

## HSA-385/4+0

- 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-385/4+0
Test class according to EN 61643-11:2012 (IEC 61643-11:2011)		T2, T3
System		TN-S
Number of poles		4
Rated operating AC voltage	$U_N$	230 V
Maximum continuous operating voltage AC	$U_C$	385 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	$I_{Total}$	160 kA
Voltage protection level at $I_n$	$U_p$	< 1.5 kV
Voltage protection level at $U_{OC}$	$U_p$	< 1.2 kV
Temporary overvoltage test (TOV) for $t_T = 5$ s	$U_T$	337 V
Temporary overvoltage test (TOV) for $t_T = 120$ min	$U_T$	440 V
Response time	$t_A$	< 25 ns
Maximal back-up fuse		160 A gL/gG
Residual current	$I_{PE}$	≤ 450 μA
Short-circuit current rating at maximum back-up fuse	$I_{SCCR}$	60 kA <sub>rms</sub>
Lightning protection zone		LPZ 1-2, LPZ 2-3
Housing material		Polyamid PA6, UL94 V-0
Degree of protection		IP20
Operating temperature	$\vartheta$	-40 ÷ 70 °C
Humidity range	RH	5 ÷ 95 %
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 <sup>2</sup> (L, N) 6 mm <sup>2</sup> (PE, PEN)
Clamp fastening range (solid conductor)		1.5 ÷ 25 mm <sup>2</sup>
Clamp fastening range (stranded conductor)		1.5 ÷ 16 mm <sup>2</sup>
Tightening moment		3 Nm
Installation		On DIN rail 35 mm
Modular width		4 TE

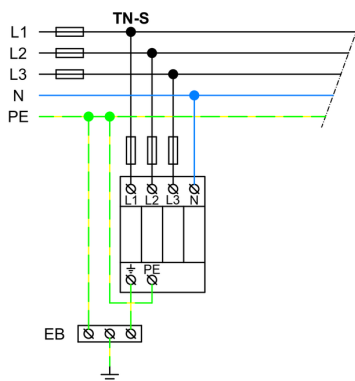
Type	HSA-385/4+0	
Operating position	Any	
Product placement environment	Internal	
Signalling at the device	Optic	
Importance of local signalling	OK – clear target FAULT – red target	
Remote signalling	No	
Pluggable version	No	
Lifetime	> 100 000 h	
<b>Designed according to standards</b>		
Requirements and test methods for SPDs connected to low-voltage power systems	IEC 61643-11:2011	
Safety of Flammability of Plastic Materials	UL 94	
<b>Application standards</b>		
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	
<b>Ordering, packaging and additional data</b>		
Mass	m	392 g
Mass (including the packaging)	m	420 g
Packaging dimensions (H x W x D)	74 x 112 x 73 mm	
Packaging value	V	0.61 dm <sup>3</sup>
ETIM group	EG000021	
ETIM class	EC000941	
Customs tariff no.	85363010	
EAN code	8590681115411	
<b>Art. number</b>	<b>24 562</b>	



The link in the QR code leads to the online presentation of the HSA-385/4+0. 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](http://www.hakel.com)



**Application wiring diagram (installation)**



**Internal diagram**

