

# Surge protection plug - PT PE/S+1X2-24-ST - 2819008

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Protective plug PT with surge voltage equipment protection for power supply units, visual fault warning, nominal voltage: 24 V and a 2-core floating signal circuit, nominal voltage: 24 V.

## 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
- Consistent plug-in signal circuit protection
- Impedance-neutral disconnection of plug for test and maintenance purposes



## Key commercial data

package_quantity	10
GTIN	4017918819323

## 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 6.6
Inflammability class according to UL 94	V0
Standards for air and creepage distances	VDE 0110-1
Standards for air and creepage distances	IEC 60664-1

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## Technical data

### General

Standards for air and creepage distances	IEC 61643-1
Total surge current (8/20) $\mu$ s	20 kA
Color	black
Mounting type	On base element
Type	DIN rail module, two-section, divisible
Current supply arrester can be tested with CHECKMASTER starting with software version:	From SW rev. 1.00
Direction of action	L-N-PE & Signal Line-Signal Line-Earth Ground

### Protective circuit, power supply

IEC test classification	III
EN type	T3
Nominal voltage $U_N$	24 V
Arrester rated voltage $U_C$ (L-N)	44 V DC
Arrester rated voltage $U_C$ (L-N)	34 V DC
Arrester rated voltage $U_C$ (L-PE)	34 V AC
Arrester rated voltage $U_C$ (L-PE)	44 V DC
Nominal frequency $f_N$	50 Hz (60 Hz)
Nominal current $I_N$	6 A (30 °C)
Operating effective current $I_C$ at $U_C$	$\leq 1.5$ mA
Residual current $I_{PE}$	$\leq 1$ $\mu$ A
Nominal discharge current $I_n$ (8/20) $\mu$ s	700 A
Nominal discharge current $I_n$ (8/20) $\mu$ s (L-N)	700 A
Nominal discharge current $I_n$ (8/20) $\mu$ s (L-PE)	700 A
Max. discharge current $I_{max}$ (8/20) $\mu$ s	2 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (L-N)	2 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (L-PE)	2 kA
100% lightning impulse sparkover voltage (1.2/50) $\mu$ s (L-PE)	230 V
100% lightning impulse sparkover voltage (1.2/50) $\mu$ s (L-PEN)	230 V
Combined surge $U_{OC}$	2 kV
Energy absorption symmetrical	28 J
Energy absorption, asymmetrical	14 J
Voltage protection level $U_p$ (L-N)	$\leq 180$ V
Voltage protection level $U_p$ (L-PE)	$\leq 550$ V
Total surge current (8/20) $\mu$ s	20 kA
Response time (L-N)	$\leq 25$ ns
Response time (L-PE)	$\leq 100$ ns
Surge protection fault message	Optical
Max. required back-up fuse	6 A (gL/gG)
Residual voltage at $I_n$ , (L-N)	$\leq 170$ V
Residual voltage at $I_n$ , (L-PE)	$\leq 100$ V

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## Technical data

Connection (protective circuit, power supply)

Connection type IN	PLUGTRAB plug-in system
Connection type OUT	PLUGTRAB plug-in system

Standards (protective circuit, power supply)

Standards/regulations	IEC 61643-1
Standards/regulations	EN 61643-11

Protective circuit, information technology

Nominal voltage $U_N$	24 V AC
Max. operating voltage $U_{max}$	28 V AC
Max. operating voltage $U_{max}$	40 V DC
Arrester rated voltage $U_C$	40 V DC
Arrester rated voltage $U_C$	28 V AC
Arrester rated voltage $U_C$ (Core-Earth)	40 V DC
Arrester rated voltage $U_C$ (Core-Earth)	28 V AC
Nominal current $I_N$	450 mA (45°C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Residual current $I_{PE}$	$\leq 2 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Core)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Earth)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (Core-Core)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (Core-Earth)	10 kA
Voltage protection level $U_P$ (Core-Core)	$\leq 80 V$ (C2 (10 kV/5 kA))
Voltage protection level $U_P$ (Core-Earth)	$\leq 450 V$ (C2 (10 kV/5 kA))
Response time $t_A$ (Core-Core)	$\leq 1 ns$
Response time $t_A$ (Core-Earth)	$\leq 100 ns$
Input attenuation $a_E$ , sym.	0.5 dB ( $\leq 1.5 MHz$ )
Input attenuation $a_E$ , sym.	0.2 dB ( $\leq 500 kHz / 150 \Omega$ )
Input attenuation $a_E$ , sym.	0.1 dB ( $\leq 100 kHz / 600 \Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system	typ. 8 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 3 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 600 Ohm system	typ. 800 kHz
Capacity (Core-Core)	1.1 nF
Resistance in series	2.2 $\Omega$
Impulse discharge current (10/350) $\mu s$ , peak value $I_{imp}$	2.5 kA
Surge protection fault message	Optical, remote indicator contact
Output voltage limitation at 1 kV/ $\mu s$ (wire-wire)	$\leq 55 V$
Output voltage limitation at 1 kV/ $\mu s$ (wire-earth)	$\leq 25 V$
Residual voltage at $I_n$ , (conductor-conductor)	$\leq 55 V$
Residual voltage with $I_{an}$ (10/1000) $\mu s$ (conductor-conductor)	$\leq 65 V$
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-Earth)	C2 (10 kV/5 kA)

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## Technical data

### Protective circuit, information technology

Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	D1 (2.5 kA)
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### Power supply, general

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

### Standards (protective circuit, information technology)

VDE requirement class	C1
VDE requirement class	C2
VDE requirement class	C3
VDE requirement class	D1
IEC test classification	C1
IEC test classification	C2
IEC test classification	C3
IEC test classification	D1
Standards/regulations	IEC 61643-21

## 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	EC000899
ETIM 5.0	EC000899

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## classifications

### UNSPSC

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

## approvals

GOST /

### Approval details



## accessories

### Marker pen

X-PEN 0,35 - 0811228



## Terminal marking

ZBF 5:UNBEDRUCKT - 0808642



ZBF 5/WH-100:UNBEDRUCKT - 0808668



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accessories

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## Labeled terminal marker

ZBF 5,LGS:FORTL.ZAHLEN - 0808671



ZBF 5,LGS:GERADE ZAHLEN - 0810821



ZBF 5,LGS:UNGERADE ZAHLEN - 0810863



ZBF 5,QR:FORTL.ZAHLEN - 0808697



## Device marking

ZBN 18:UNBEDRUCKT - 2809128



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### accessories

ZBF 15:SO/CMS - 0814717



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ZBF 5:SO/CMS - 0808707



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ZBN 18:SO/CMS - 0800763

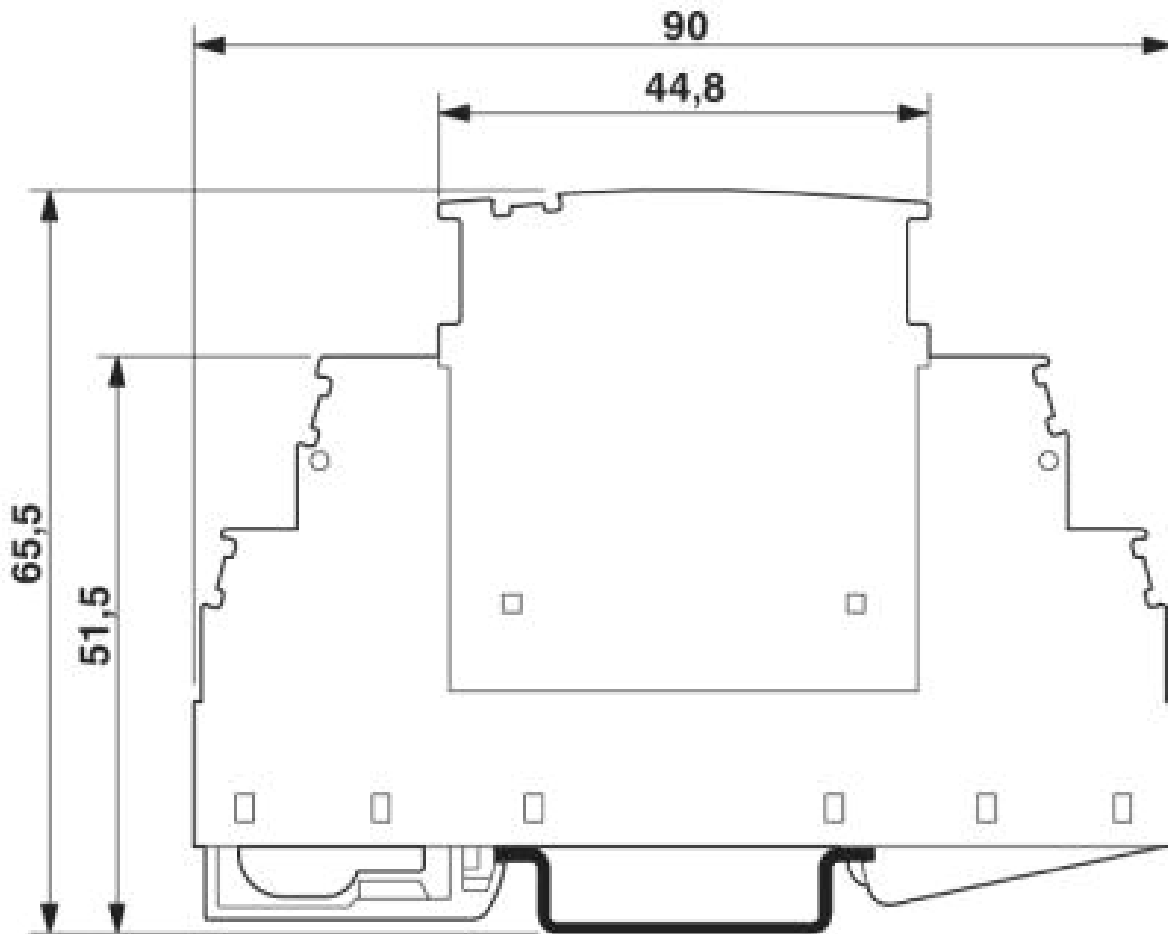


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### Drawings

## Surge protection plug - PT PE/S+1X2-24-ST - 2819008

Dimensioned drawing

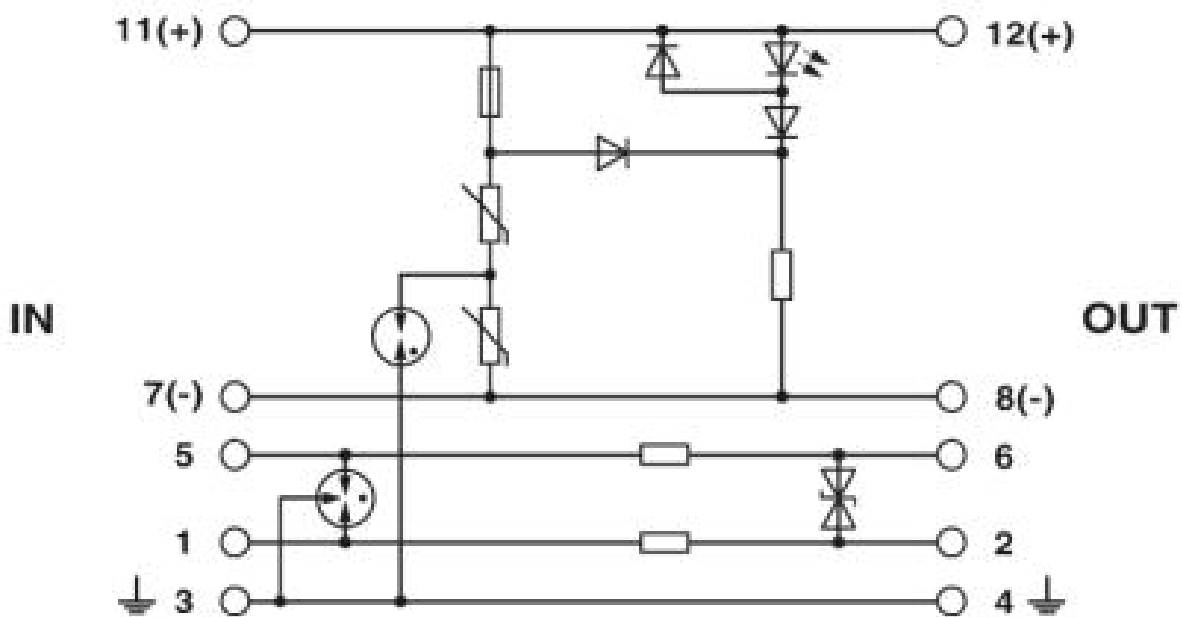


The figure shows the complete module consisting of a base element and connector



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Circuit diagram



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