

## HLSA12,5G-255/3+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		HLSA12,5G-255/3+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>	255 V
Maximum discharge current (8/20)	I <sub>max</sub>	50 kA
Impulse discharge current for class I test (10/350)	I <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)	I <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>	$U_p$	< 1.1 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>	< 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>
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 Cu conductors accord. to HD 60364-5-53:2022   S	Туре		HLSA12,5G-255/3+0
(doesn't apply to "" connection) for T2         6 mm² (PE, PEN)           Clamp fastening range (solid conductor)         1.5 ÷ 25 mm²           Clamp fastening range (stranded conductor)         3 Nm           Tightening moment         3 Nm           Installation         On DIN rail 35 mm           Modular width         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         No           Modular design         No           Lifetime         >100 000 h           Designed according to standards         No           Requirements and lest methods for SPDs connected to low-voltage power systems         IEC 61643-11:2011           Safety of Flammability of Plastic Materials         UL 94           Application standards         UE Ge 2005:2010           Protection against lightning         IEC 6205:2010           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	•	0	•
Clamp fastening range (stranded conductor)         1.5 ÷ 16 mm²           Tightening moment         3 Nm           Installation         On DIN rail 35 mm           Modular width         3 TE           Operating position         Any           Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         FAULT - red target           Femote signalling         No           Modular design         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         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           Mass         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 73 mm		5	6 mm² (PE, PEN)
Tightening moment         3 Nm           Installation         On DIN rail 35 mm           Modular width         3 TE           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           Remote signalling         No           Modular design         No           Lifetime         > 100 000 h           Designed according to standards         IEC 6143-11:2011           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           Mass         m         420 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)	Clamp fastening range (solid conductor)		1.5 ÷ 25 mm <sup>2</sup>
Installation         On DIN rail 35 mm           Modular width         3 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         No           Modular design         No           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 61643-112:2009           Ordering, packaging and additional data         m         420 g           Mass (including the packaging)         m         444 g           Mass (including the packaging)         m         444 g           Packaging dimensions (H x W x D)         60 x 113 x 7	Clamp fastening range (stranded conductor)		$1.5 \div 16 \text{ mm}^2$
Modular width         3 TE           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           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           Frotection against lightning         IEC 62305:2010           Selection and erection of electrical equipment - Switchgear and controlgear         HD 80364-5-53:2022           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	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         No           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         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	Installation		On DIN rail 35 mm
Product placement environment         Internal           Signalling at the device         Optic           Importance of local signaling         OK - clear target FAULT - red target           Remote signalling         No           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         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	Modular width		3 TE
Signalling at the device       Optic         Importance of local signaling       OK - clear target FAULT - red target         Remote signalling       No         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       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       8590681185872	Operating position		Any
Importance of local signaling  Remote signalling  No  Modular design  No  Modular design  No  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  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  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  EC001457  Customs tariff no.  85363010  EAN code	Product placement environment		Internal
Remote signalling No Modular design 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 Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Requirements and test methods for SPDs connected to low-voltage power systems Recation standards Requirements and erection of electrical equipment – Switchgear and controlgear Reduction against lightning Recation ad erection of electrical equipment – Switchgear and controlgear Reduction adjusted in the C62305:2010 Relection and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Requirements and erection of electrical equipment – Switchgear and controlgear Recation and erection of electrical equipment – Switchgear and controlgear Recation and erection of electrical equipment – Switchgear and controlgear Recation and erection of electrical equipment – Switchgear and controlgear Recati	Signalling at the device		Optic
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 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 8590681185872	Importance of local signaling		o o
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 8590681185872	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	Modular design		No
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  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  ECO01457  Customs tariff no.  8590681185872	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 group  EG000021  ETIM class 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 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	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  ETIM class  Customs tariff no.  EAN code  ES90681185872	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)  Packaging dimensions (H x W x D)  Packaging value  V  0.5 dm³  ETIM group  ETIM class  EC001457  Customs tariff no.  EAN code  HD 60364-5-53:2022  CLC/TS 61643-12:2009	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  Pool of x 113 x 73 mm  V  0.5 dm³  EC000021  ETIM class  EC001457  Customs tariff no.  85363010  8590681185872	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         8590681185872	Selection and erection of electrical equipment – Switchgear and controlgear		HD 60364-5-53:2022
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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       8590681185872	Mass	m	420 g
Packaging value         V         0.5 dm³           ETIM group         EG000021           ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681185872	Mass (including the packaging)	m	444 g
ETIM group       EG000021         ETIM class       EC001457         Customs tariff no.       85363010         EAN code       8590681185872	Packaging dimensions (H x W x D)		60 x 113 x 73 mm
ETIM class         EC001457           Customs tariff no.         85363010           EAN code         8590681185872	Packaging value	V	0.5 dm <sup>3</sup>
Customs tariff no.         85363010           EAN code         8590681185872	ETIM group		EG000021
EAN code 8590681185872	ETIM class		EC001457
	Customs tariff no.		85363010
Art. number 10 269	EAN code		8590681185872
	Art. number		10 269

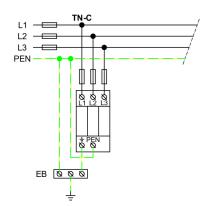


**The link in the QR code** leads to the online presentation of the **HLSA12,5G-255/3+0**. There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials. For more information, visit **www.hakel.com** 





## Application wiring diagram (installation)



## Internal diagram

