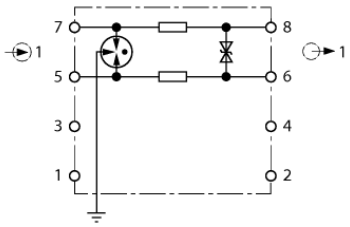
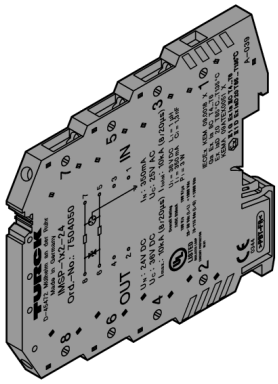
interface modul

Surge protection
1-channel
IMSP-1x2-24

TURCK
Industrial Automation





The IMSP-1X2-24 is a surge protection module, designed for the MSR technology. It protects one 24 V operated floating signal conductors.

The HART®-capable devices are IP20 protected and can be installed in Ex as well as non-Ex areas.

The 6.2 mm slim housing can be mounted on DIN rail acc. to DIN NS35.

- **Application area acc. to ATEX: II 1 G, II 1 D**
- **IECEx, UL**
- **SIL2**
- **Nominal voltage 24 VDC**
- **For a floating signal circuit in 2-wire technology**
- **IEC category: C1 / C2 / C3 / D1**
- **Flammability class V-0**
- **HART®-capable**

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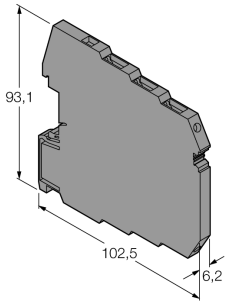
Surge protection
1-channel
IMSP-1x2-24



Type code	IMSP-1x2-24
Ident no.	7504050
Nominal voltage U_n	24 VDC
IEC category	C1; C2; C3; D1
Surge arrester, rated voltage U_c	25 VAC / 36 VDC
Nominal current In (≤ 40 °C)	350 mA
Active current I_c with given U_c	2 µA
Leakage current acc. to PE with given U_c	2 µA
Nominal discharge surge current I_n (8/20) µs (core-core)	5 kA
Nominal discharge surge current I_n (8/20) µs (core-ground)	5 kA
Total surge current (8/20) µs	20 kA
Total surge current (10/350) µs	1 kA
Discharge surge current I_{max} (8/20)µs (core-to-core)	10 kA
Discharge surge current I_{max} (8/20)µs (core-to-earth)	10 kA
Nominal pulse current I_{an} (10/1000) µs (core-core)	50 A
Nominal pulse current I_{an} (10/1000) µs (core-ground)	50 A
Lightning test current (10/350)µs, peak current I_{imp}	500 A
Output voltage limitation 1kV/µs (core-to-core)	≤60 V
Output voltage limitation 1kV/µs (core-to-earth)	≤650 V
Residual voltage I_n (core-to-core)	≤70 V
Residual voltage I_{an} (core-to-core)	≤50 V
Protection level U_P C2 - 10 kV/5 kA (core-core)	≤70 V (C2 - 10 kV / 5 kA)
Protection level U_P C3 - 10 A (core-core)	≤50 V (C3 - 10 A)
Protection level U_P D1 - 500 A (core-core)	≤80 V (D1 -500 A)
Protection level U_P C1 - 500 V/250 A (core-ground)	≤650 V (C1 - 500 V / 250 A)
Protection level U_P C2 - 10 kV/5 kA (core-ground)	≤700 V (C2 - 10kV / 5 kA)
Protection level U_P D1 - 500 A (core-ground)	≤700 V (D1 - 500 A)
Response time tA (core-to-core)	≤1 ns
Response time tA (core-to-earth)	≤100 ns
Insertion loss aE, sym.	Typ 0,7 dB (1 MHz / 50 Ω)
Insertion loss aE, sym.	Typ. 0,3 dB (350 MHz / 150Ω)
Cutoff frequency fg (3dB), asym. (GND) 50Ω system	Typ. 6 MHz
Cutoff frequency fg (3dB), asym. (GND) 150Ω system	Typ. 2 MHz
Capacitance	≤1.3 nF (per path)
Resistance per path	3,3 Ω 20%
Required backup fuse, max.	315 mA
Surge protection acc. to IEC 61643-21 (core-to-core)	C2 (10 kV / 5 kA); C3 (25 A)
Surge protection acc. to IEC 61643-21 (core-to-earth)	C2 (10 kV / 5 kA); C3 (25 A); D1 (500 A)
AC protection acc. to IEC 61643-21	5 A - 1 s
Standards for air and creepage distances	IEC 60664-1 / EN60079-11
Standards/Regulations	IEC 61643-21 / DIN EN 61643-21
Flammability class acc. to UL 94	V-0
Ex approval acc. to conformity certificate	DEKRA 11 ATEX 0016 X
Application area	II 1 G, II 1 D
Protection type	Ex ia IIC T4…T6; Ex iaD 20 T85°C…T135°C
Max. values:	terminal connection 5+7 and 6+8
Max. input voltage U_i	≤ 36 V
Max. input current I_i	≤ 350 mA
Max. input power P_i	≤ 3000 mW
Internal inductance/capacitance L_i/C_i	Li = 1 µH, Ci = 1.3 nF
Approval	SIL 2 acc. to EXIDA FMEDA
Mechanical Data	
Protection class	IP20
Ambient temperature	-40…+80 °C
Storage temperature	-40…+80°C
Dimensions	93.1 x 6.2 x 102.5 mm
Weight	43 g
Mounting instruction	For mounting on DIN rail
Housing material	plastic
Electrical connection	screw terminals
Terminal cross-section	2.5 mm^2
Tightening torque	0.8 Nm

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