

## HSA-275/3+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.

Туре		HSA-275/3+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	$U_N$	230 V
Maximum continuous operating voltage AC	$U_{C}$	275 V
Maximum discharge current (8/20)	I <sub>max</sub>	50 kA
Nominal discharge current for class II test (8/20)	In	20 kA
Open circuit voltage of the combination wave generator	U <sub>oc</sub>	6 kV
Total discharge current (8/20) L1+L2+L3+N->PE	I <sub>Total</sub>	50 kA
Voltage protection level at I <sub>n</sub> (L/N)	$U_p$	< 1.2 kV
Voltage protection level at I <sub>n</sub> (L/PE)	$U_p$	< 1.5 kV
Voltage protection level at I <sub>n</sub> (N/PE)	$U_p$	< 1.4 kV
Voltage protection level at U <sub>oc</sub> (L/N)	$U_p$	< 0.8 kV
Impulse discharge current for class I test (10/350) N/PE	I <sub>imp</sub>	20 kA
Temporary overvoltage test (TOV) for $t_T = 5 \text{ s (L/N)}$	U <sub>T</sub>	337 V
Temporary overvoltage test (TOV) for $t_T = 120 \text{ min (L/N)}$	$U_T$	440 V
Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s (N/PE)}$	U <sub>T</sub>	1 200 V
Response time (L/N)	t <sub>A</sub>	< 25 ns
Response time (N/PE)	t <sub>A</sub>	< 100 ns
Maximal back-up fuse		160 A gL/gG
Residual current	I <sub>PE</sub>	≤ 5 μA
Short-circuit current rating at maximum back-up fuse	I <sub>SCCR</sub>	60 kA <sub>rms</sub>
Follow current interrupt rating (N/PE)	I <sub>fi</sub>	0.1 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	θ	-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 """ connection") for T2         \$ .2.5 mm² (L, N) 6 mm³ (PE, PEN)           Clamp fastening range (solid conductor)         1.5 ÷ 25 mm²           Clamp fastening range (solid conductor)         1.5 ÷ 16 mm²           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           Remote signalling         Yes           Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²)         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         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 pow	Туре		HSA-275/3+1 S
Clamp fastening range (stranded conductor)         1.5 ± 16 mm²           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         NK - clear target           Remote signalling         Yes           Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²)         No           Lifetine         > 100 000 h           Designed according to standards         IEC 61643-11:2011           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         UL 94           Protection against lightning         IEC 62305:2010           Selection and erection of electrical equipment – Switchgear and controlgear         HD 60384-5-53:2022           Selection and application principles for SPDs connected to low-voltage power systems         CLC/TS 61643-12:2009           Ordering, packaging and additional data         m           Mass         m         356 g           Mass (includ		S	- ( ) /
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 signalling FAULT red target FA	Clamp fastening range (solid conductor)		1.5 ÷ 25 mm <sup>2</sup>
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 mm²)         AC: 250 V / 1.5 A, DC: 250 V / 0.1 A           Modular design         No           Lifetime         > 1000 000 h           Designed according to standards         IEC 61643-11:2011           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 (including the packaging)         m         356 g           Mass (including the packaging)         m         <	Clamp fastening range (stranded conductor)		1.5 ÷ 16 mm <sup>2</sup>
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	ETIM class		EC000941
G00004445040	Customs tariff no.		85363010
EAN code 8590681115046	EAN code		8590681115046
Art. number 24 524	Art. number		24 524

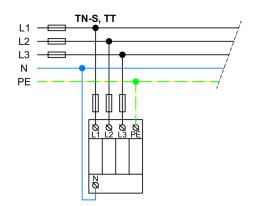


**The link in the QR code** leads to the online presentation of the **HSA-275/3+1 S**. There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials. For more information, visit **www.hakel.com** 





## Application wiring diagram (installation)



## Internal diagram

