

Surge protection plug - PT 5-HF-12 DC-ST - 2838775

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Protective plug PT with HF protective circuit for 4 signal wires. Nominal voltage: 12 V DC

Product Features

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Maximum ease of maintenance thanks to the two-piece design
- ✓ Base element remains an integral part of the installation
- ✓ Protection for fieldbus systems, PROFIBUS, and signal circuits with 3 to 5-wire technology
- ✓ Consistent plug-in signal circuit protection
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



Key commercial data

package_quantity	10
GTIN	4017918480646

Technical data

Dimensions

Height	45 mm
Width	17.7 mm
Depth	52 mm
Horizontal pitch	1 Div.
Complete module height	90 mm
Complete module width	17.7 mm
Complete module depth	65.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
Degree of protection	IP20

General

Housing material	PA
Inflammability class according to UL 94	V0
Color	black

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Technical data

General

Standards for air and creepage distances	DIN EN 61664-1
Standards for air and creepage distances	IEC 60664-1
Surge voltage category	III
Pollution degree	2
Mounting type	On base element
Type	DIN rail module, two-section, divisible
Number of positions	5
Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/ Shield-Earth Ground
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.10

Protective circuit

IEC test classification	C1
IEC test classification	C2
IEC test classification	C3
IEC test classification	D1
VDE requirement class	C1
VDE requirement class	C2
VDE requirement class	C3
VDE requirement class	D1
Nominal voltage U_N	12 V DC
Maximum continuous operating voltage U_c	14 V DC
Maximum continuous operating voltage U_c	9.8 V AC
Maximum continuous voltage U_C (wire-wire)	14 V DC
Maximum continuous voltage U_C (wire-wire)	9.8 V AC
Maximum continuous voltage U_c (wire-ground)	14 V DC (with PT 2x2-BE)
Nominal current I_N	450 mA (45°C)
Operating effective current I_c at U_c	$\leq 5 \mu A$
Residual current I_{PE}	$\leq 5 \mu A$ (with PT 2x2-BE)
Residual current I_{PE}	$\leq 1 \mu A$ (with PT 2x2+F-BE)
Nominal discharge current I_n (8/20) μs (Core-Core)	10 kA
Nominal discharge current I_n (8/20) μs (Core-Earth)	10 kA
Nominal discharge current I_n (8/20) μs (Core-GND)	10 kA
Total surge current (8/20) μs	20 kA
Max. discharge current I_{max} (8/20) μs maximum (Core-Core)	10 kA
Max. discharge current I_{max} (8/20) μs maximum (Core-Earth)	10 kA
Nominal pulse current I_{an} (10/1000) μs (Core-Core)	67 A
Impulse discharge current (10/350) μs , peak value I_{imp}	2.5 kA
Output voltage limitation at 1 kV/ μs (Core-Core) spike	$\leq 55 V$
Output voltage limitation at 1 kV/ μs (Core-Earth) spike	$\leq 55 V$ (PT 2x2-BE)
Output voltage limitation at 1 kV/ μs (Core-Earth) spike	$\leq 700 V$ (with PT 2x2+F-BE)

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Protective circuit

Output voltage limitation at 1 kV/μs (Core-Core) static	≤ 25 V
Output voltage limitation at 1 kV/μs (Core-Earth) static	≤ 25 V
Output voltage limitation at 1 kV/μs (Core-Earth) static	≤ 40 V (PT 2x2+F-BE)
Residual voltage at I _n , (conductor-conductor)	≤ 25 V
Residual voltage at I _n , (conductor-ground)	≤ 40 V (with PT 2x2-BE)
Residual voltage at I _n , (conductor-GND)	≤ 25 V (with PT 2x2-BE)
Residual voltage with I _{an} (10/1000)μs (conductor-conductor)	≤ 25 V
Residual voltage with I _{an} (10/1000)μs (conductor-GND)	≤ 25 V
Voltage protection level U _p (Core-Core)	≤ 80 V (C1 - 1 kV/500 A)
Voltage protection level U _p (Core-Core)	≤ 50 V (C3 - 25 A)
Voltage protection level U _p (Core-Core)	≤ 100 V (C2 (10 kV/5 kA))
Voltage protection level U _p (Core-Core)	≤ 80 V (6 kV/3 kA)
Voltage protection level U _p (Core-Earth)	≤ 85 V (C1 - 1 kV/500 A)
Voltage protection level U _p (Core-Earth)	≤ 140 V (C2 (10 kV/5 kA))
Voltage protection level U _p (Core-Earth)	≤ 100 V (6 kV/3 kA)
Voltage protection level U _p (Core-Earth)	≤ 50 V (C3 - 25 A)
Voltage protection level U _p (Core-GND)	≤ 50 V (C3 - 25 A)
Response time t _A (Core-Core)	≤ 500 ns
Response time t _A (Core-Earth)	≤ 500 ns
Input attenuation a _E , sym.	typ. 0.3 dB (≤ 5 MHz / 100 Ω)
Cut-off frequency f _g (3 dB), sym. in 100 Ohm system	typ. 60 MHz
Capacity (Core-Core)	typ. 30 pF
Resistance in series	2.2 Ω ±10 % (1-2/5-6/7-8/11-12)
Surge protection fault message	None
Max. required back-up fuse	500 mA (e.g. T in acc. with IEC 127-2/III)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C3 (67 A)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C3 (67 A)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	D1 (2.5 kA)

Connection data

Connection method	Screw connection (in connection with the base element)
Connection type IN	PLUGTRAB plug-in system
Connection type OUT	PLUGTRAB plug-in system
Screw thread	M3
Tightening torque	0.8 Nm
Stripping length	8 mm
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²
Conductor cross section solid min.	0.2 mm ²

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Technical data

Connection data

Conductor cross section solid max.	4 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

Connection, equipotential bonding

Stripping length	8 mm
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	4 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

classifications

eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130807
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807

ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943

UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

approvals

UL Listed / cUL Listed / cULus Listed / UL Listed / GOST / GL /

Approval details

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approvals

UL Listed

cUL Listed

cULus Listed

Nominal voltage UN	12 V
Nominal current IN	0.45 A
mm ² /AWG/kcmil	

GOST

GL

accessories

Marker pen

X-PEN 0,35 - 0811228



Terminal marking

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accessories

ZBF 5:UNBEDRUCKT - 0808642



ZBF 5/WH-100:UNBEDRUCKT - 0808668



Labeled terminal marker

ZBF 5,LGS:FORTL.ZAHLEN - 0808671



ZBF 5,LGS:GERADE ZAHLEN - 0810821



ZBF 5,LGS:UNGERADE ZAHLEN - 0810863



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accessories

ZBF 5,QR:FORTL.ZAHLEN - 0808697



Device marking

ZBN 18:UNBEDRUCKT - 2809128



accessories

ZBF 15:SO/CMS - 0814717



ZBF 5:SO/CMS - 0808707



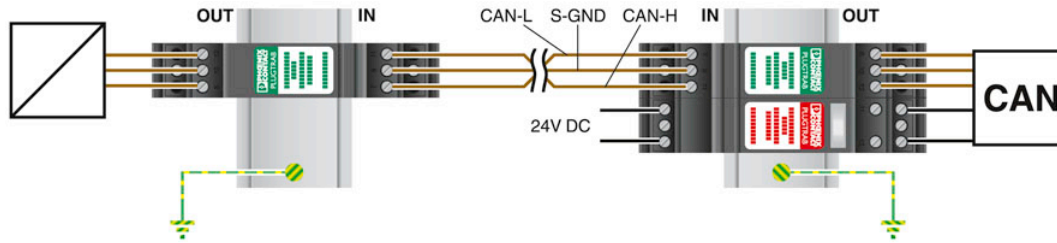
ZBN 18:SO/CMS - 0800763



Drawings

Surge protection plug - PT 5-HF-12 DC-ST - 2838775

Application drawing

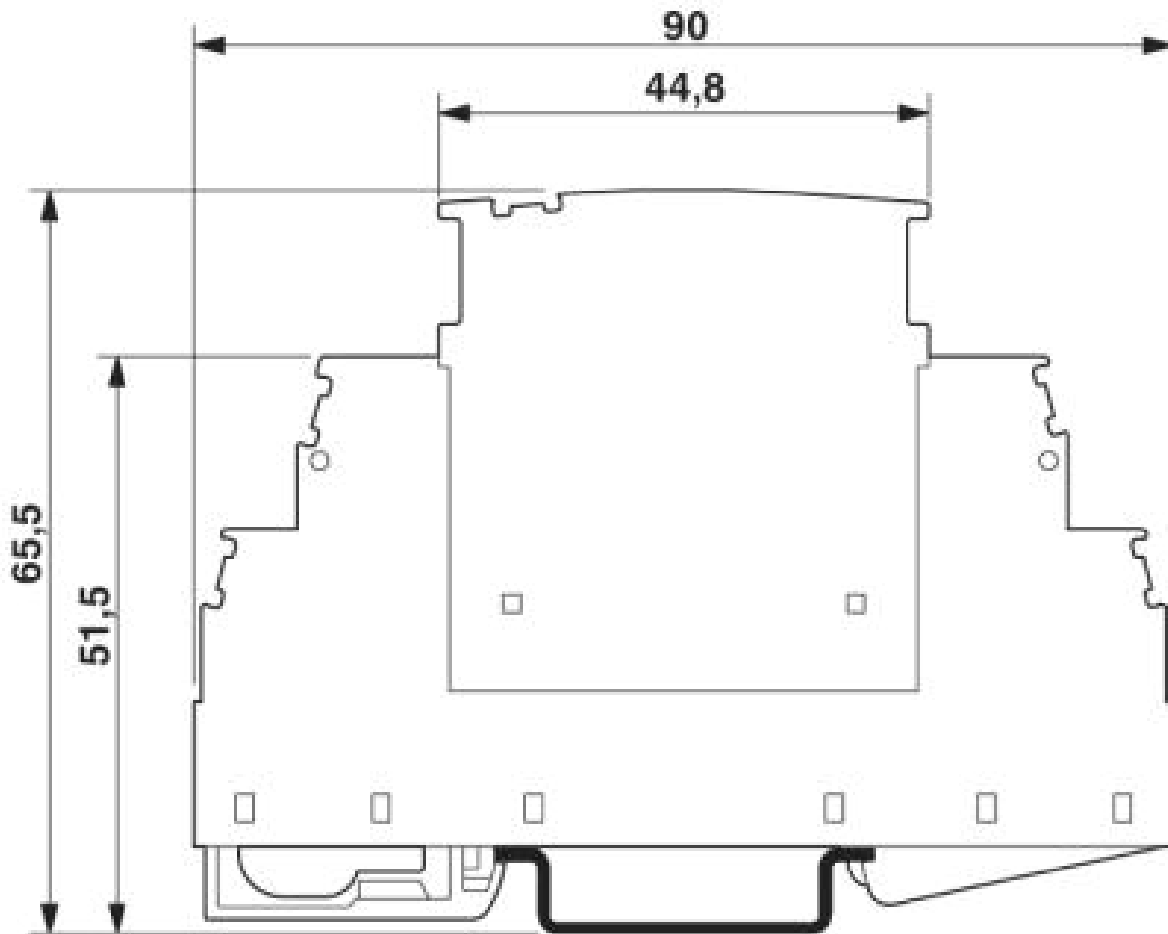


Diagram



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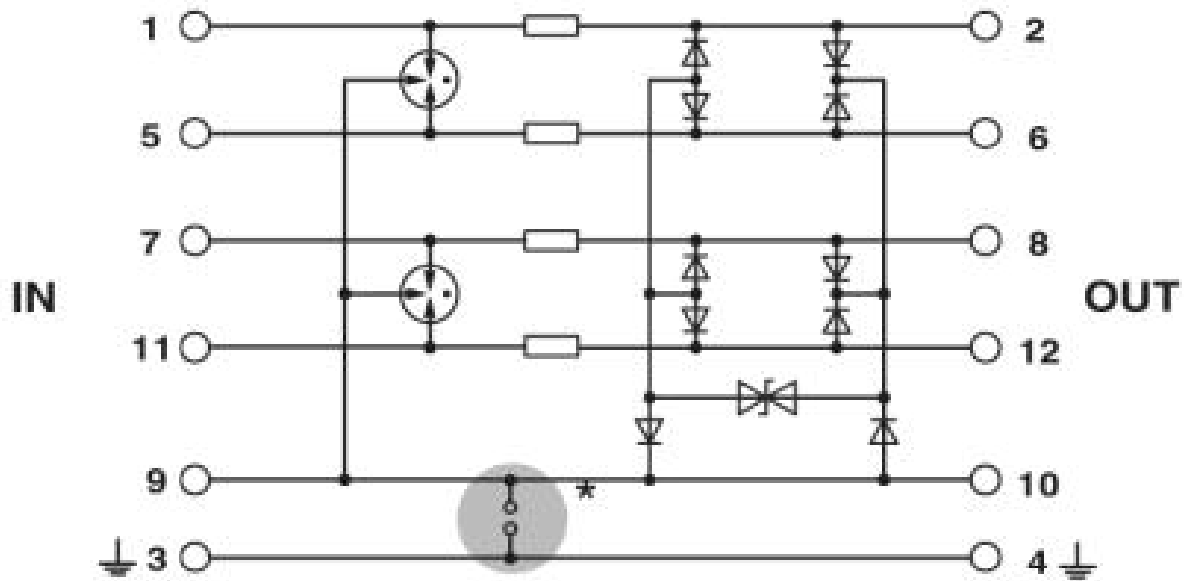
Dimensioned drawing



The figure shows the complete module consisting of a base element and connector

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Circuit diagram



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