

## HLSA12,5-275/3+0

- Lightning impulse current and surge arresters type T1+T2+T3.
- The products consist of varistors with big discharge ability.
- HLSA12,5 in configurations 1+1, 3+1 and HLSA12,5G are additionally combined with a gas discharge tube which ensures zero leakage current through the PE conductor.
- Suitable for objects with considerable levels of protection LPL III and LPL IV.
- Installed at the boundaries of LPZ 0 LPZ 1 and higher zones, closest to where overhead line enters the building i.e. in the main distribution boards.
- In case of the installation of a type T1+T2+T3 in the main switchboard, it is also necessary to install type T2 and T3 in any additional distribution boards in the electrical installation.
- 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		HLSA12,5-275/3+0
Test class according to EN 61643-11:2012 (IEC 61643-11:2011)		T1, T2, T3
System		TN-C
Number of poles		3
Rated operating AC voltage	$U_N$	230 V
Maximum continuous operating voltage AC	U <sub>c</sub>	275 V
Maximum discharge current (8/20)	I <sub>max</sub>	50 kA
Impulse discharge current for class I test (10/350)	l <sub>imp</sub>	12.5 kA
Charge	Q	6.25 As
Specific energy for class I test	W/R	39 kJ/Ω
Total discharge current (10/350) L1+L2+L3->PEN	I <sub>Total</sub>	37.5 kA
Total discharge current (8/20) L1+L2+L3->PEN	I <sub>Total</sub>	150 kA
Nominal discharge current for class II test (8/20)	l <sub>n</sub>	25 kA
Open circuit voltage of the combination wave generator	U <sub>oc</sub>	6 kV
Voltage protection level at I <sub>n</sub>	$U_p$	< 1.2 kV
Temporary overvoltage test (TOV) for $t_T = 5 s$	$U_T$	337 V
Temporary overvoltage test (TOV) for $t_T = 120 \text{ min}$	$U_T$	440 V
Response time	t <sub>A</sub>	< 25 ns
Maximal back-up fuse		160 A gL/gG
Residual current	I <sub>PE</sub>	≤ 300 μA
Short-circuit current rating at maximum back-up fuse	I <sub>SCCR</sub>	60 kA <sub>rms</sub>
Lightning protection zone		LPZ 0-1, 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 "V" connection) for T1	S	6 mm² (L, N) 16 mm² (PE, PEN)

## **Lightning and surge arresters T1+T2+T3**



Minimum cross-section of connected Qu conductors accord. to HD 60364-5-3:2022 (doesn't apply to _V* connection) for T2	Туре		HLSA12,5-275/3+0
Clamp fastening range (solid conductor)         1.5 ÷ 25 mm²           Clamp fastening range (stranded conductor)         1.5 ÷ 16 mm²           Clamp fastening range (stranded conductor)         3 Nm           Installation         0n DIN rail 35 mm           Modular width         3 TE           Width         52.5 mm           Height         90 mm           Depth         65.8 mm           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target           Remote signalling         No           Pluggable version         No           Lifetime         > 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         U.94           Protection against lightning         IEC 62055:2010           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, packagin		S	
Clamp fastening range (stranded conductor)         1.5 ± 16 mm²           Tightening moment         3 Nm           Installation         On DIN rail 35 mm           Modular width         3 TE           Width         52.5 mm           Height         90 mm           Depth         65.8 mm           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target FAULT - red target FAULT	Power conductor stripping length		10 mm
Tightening moment         3 Nm           Installation         On DIN rail 35 mm           Modular width         3 TE           Width         52.5 mm           Height         90 mm           Depth         65.8 mm           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target FAULT - red target           Remote signalling         No           Pluggable version         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         420 g           Mass (including the	Clamp fastening range (solid conductor)		$1.5 \div 25 \text{ mm}^2$
Installation         On DIN rail 35 mm           Modular width         3 TE           Width         52.5 mm           Height         90 mm           Depth         65.8 mm           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target           Remote signalling         No           Pluggable version         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         CLCTS 61643-12:2009           Ordering, packaging and additional data         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x	Clamp fastening range (stranded conductor)		$1.5 \div 16 \text{ mm}^2$
Modular width         3 TE           Width         52.5 mm           Height         90 mm           Depth         65.8 mm           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target FAULT - red target           FAULT - red target         FAULT - red target           FAULT - red target         FAULT - red target           FAULT - red target         FAULT - red target           Fear of signalling         No           Pluggable version         No           Lifetime         > 100 000 h           Designed according to standards         IEC 61643-11:2011           Safety of Flammability of Plastic Materials         UL 94           Application standards         UL 94           Protection against lightning         IEC 61643-11:2011           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 dat         m         444 g           Mass (including the packaging)         m         444 g	Tightening moment		3 Nm
Width         52.5 mm           Height         90 mm           Depth         65.8 mm           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 0000 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         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm         60 x 113 x 73 mm           Pack	Installation		On DIN rail 35 mm
Height         90 mm           Depth         65.8 mm           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target FAULT - red target           Remote signalling         No           Pluggable version         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         CL.C.TS 61643-12:2009           Ordering, packaging and additional data           Mass         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM clas	Modular width		3 TE
Depth         65.8 mm           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target FAULT - red target           Remote signalling         No           Pluggable version         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         ### 420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457 <th< td=""><td>Width</td><td></td><td>52.5 mm</td></th<>	Width		52.5 mm
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           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         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM class         EC000021           ETIM class         EC001457           Customs tariff no.         85363010	Height		90 mm
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           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 (including the packaging)         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010 <td>Depth</td> <td></td> <td>65.8 mm</td>	Depth		65.8 mm
Signalling at the device         Optic           Importance of local signaling         OK - clear target FAULT - red target           Remote signalling         No           Pluggable version         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         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681113288	Operating position		Any
Importance of local signaling       OK - clear target FAULT - red target         Remote signalling       No         Pluggable version       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       m       420 g         Mass (including the packaging)       m       444 g         Packaging dimensions (H x W x D)       60 x 113 x 73 mm         Packaging value       V       0.5 dm³         ETIM group       EG000021         ETIM class       EC001457         Customs tariff no.       85363010         EAN code       8590681113288	Product placement environment		Internal
Remote signalling No Pluggable version No Lifetime Solution 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 Ordering, packaging and additional data  Mass m 420 g Mass (including the packaging) m 444 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³  ETIM group EG000021  ETIM class EC001457 Customs tariff no. 85363010  EAN code 859681113288	Signalling at the device		Optic
Pluggable version       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       420 g         Mass (including the packaging)       m       444 g         Packaging dimensions (H x W x D)       60 x 113 x 73 mm       60 x 113 x 73 mm         Packaging value       V       0.5 dm³         ETIM group       EG000021       ETIM class       EC001457         Customs tariff no.       85363010         EAN code       859681113288	Importance of local signaling		S S
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 420 g Mass (including the packaging) m 444 g  Packaging dimensions (H x W x D) 60 x 113 x 73 mm  Packaging value V 0.5 dm³  ETIM group EG000021  ETIM class EC001457  Customs tariff no. 85363010  EAN code 859681113288	Remote signalling		No
Designed according to standards Requirements and test methods for SPDs connected to low-voltage power systems Safety of Flammability of Plastic Materials UL 94  Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems CLC/TS 61643-12:2009  Ordering, packaging and additional data  Mass m 420 g Mass (including the packaging) m 444 g Packaging dimensions (H x W x D) 60 x 113 x 73 mm Packaging value V 0.5 dm³  ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code  8590681113288	Pluggable version		No
Requirements and test methods for SPDs connected to low-voltage power systems  Safety of Flammability of Plastic Materials  Application standards  Protection against lightning  Selection and erection of electrical equipment – Switchgear and controlgear  Selection and application principles for SPDs connected to low-voltage power systems  Ordering, packaging and additional data  Mass  m  420 g  Mass (including the packaging)  Packaging dimensions (H x W x D)  Packaging value  V  0.5 dm³  ETIM group  ETIM group  ETIM class  ECO01457  Customs tariff no.  8590681113288	Lifetime		> 100 000 h
Safety of Flammability of Plastic Materials  Application standards  Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems  CLC/TS 61643-12:2009  Ordering, packaging and additional data  Mass m 420 g Mass (including the packaging) m 444 g  Packaging dimensions (H x W x D) Packaging value  V 0.5 dm³  ETIM group  ETIM class EC001457 Customs tariff no. 85363010  EAN code	Designed according to standards		
Application standards Protection against lightning Selection and erection of electrical equipment – Switchgear and controlgear Selection and application principles for SPDs connected to low-voltage power systems  Ordering, packaging and additional data  Mass  m 420 g Mass (including the packaging) m 444 g  Packaging dimensions (H x W x D) Packaging value  V 0.5 dm³  ETIM group  ETIM group  ETIM class  EC001457  Customs tariff no.  85363010  EAN code	Requirements and test methods for SPDs connected to low-voltage power systems		IEC 61643-11:2011
Protection against lightning  Selection and erection of electrical equipment – Switchgear and controlgear  Selection and application principles for SPDs connected to low-voltage power systems  CLC/TS 61643-12:2009  Ordering, packaging and additional data  Mass  m  420 g  Mass (including the packaging)  m  444 g  Packaging dimensions (H x W x D)  Packaging value  V  0.5 dm³  ETIM group  EG000021  ETIM class  Customs tariff no.  85363010  EAN code	Safety of Flammability of Plastic Materials		UL 94
Selection and erection of electrical equipment – Switchgear and controlgear  Selection and application principles for SPDs connected to low-voltage power systems  CLC/TS 61643-12:2009  Ordering, packaging and additional data  Mass m 420 g  Mass (including the packaging) m 444 g  Packaging dimensions (H x W x D) 60 x 113 x 73 mm  Packaging value V 0.5 dm³  ETIM group EG000021  ETIM class EC001457  Customs tariff no. 85363010  EAN code 8590681113288	Application standards		
Selection and application principles for SPDs connected to low-voltage power systems  Ordering, packaging and additional data  Mass  Mass (including the packaging)  Packaging dimensions (H x W x D)  Packaging value  V  0.5 dm³  ETIM group  ETIM class  CLC/TS 61643-12:2009  M  420 g  M  444 g  60 x 113 x 73 mm  V  0.5 dm³  EG000021  ETIM class  EC001457  Customs tariff no.  85363010  8590681113288	Protection against lightning		IEC 62305:2010
Ordering, packaging and additional data           Mass         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681113288	Selection and erection of electrical equipment – Switchgear and controlgear		HD 60364-5-53:2022
Mass (including the packaging)         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681113288	Selection and application principles for SPDs connected to low-voltage power systems		CLC/TS 61643-12:2009
Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm           Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681113288	Ordering, packaging and additional data		
Packaging dimensions (H x W x D)       60 x 113 x 73 mm         Packaging value       V       0.5 dm³         ETIM group       EG000021         ETIM class       EC001457         Customs tariff no.       85363010         EAN code       8590681113288	Mass	m	420 g
Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681113288	Mass (including the packaging)	m	444 g
ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681113288	Packaging dimensions (H x W x D)		60 x 113 x 73 mm
ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681113288	Packaging value	V	0.5 dm <sup>3</sup>
Customs tariff no.         85363010           EAN code         8590681113288	ETIM group		EG000021
EAN code 8590681113288	ETIM class		EC001457
	Customs tariff no.		85363010
Art. number 10 062	EAN code		8590681113288
	Art. number		10 062

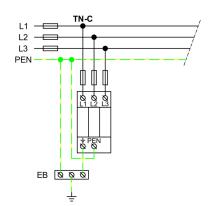


**The link in the QR code** leads to the online presentation of the **HLSA12,5-275/3+0**. There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials. For more information, visit **www.hakel.com** 





## Application wiring diagram (installation)



## Internal diagram

