4 kV as well as overvoltages (surge) in accordance with EN 61000-4-5 up to 4 kV (common mode) and 1 kV (differential mode) on a 48 VDC power supply. Each common mode interference (burst and surge) is discharged to ground.

HIMA recommends installing the filter close to the 48 V supply to suppress disturbances directly at the supply point.

Connection	2.5 mm² directly to the device terminals, combined wires on terminals with a 10 mm² cross-section or greater
Installation height above mounting rail	Approx. 100 mm
Withstand voltage against system ground	250 V
Max. permissible operating voltage	48 VAC / 60 VDC
Current consumption	3.0 mA at 48 VDC
Ambient temperature	-25…+70 °C
Power dissipation	Max. 250 mW

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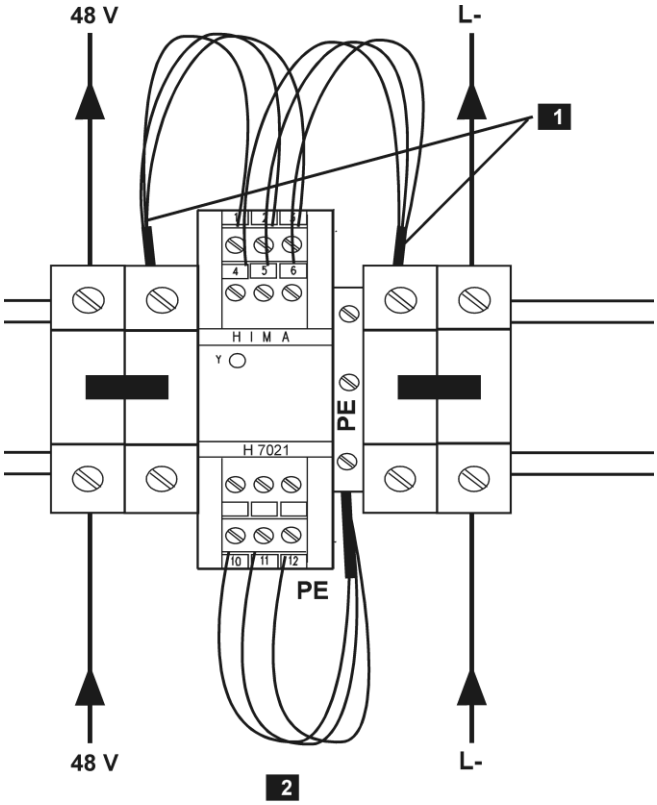
Connection Example



1 Wires grouped in wire end ferrules

2 48 VDC supply

Figure 2: Connection Example with Terminals on 35 mm DIN Rail

The connector cables are included within the scope of delivery.

Use of H 7021 in Zone 2

The H 7021 power supply filter is suitable for mounting in the explosive atmospheres of zone 2. To this end, the special conditions must be observed.

The power supply filter meets the requirements of the following directives and standards:

Compliance	Standard	Description
IECEx	IEC 60079-0:2011	Explosive atmospheres - Part 0: Equipment - General requirements
ATEX 94/9/EG	EN 60079-0:2012 + A11:2013	
IECEx	IEC 60079-15:2010	Explosive atmospheres - Part 15: Equipment protection by degree of protection "n"
ATEX 94/9/EG	EN 60079-15:2010	

Table 1: Standard for HIMA Components in Zone 2

The power supply filter must be labeled with the following Ex marking:

 II 3G Ex nA IIC T4 Gc

Marking	Description
	Explosion protection marking complying with the relevant directive.
II	Equipment group, for all areas with explosive atmosphere, other than underground mines.
3G	Equipment category, for use in areas in which explosive gas atmosphere is unlikely to occur or, if it does occur, will persist for a short period only.
Ex	Explosion protection marking in accordance with IECEx standard.
nA	Type of protection for non-sparking equipment.
IIC	Gas group for explosive gas atmospheres, typical gas is hydrogen.
T4	Temperature class T4, with a maximum surface temperature of 135 °C.
Gc	Equipment protection level, it corresponds to ATEX equipment category 3G.

Table 2: Ex Marking Description

Special Conditions for H 7021

1. To ensure compliance with category 3G, the specified power supply filter, H 7021, must be installed in an enclosure that fulfils the requirements of the EN/IEC 60079-15 with degree of protection IP54 or better.
2. The device must be provided with a warning:

   Warning: Work is only permitted in the de-energized state

   Exception:

   If a potentially explosive atmosphere has been precluded, work can be also performed when the device is under voltage.
3. The device is designed for operation not exceeding pollution degree 2.
4. The enclosure in use must be able to safely dissipate the generated heat.

Applicable standards:

IEC 60079-14:2013 / EN 60079-14:2014

Explosive atmospheres - Part 14: Electrical installations design, selection and erection

The requirements for type of protection "n" must be observed.