

PIVM12,5-275/3+1 Vseries

- Lightning impulse current and surge arresters type T1+T2 ensure the equipotential bonding, eliminate the effects of lightning current and reduce switching, induced and residual overvoltage in single-phase and three-phase 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.
- 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.
- M specifies a type of construction with removable module.
- **DS** indication specifies a version with remote monitoring.
- Other voltage levels can be produced on request.

Test class according to EN 61643-11:2012 (IEC 61643-11:2011)		
Customs		T1, T2
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 _{max}	50 kA
Impulse discharge current for class I test (10/350) L/N	I _{imp}	12.5 kA
Charge (L/N)	Q	6.25 As
Specific energy for class I test (L/N)	W/R	39 kJ/Ω
Impulse discharge current for class I test (10/350) N/PE	l _{imp}	50 kA
Charge (N/PE)	Q	25 As
Specific energy for class I test (N/PE)	W/R	625 kJ/Ω
Total discharge current (10/350) L1+L2+L3+N->PE	I _{Total}	50 kA
Total discharge current (8/20) L1+L2+L3+N->PE	I _{Total}	100 kA
Nominal discharge current for class II test (8/20) L/N	I _n	20 kA
Nominal discharge current for class II test (8/20) N/PE	I _n	50 kA
Voltage protection level at I _n (L/N)	U_p	< 1.2 kV
Voltage protection level at I _n (N/PE)	U_p	< 1.3 kV
Temporary overvoltage test (TOV) for $t_T = 5 \text{ s (L/N)}$	U_T	335 V
Temporary overvoltage test (TOV) for $t_T = 0.2 \text{ s (N/PE)}$	U_{T}	1 200 V
Response time (L/N)	t _A	< 25 ns
Response time (N/PE)	t _A	< 100 ns
Maximal back-up fuse		160 A gL/gG
Short-circuit current rating at maximum back-up fuse	I _{sccr}	60 kA _{rms}
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

Lightning and surge arresters T1+T2



Minimum cross-section of connected Cu conductors accord. to HD 60364-5-53:2022 S 6 mm² (PE, PEN) (doesn't apply to .\" connection) for T1	Туре		PIVM12,5-275/3+1 Vseries
(doesn't apply to _V* connection) for T2 6 mm² (PE, PEN) Clamp fastening range (solid conductor) 2.5 ÷ 35 mm² Clamp fastening range (stranded conductor) 4 Nm Tightening moment 4 Nm Installation On DIN rail 35 mm Modular width 4 TE Operating position Any Signalling at the device Optic Importance of local signaling OK - green target FAULT - red target Remote signalling No Modular design Yes Article number of spare module 16 055, 16 060 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 ad		S	- () /
Clamp fastening range (stranded conductor) 2.5 ÷ 25 mm² Tightening moment 4 Nm Installation On DIN rail 35 mm Modular width 4 TE Operating position Any Signalling at the device Optic Importance of local signalling OK - green target FAULT - red target Remote signalling No Modular design Yes Article number of spare module 16 058, 16 060 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 Salety 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 618 g Mass m 618 g Mass (including the packaging)		S	
Tightening moment 4 Nm Installation On DIN rail 35 mm Modular width 4 TE Operating position Any Signalling at the device Optic Importance of local signaling OK - green target Femote signalling No Modular design Yes Article number of spare module 16 058, 16 060 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 Mass Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging dimensions (H x W x D) Y	Clamp fastening range (solid conductor)		2.5 ÷ 35 mm ²
Installation On DIN rail 35 mm Modular width 4 TE Operating position Any Signalling at the device Optic Importance of local signaling OK - green target Femote signalling No Modular design Yes Article number of spare module 16 058, 16 060 Lifetime > 100 0000 h Designed according to standards Eequirements 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 UE 94 Protection against lightning IEC 62305:2010 Selection and erection of electrical equipment - Switchgear and controlgear HD 603645-53:2022 Selection and application principles for SPDs connected to low-voltage power systems CLC/TS 61643-12:2009 Ordering, packaging and additional data m 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm 72 x 114 x 88 mm Packaging value V 0.77 cm³ ETIM class EC001457 <td>Clamp fastening range (stranded conductor)</td> <td></td> <td>2.5 ÷ 25 mm²</td>	Clamp fastening range (stranded conductor)		2.5 ÷ 25 mm ²
Modular width 4 TE Operating position Any Signalling at the device Optic Importance of local signalling OK – green target FAULT – red target Remote signalling No Modular design Yes Article number of spare module 16 058, 16 060 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 Selection 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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 8 mm Packaging value Light w x D 77 cml at x 8 cm	Tightening moment		4 Nm
Operating position Any Signalling at the device Optic Importance of local signalling OK - green target FAULT - red target Remote signalling No Modular design Yes Article number of spare module 16 058, 16 060 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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging value V 0.77 dm³ ETIM class EC001457 Customs tariff no. 853	Installation		On DIN rail 35 mm
Signalling at the device Optic Importance of local signaling OK - green target FAULT - red target Remote signalling No Modular design Yes Article number of spare module 16058, 16 060 Lifetime 16058, 16 060 Lifetime 5100 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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code 8590681160541	Modular width		4 TE
Importance of local signaling OK - green target FAULT - red target Remote signalling No Modular design Article number of spare module Lifetime 16 058, 16 060 Lifetime 16 058, 16 060 Lifetime 17 0000 h 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 LIEC 61643-11:2011 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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 1114 x 88 mm Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class Customs tariff no. 85363010 EAN code	Operating position		Any
Remote signalling No Modular design Article number of spare module 16 058, 16 060 Lifetime 5100 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 Ordering, packaging and additional data Mass m 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code 8590681160541	Signalling at the device		Optic
Modular design Article number of spare module Lifetime 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 BIEC 61643-11:2011 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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class Customs tariff no. 8590681160541	Importance of local signaling		
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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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code 8590681160541	Modular design		Yes
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 Ordering, packaging and additional data Mass m 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code	Article number of spare module		16 058, 16 060
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 618 g Mass (including the packaging) Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value V 0.77 dm³ ETIM group ETIM group ETIM class Customs tariff no. 8590681160541	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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) Packaging value V 0.77 dm³ ETIM group ETIM group ETIM class Customs tariff no. 8590681160541	Designed according to standards		
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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 Mass (including the packaging) Packaging dimensions (H x W x D) Packaging value V 0.77 dm³ ETIM group ETIM group 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 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) Packaging value V 0.77 x 114 x 88 mm Packaging value V 0.77 dm³ ETIM group ETIM class EC001457 Customs tariff no. EAN code 8590681160541	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 ETIM group ETIM class CLC/TS 61643-12:2009 M 618 g M 642 g 77 x 114 x 88 mm V 0.77 dm³ EG000021 ETIM class EC001457 Customs tariff no. EAN code 8590681160541	Protection against lightning		IEC 62305:2010
Ordering, packaging and additional data Mass m 618 g Mass (including the packaging) m 642 g Packaging dimensions (H x W x D) 77 x 114 x 88 mm Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code 8590681160541	Selection and erection of electrical equipment – Switchgear and controlgear		HD 60364-5-53:2022
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Packaging value V 0.77 dm³ ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code 8590681160541	Mass (including the packaging)	m	642 g
ETIM group EG000021 ETIM class EC001457 Customs tariff no. 85363010 EAN code 8590681160541	Packaging dimensions (H x W x D)		77 x 114 x 88 mm
ETIM class EC001457 Customs tariff no. 85363010 EAN code 8590681160541	Packaging value	V	0.77 dm ³
Customs tariff no. 85363010 EAN code 8590681160541	ETIM group		EG000021
EAN code 8590681160541	ETIM class		EC001457
	Customs tariff no.		85363010
Art. number 16 054	EAN code		8590681160541
	Art. number		16 054

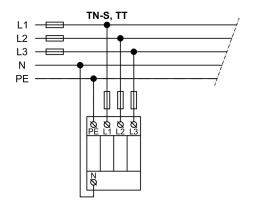


The link in the QR code leads to the online presentation of the **PIVM12,5-275/3+1 Vseries**. There, in addition to the always up-to-date data sheet, you will also find all diagrams and drawings, declarations of conformity, or 2D or 3D models and other necessary materials. For more information, visit **www.hakel.com**





Application wiring diagram (installation)



Internal diagram

