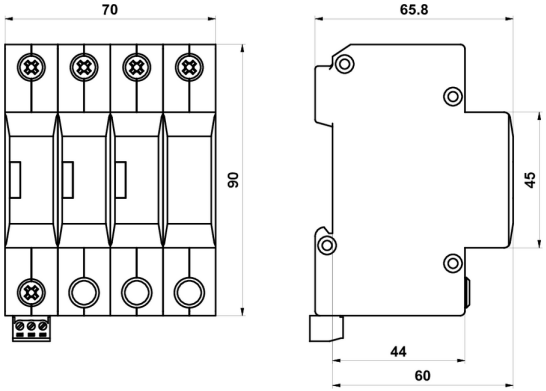
hakel®
Hz in Hearts



HSA-150/3+1 S

- Surge arresters type T2+T3 ensure the equipotential bonding and reduce switching, induced and residual overvoltage in LV power supply systems.
- The products consist of varistors with big discharge ability.
- Configurations 1+1 and 3+1 are additionally combined with a gas discharge tube which ensures zero leakage current through the PE conductor.
- Installed at the boundaries of LPZ 1 – LPZ 3 into subsidiary switchboards and control panels.
- If the product contains two PE (or PEN) terminals, it must not be used as a PE (PEN) bridge.
- **M** indication specifies a type of construction with removable module.
- **S** indication specifies a version with remote monitoring.

Type		HSA-150/3+1 S
Test class according to EN 61643-11:2012 (IEC 61643-11:2011)		T2, T3
System		TN-S, TT
Number of poles		4
Rated operating AC voltage	U_N	120 V
Maximum continuous operating voltage AC	U_C	150 V
Maximum discharge current (8/20)	I_{max}	40 kA
Nominal discharge current for class II test (8/20)	I_n	15 kA
Open circuit voltage of the combination wave generator	U_{OC}	6 kV
Total discharge current (8/20) L1+L2+L3+N->PE	I_{Total}	50 kA
Voltage protection level at I_n (L/N)	U_p	< 0.65 kV
Voltage protection level at I_n (L/PE)	U_p	< 1.5 kV
Voltage protection level at I_n (N/PE)	U_p	< 1.4 kV
Voltage protection level at U_{OC} (L/N)	U_p	< 0.5 kV
Impulse discharge current for class I test (10/350) N/PE	I_{imp}	20 kA
Temporary overvoltage test (TOV) for t_T = 5 s (L/N)	U_T	182 V
Temporary overvoltage test (TOV) for t_T = 120 min (L/N)	U_T	230 V
Temporary overvoltage test (TOV) for t_T = 0.2 s (N/PE)	U_T	1 200 V
Response time (L/N)	t_A	< 25 ns
Response time (N/PE)	t_A	< 100 ns
Maximal back-up fuse		160 A gL/gG
Residual current	I_{PE}	≤ 5 µA
Short-circuit current rating at maximum back-up fuse	I_{SCCR}	60 kA_{rms}
Follow current interrupt rating (N/PE)	I_{fi}	0.1 kA_{rms}
Lightning protection zone		LPZ 1-2, LPZ 2-3
Housing material		Polyamid PA6, UL94 V-0
Degree of protection		IP20
Operating temperature	ϑ	-40 ÷ 70 °C
Humidity range	RH	5 ÷ 95 %

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Type		HSA-150/3+1 S
Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to „V“ connection) for T2	S	2.5 mm^2 (L, N) 6 mm^2 (PE, PEN)
Clamp fastening range (solid conductor)		1.5 ÷ 25 mm^2
Clamp fastening range (stranded conductor)		1.5 ÷ 16 mm^2
Tightening moment		3 Nm
Installation		On DIN rail 35 mm
Modular width		4 TE
Operating position		Any
Product placement environment		Internal
Signalling at the device		Optic
Importance of local signaling		OK – clear target FAULT – red target
Remote signalling		Yes
Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm^2)		AC: 250 V / 1.5 A, DC: 250 V / 0.1 A
Modular design		No
Lifetime		> 100 000 h
Designed according to standards		
Requirements and test methods for SPDs connected to low-voltage power systems		IEC 61643-11:2011
Safety of Flammability of Plastic Materials		UL 94
Application standards		
Protection against lightning		IEC 62305:2010
Selection and erection of electrical equipment – Switchgear and controlgear		HD 60364-5-53:2022
Selection and application principles for SPDs connected to low-voltage power systems		CLC/TS 61643-12:2009
Ordering, packaging and additional data		
Mass	m	356 g
Mass (including the packaging)	m	384 g
Packaging dimensions (H x W x D)		74 x 112 x 73 mm
Packaging value	V	0.61 dm^3
ETIM group		EG000021
ETIM class		EC000941
Customs tariff no.		85363010
EAN code		8590681115220
Art. number		**24 543**

The link in the QR code leads to the online presentation of the **HSA-150/3+1 S**.
There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials.
For more information, visit **www.hakel.com**

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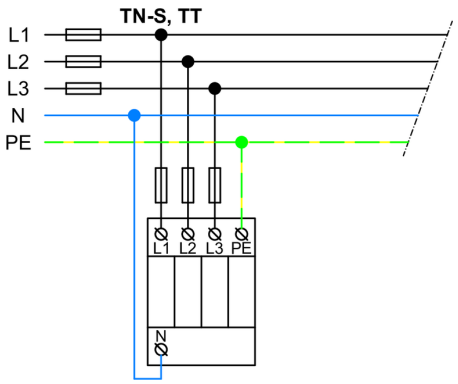
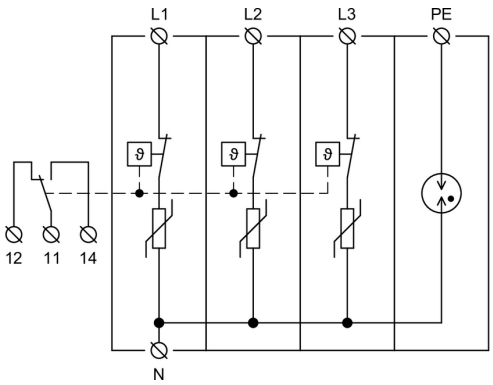
Application wiring diagram (installation)



Internal diagram



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