

# BXT-1M/PLI-24 - Surge protection device

2838759

<https://www.phoenixcontact.com/us/products/2838759>

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Surface-mounted housing with surge protection, for RS-485 interface with 24 V signal voltage, mains connection with protective plug PRT-S

The figure shows version BXT-M/PLI-24

## Commercial data

Item number	2838759
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Product key	CL3131
GTIN	4017918194185
Weight per piece (including packing)	347.8 g
Weight per piece (excluding packing)	294.7 g
Country of origin	DE

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## Technical data

### Product properties

IEC test classification	B2
	C1
	C2
	C3
	D1
Type	Housing for surface mounting
Surge protection fault message	Optical, remote indicator contact
EN type	T3

### Electrical properties

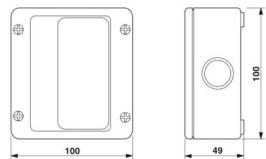
#### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	N/C contact
Maximum operating voltage $U_{max. AC}$	250 V AC
Max. operating current $I_{max}$	3 A (60 °C)

### Connection data

Connection method	Screw terminal blocks
Conductor cross-section flexible min.	0.14 mm <sup>2</sup>
Conductor cross-section flexible max.	1 mm <sup>2</sup>
Conductor cross-section, rigid min.	0.14 mm <sup>2</sup>
Conductor cross-section, rigid max.	1.5 mm <sup>2</sup>
Connection method	Screw terminal blocks
Conductor cross-section flexible min.	0.2 mm <sup>2</sup>
Conductor cross-section flexible max.	2.5 mm <sup>2</sup>
Conductor cross-section, rigid min.	0.2 mm <sup>2</sup>
Conductor cross-section, rigid max.	4 mm <sup>2</sup>

### Dimensions

Dimensional drawing	
Width	100 mm
Height	50 mm
Depth	100 mm

### Mechanical properties

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## Mechanical data

Open side panel	No
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## Protective circuit

### Power supplies

Direction of action	L-N-PE & Signal Line-Signal Line-Earth Ground
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$	260 V AC
Nominal current $I_N$	16 A ( $\leq 45^\circ\text{C}$ )
Protective conductor current $I_{PE}$	$\leq 1 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$	1.5 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (L-N)	1.5 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (L-PE)	1.5 kA
Energy absorption	80 J (L-N)
Voltage protection level $U_p$ (L-N)	$\leq 1.3 \text{ kV}$
Voltage protection level $U_p$ (L-PE)	$\leq 1.5 \text{ kV}$
Voltage protection level $U_p$ (N-PE)	$\leq 1.5 \text{ kV}$
Response time $t_A$ (L-N)	$\leq 25 \text{ ns}$
Response time $t_A$ (L-PE)	$\leq 100 \text{ ns}$
Response time $t_A$ (N-PE)	$\leq 100 \text{ ns}$
Total surge current (8/20) $\mu\text{s}$	5 kA
Max. required back-up fuse	16 A (gL)
Short-circuit current rating $I_P$ with max. backup fuse (r.m.s.)	1.5 kA

### Information technology

Maximum continuous operating voltage $U_C$	25 V DC
Maximum continuous voltage $U_C$ (line-line)	25 V DC
Nominal current $I_N$	1.5 A (25 °C)
Operating effective current $I_C$ at $U_C$	$\leq 1 \mu\text{A}$
Protective conductor current $I_{PE}$	$\leq 1 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-line)	185 A
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-ground)	5 kA
Total surge current (8/20) $\mu\text{s}$	5 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-line)	185 A
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-earth)	5 kA
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 130 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	450 V
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) static	$\leq 40 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) static	$\leq 450 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 130 \text{ V}$ (B2 - 2 kV / 50 A) $\leq 60 \text{ V}$ (C1 - 180 A) $\leq 50 \text{ V}$ (C3 - 35 A) $\leq 550 \text{ V}$ (B2 - 4 kV / 100 A)

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Voltage protection level $U_p$ (line-earth)	C2 - 4 kV / 2 kA
	$\leq 600$ V (C2 - 10 kV / 5 kA)
	$\leq 700$ V (C3 - 100 A)
Response time $t_A$ (line-line)	$\leq 500$ ns
Response time $t_A$ (line-earth)	$\leq 100$ ns
Input attenuation aE, sym.	typ. 0.1 dB ( $\leq 10$ MHz/50 $\Omega$ )
	typ. 0.1 dB ( $\leq 4$ MHz / 150 $\Omega$ )
	typ. 0.1 dB ( $\leq 1$ MHz/600 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 $\Omega$ system	typ. 100 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ system	typ. 100 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 600 $\Omega$ system	typ. 10 MHz
Capacity (Core-Core)	typ. 20 pF
Capacity (Core-Earth)	typ. 10 pF

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP54
Ambient temperature (operation)	-40 °C ... 75 °C

## Standards and regulations

### Standards Information technology specification

Standards/regulations	IEC 61643-1
	EN 61643-11
	IEC 61643-21
	IEC 61643-21
	IEC 61643-21

### Air clearances and creepage distances

Standards/regulations	IEC 60664-1 / IEC 61643-1
Standards/specifications	DIN EN 61643-11
Note	2002
Standards/specifications	DIN EN 61643-11/A11
Note	2007
Standards/specifications	IEC 61643-1
Note	2005
Standards/specifications	DIN EN 61643-21
Note	2002

## Mounting

Mounting type	Surface/Panel mounting
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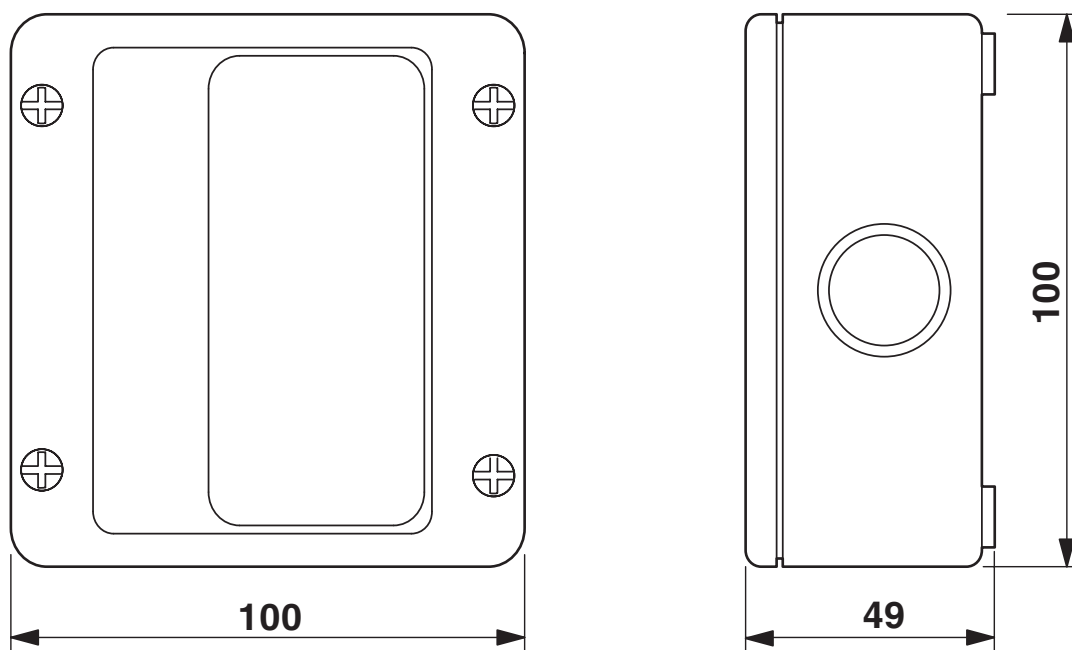


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## Drawings

Dimensional drawing



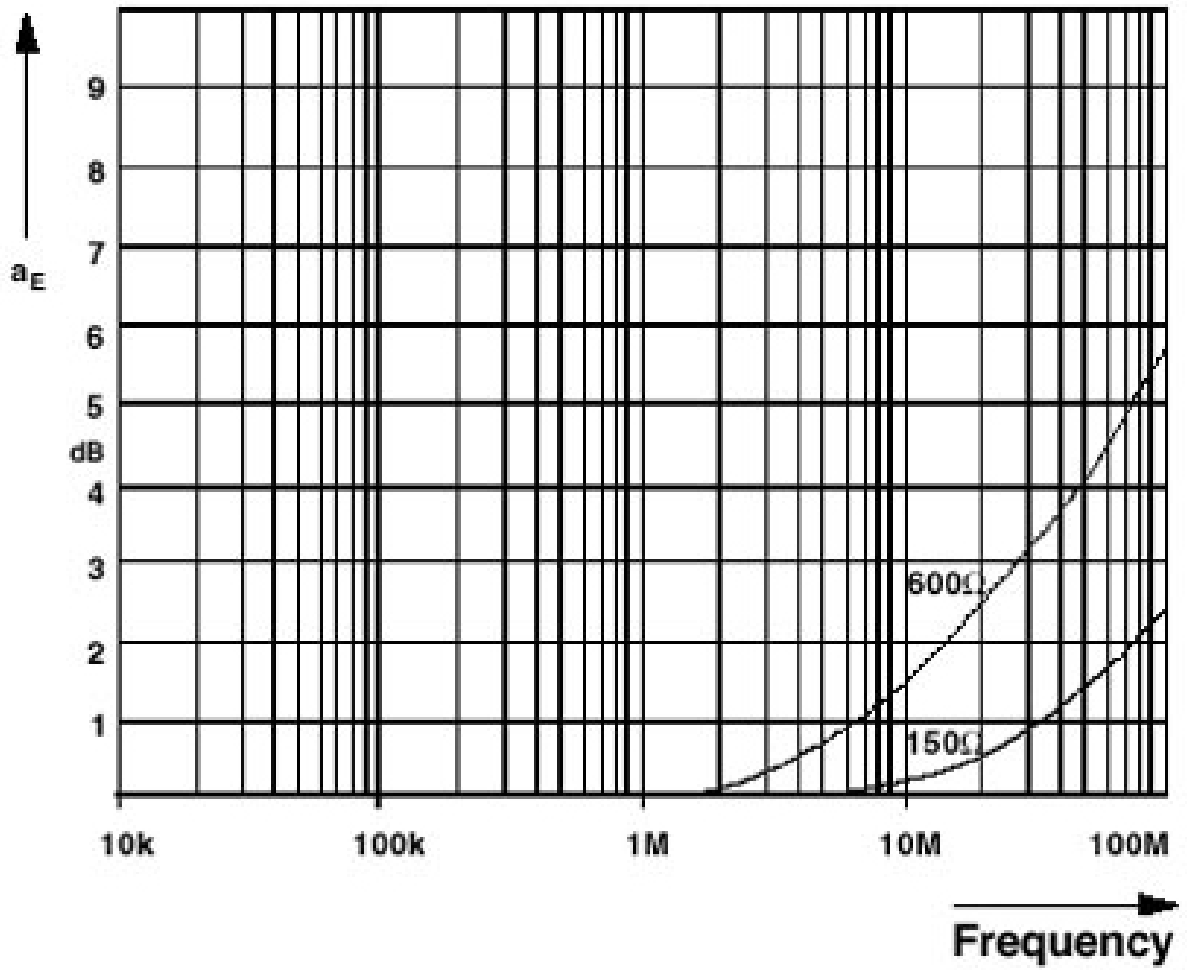
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Diagram



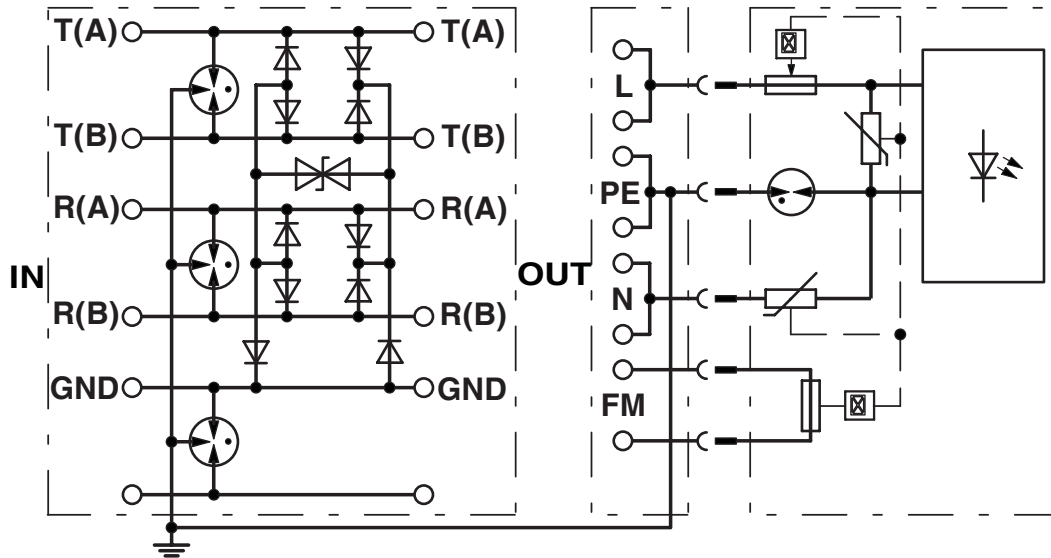
Characteristic attenuation curve

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Circuit diagram



1 = signaling  
2 = optional

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## Environmental product compliance

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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