

## HLSA12,5-275 M S

- 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 M S
Test class according to EN 61643-11:2012 (IEC 61643-11:2011)		T1, T2, T3
System		TN
Number of poles		1
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
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>	$U_p$	< 1.25 kV
Temporary overvoltage test (TOV) for $t_T = 5 \text{ s}$	U <sub>T</sub>	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>	≤ 700 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	9	-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)
Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 (doesn't apply to $_{\rm v}$ V" connection) for T2	S	2.5 mm² (L, N) 6 mm² (PE, PEN)

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



Clamp fastering range (solid conductor)         1.5 ± 25 mm²           Clamp fastering range (stranded conductor)         1.5 ± 16 mm²           Tightering moment         3 Nm           Installation         On DIN rail 35 mm           Modular width         1 TE           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         Ke Celear 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           Max 1 mm²)         Yes           Article number of spare module         16 086           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         U. 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<	Туре		HLSA12,5-275 M S
Tightening moment         3 Nm           Installation         On DIN rail 35 mm           Modular width         1 T E           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         K- clear target           FAULT - red target         FAULT - red target           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         Yes           Article number of spare module         1 6 086           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         UL 94           Application standards         IEC 61643-11:2011           Protection against lightning         IEC 6205:2010           Selection and erection of electrical equipment - Switchgear and controlgear         H0 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 <t< td=""><td>Clamp fastening range (solid conductor)</td><td></td><td>1.5 ÷ 25 mm<sup>2</sup></td></t<>	Clamp fastening range (solid conductor)		1.5 ÷ 25 mm <sup>2</sup>
Installation         On DIN rail 35 mm           Modular width         1 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)         Acc: 250 V/ 1.5 A, DC: 250 V / 0.1 A           Modular design         Yes           Article number of spare module         16 086           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           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         147 g           Mass (including the packaging)         m         158 g           Packaging dimensions (H x W x	Clamp fastening range (stranded conductor)		1.5 ÷ 16 mm <sup>2</sup>
Modular width         1 TE           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         KC - 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         Yes           Article number of spare module         1 6 086           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         UL 94           Application standards         UL 94           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         147 g           Mass (including the packaging)         m         147 g           Mass (including the packaging) <td>Tightening moment</td> <td></td> <td>3 Nm</td>	Tightening moment		3 Nm
Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signalling         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         Yes           Article number of spare module         16 086           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         UL 94           Application standards         IEC 62305:2010           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         147 g           Mass (including the packaging)         m         158 g           Packaging dimensions (H x W x D)         26 x 98 x 73 mm <td>Installation</td> <td></td> <td>On DIN rail 35 mm</td>	Installation		On DIN rail 35 mm
Product placement environment       Internal         Signalling at the device       Optic         Importance of local signalling       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       Yes         Article number of spare module       16 086         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       147 g         Mass (including the packaging)       m       158 g         Packaging dimensions (H x W x D)       26 x 98 x 73 mm         Packaging value       V       0.19 dm³         ETIM group	Modular width		1 TE
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       Yes         Article number of spare module       16 086         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       147 g         Mass (including the packaging)       m       158 g         Packaging dimensions (H x W x D)       26 x 98 x 73 mm         Packaging value       V       0.19 dm³         ETIM class       EC001457         Customs tariff no.       859	Operating position		Any
Importance of local signalling       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       Yes         Article number of spare module       16 086         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       147 g         Mass (including the packaging)       m       158 g         Packaging dimensions (H x W x D)       26 x 98 x 73 mm         Packaging value       V       0.19 dm³         ETIM class       EC000021         ETIM class       EC001457         Customs tariff no.       85363010	Product placement environment		Internal
Remote signalling         FAULT - red target           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         Yes           Article number of spare module         16 086           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         UL 94           Application standards         IEC 62305:2010           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         147 g           Mass (including the packaging)         m         158 g           Packaging dimensions (H x W x D)         26 x 98 x 73 mm           Packaging value         V         0.19 dm³           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681114421	Signalling at the device		Optic
Potential free signal contact (S) (recommended cross-section of remote monitoring max. 1 mm²)  Modular design Article number of spare module Lifetime Solution  Designed according to standards Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems  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 147 g  Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value  V 0.19 dm³  ETIM group  ETIM group  EG000021  ETIM class Customs tariff no.  EAN code  AC: 250 V / 1.5 A, DC: 250 V / 0.1 A  Yes  AC: 250 V / 1.5 A, DC: 250 V / 0.1 A  AC: 250 V / 1.5 A, DC: 250 V / 0.1 A  Pes  AC: 250 V / 1.5 A, DC: 250 V / 0.1 A  AC: 250 V / 0.1 A  AC: 250 V / 1.5 A, DC: 250 V / 0.1 A  Accidentic in microsics of the selection of the selecti	Importance of local signaling		
max. 1 mm²)       Yes         Article number of spare module       16 086         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       147 g         Mass (including the packaging)       m       158 g         Packaging dimensions (H x W x D)       26 x 98 x 73 mm       26 x 98 x 73 mm         Packaging value       V       0.19 dm³         ETIM group       EG000021       ETIM class       EC001457         Customs tariff no.       859681114421	Remote signalling		Yes
Article number of spare module  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 147 g  Mass (including the packaging) m 158 g  Packaging dimensions (H x W x D) 26 x 98 x 73 mm  Packaging value V 0.19 dm³  ETIM group EG000021  ETIM class EC001457  Customs tariff no. 85363010  EAN code 8590681114421			AC: 250 V / 1.5 A, DC: 250 V / 0.1 A
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Designed according to standardsRequirements and test methods for SPDs connected to low-voltage power systemsIEC 61643-11:2011Safety of Flammability of Plastic MaterialsUL 94Application standardsProtection against lightningIEC 62305:2010Selection and erection of electrical equipment – Switchgear and controlgearHD 60364-5-53:2022Selection and application principles for SPDs connected to low-voltage power systemsCLC/TS 61643-12:2009Ordering, packaging and additional dataMassm147 gMass (including the packaging)m158 gPackaging dimensions (H x W x D)26 x 98 x 73 mmPackaging valueV0.19 dm³ETIM groupEG000021ETIM classEC001457Customs tariff no.85363010EAN code8590681114421	Article number of spare module		16 086
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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 147 g  Mass (including the packaging) m 158 g  Packaging dimensions (H x W x D) 26 x 98 x 73 mm  Packaging value  V 0.19 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 CLC/TS 61643-12:2009  Ordering, packaging and additional data  Mass m 147 g Mass (including the packaging) m 158 g Packaging dimensions (H x W x D) 26 x 98 x 73 mm Packaging value V 0.19 dm³  ETIM group EG000021  ETIM class Customs tariff no. 85363010  EAN code  EN 26 x 98 x 73 mm EC001457  8590681114421	Requirements and test methods for SPDs connected to low-voltage power systems		IEC 61643-11:2011
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Ordering, packaging and additional data           Mass         m         147 g           Mass (including the packaging)         m         158 g           Packaging dimensions (H x W x D)         26 x 98 x 73 mm           Packaging value         V         0.19 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681114421	Selection and erection of electrical equipment – Switchgear and controlgear		HD 60364-5-53:2022
Mass       m       147 g         Mass (including the packaging)       m       158 g         Packaging dimensions (H x W x D)       26 x 98 x 73 mm         Packaging value       V       0.19 dm³         ETIM group       EG000021         ETIM class       EC001457         Customs tariff no.       85363010         EAN code       8590681114421	Selection and application principles for SPDs connected to low-voltage power systems		CLC/TS 61643-12:2009
Mass (including the packaging)       m       158 g         Packaging dimensions (H x W x D)       26 x 98 x 73 mm         Packaging value       V       0.19 dm³         ETIM group       EG000021         ETIM class       EC001457         Customs tariff no.       85363010         EAN code       8590681114421	Ordering, packaging and additional data		
Packaging dimensions (H x W x D)       26 x 98 x 73 mm         Packaging value       V       0.19 dm³         ETIM group       EG000021         ETIM class       EC001457         Customs tariff no.       85363010         EAN code       8590681114421	Mass	m	147 g
Packaging value         V         0.19 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681114421	Mass (including the packaging)	m	158 g
ETIM group       EG000021         ETIM class       EC001457         Customs tariff no.       85363010         EAN code       8590681114421	Packaging dimensions (H x W x D)		26 x 98 x 73 mm
ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681114421	Packaging value	V	0.19 dm <sup>3</sup>
Customs tariff no.       85363010         EAN code       8590681114421	ETIM group		EG000021
EAN code 8590681114421	ETIM class		EC001457
	Customs tariff no.		85363010
Art. number 16 090	EAN code		8590681114421
	Art. number		16 090

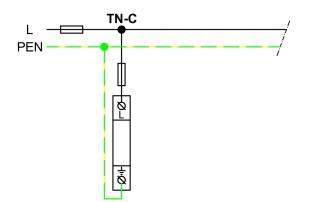


**The link in the QR code** leads to the online presentation of the **HLSA12,5-275 M S**. There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials. For more information, visit **www.hakel.com** 





## Application wiring diagram (installation)



## Internal diagram

