



Singapore
MUN HEAN SINGAPORE PTE LTD
51 Kim Keat Road, Unit 05-01/02
Mun Hean Industrial Building
Singapore 328821
Tel: +65-6250 0522
Fax: +65-6253 6885 / +65-6253 5879
Email: munheansing@munhean.com.sg

Philippines
MH POLY-ELECTROMECHS, INC.
No. 15 N. Domingo St. Brgy. Valencia Hills,
Quezon City 1112 Philippines
Tel: +632-722 1493 / +632-727 8544
Fax: +632-725 3770
Email: mhpoly@munhean.com.ph

China
MUN HEAN HONG FEI (BEIJING) TECHNOLOGY CO., LTD
Room 3-2223, Gold Spring Times
No.317, Datun li, Chaoyang District,
Beijing 100101, China
Tel: +86 10-8483 9722
Fax: +86 10-8483 9721
Email: mhhf@munhean.com.cn

Malaysia
MUN HEAN (MALAYSIA) SDN BHD
No. 15, Jalan SS26/6 Taman Mayang Jaya
47301 Petaling Jaya
Selangor Darul Ehsan, Malaysia
Tel: +603-7804 2288
Fax: +603-7803 1185
Email: munheanmy@munhean.com.my

Indonesia
PT MUNHEAN PUMA PERKASA
Jl. Tanjung Duren Barat I No. 27 - 27A,
Tanjung Duren Utara, Grogol, Petamburan,
Jakarta Barat 11470, Indonesia
Tel: +62 21-5695 8826
Fax: +62 21-567 3671
Email: munheanindo@mhpp-electric.com

Hong Kong
MUN HEAN ELECTRICAL ENGINEERING (HK) CO., LTD
Room 2304, 23/F Kodak House II
39 Healthy Street East, North Point
Hong Kong
Tel: +852-2873 1711
Fax: +852-2518 7013
Email: munheanhk@munhean.com.hk

Taiwan
MH POWER CO., LTD
4th Fl., No. 5 Alley 11,
Lane 327, Chunghe District
New Taipei City, Taiwan, R.O.C.
Tel: +886 2-2242 5501
Fax: +886 2-2246 1694
Email: mhp@mhpower.com.tw

Vietnam
MUN HEAN VIETNAM CO. LTD
68 Nguyen Quy Duc Street,
An Phu Ward, District 2,
Ho Chi Minh City, Vietnam
Tel: +84 8-6281 0819
Fax: +84 8-6281 0815
Email: munheanvn@munhean.com.vn

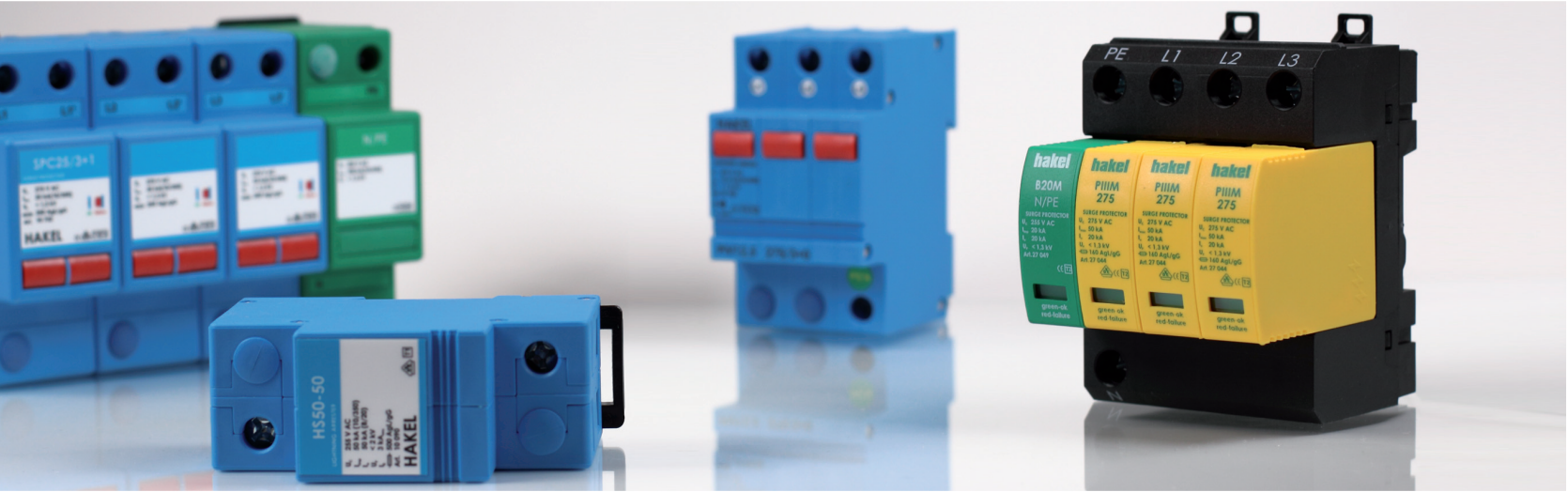
Myanmar
MH POWER MYANMAR CO., LTD
No. 96 Yadanar Myaing Street,
Off Yangon-Insein Road (West Side)
Kamaryut Township, Yangon, Myanmar
Tel: +95 1-505364
Fax: +95 1-505364
Email: mhmyanmar@munhean.com



SPD



H-SPD-18-01-2016-EN-sales





Surge Protection Device



WHY HAKEL ?



MORE THAN 20 YEARS
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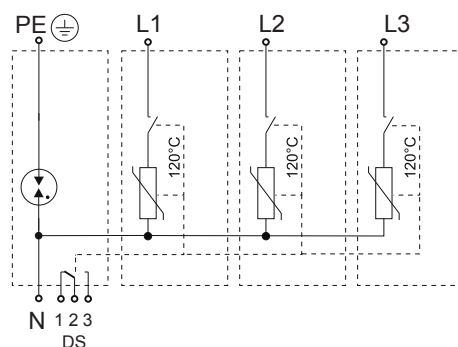
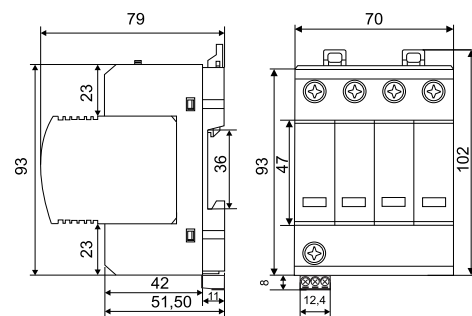
OWN TESTING LABORATORY



WORLDWIDE EXPORT

Lightning and surge arrester / varistor + gas discharge tube / TYPE 1+2

TYPE 1+2 / CLASS I+II / TN-S / TT / Ć

**PIVM7-275/3+1**
PIVM7-275 DS/3+1

PIVM7-275/3+1 **Vseries** is a four-pole, metal oxid varistor lightning and surge arrester, combined with gas discharge tube Type 1+2 according to EN 61643-11 and IEC 61643-11. These arresters are recommended for use in the Lightning Protection Zones Concept at the boundaries of LPZ 0 – 1 (according to IEC 1312-1 and EN 62305 ed.2), where they provide the equipotential bonding and discharge of both, the lightning current and the switching surge, which are generated in power supply systems entering the building. The use of the lightning current arresters PIVM12,5-275/3+1 **Vseries** is mainly in the power supply lines, which are operated as TN-S and TT systems. The main use of PIVM7-275/3+1 **Vseries** arrester is in structures of LPL III – IV according to EN 62305 ed.2.

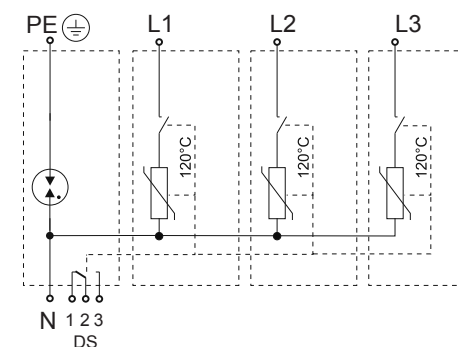
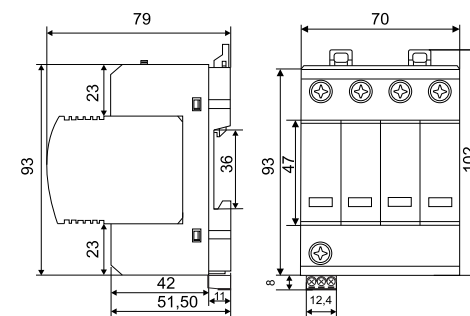
The marking **M** specifies a type of construction with removable module. The marking of **DS** specifies a version with remote monitoring.

Type Vseries		PIVM7-275/3+1, PIVM7-275 DS/3+1
Max. Continuous Operating Voltage	U_C	275 V AC
Lightning Impulse Current (10/350) L/N	I_{imp}	7 kA
- Charge	Q	3,5 As
- Specific Energy	W/R	12 kJ/Ω
Lightning Impulse Current (10/350) N/PE	I_{imp}	25 kA
- Charge	Q	12,5 As
- Specific energy	W/R	156 kJ/Ω
Total Max. Discharge Current (8/20) L1+L2+L3+N→PE	I_{total}	225 kA
Maximal Discharge Current (8/20) L/N	I_{max}	50 kA
Nominal Discharge Current (8/20) L/N	I_n	20 kA
Maximal Discharge Current (8/20) N/PE	I_{max}	75 kA
Nominal Discharge Current (8/20) N/PE	I_n	30 kA
Voltage Protection Level	U_p	< 1,2 kV
Temporary Overvoltage (TOV) L/N	U_T	335 V/5 s
Temporary Overvoltage (TOV) N/PE	U_T	1200 V/0,2 s
Response Time L/N	t_A	< 25 ns
Response Time N/PE	t_A	< 100 ns
Max. back-up fuse		160 A gL/gG
Short-circuit withstand capability at max. back-up fuse 160 A gL/gG	I_p	60 kA _{rms}
Lifetime		min.100 000 h
Weight	m	369 g
Article number		
PIVM7-275/3+1		16 018
PIVM7-275 DS/3+1		16 019



Lightning and surge arrester / varistor + gas discharge tube / TYPE 1+2

TYPE 1+2 / CLASS I+II / TN-S / TT / Ć

**PIVM12,5-275/3+1**
PIVM12,5-275 DS/3+1

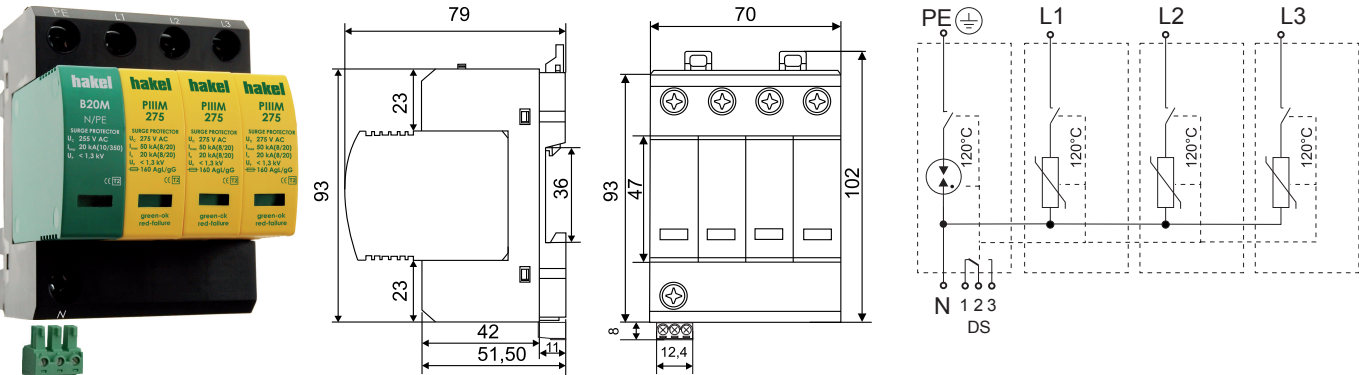
PIVM12,5-275/3+1 **Vseries** is a four-pole, metal oxid varistor lightning and surge arrester, combined with gas discharge tube Type 1+2 according to EN 61643-11 and IEC 61643-11. These arresters are recommended for use in the Lightning Protection Zones Concept at the boundaries of LPZ 0 – 1 (according to IEC 1312-1 and EN 62305 ed.2), where they provide the equipotential bonding and discharge of both, the lightning current and the switching surge, which are generated in power supply systems entering the building. The use of the lightning current arresters PIVM12,5-275/3+1 **Vseries** is mainly in the power supply lines, which are operated as TN-S and TT systems. The main use of PIVM12,5-275/3+1 **Vseries** arrester is in structures of LPL III – IV according to EN 62305 ed.2.

The marking **M** specifies a type of construction with removable module. The marking of **DS** specifies a version with remote monitoring.

Type Vseries		PIVM12,5-275/3+1, PIVM12,5-275 DS/3+1
Max. Continuous Operating Voltage	U_C	275 V AC
Lightning Impulse Current (10/350) L/N	I_{imp}	12,5 kA
- Charge	Q	6,25 As
- Specific Energy	W/R	39 kJ/Ω
Lightning Impulse Current (10/350) N/PE	I_{imp}	50 kA
- Charge	Q	25 As
- Specific energy	W/R	625 kJ/Ω
Total Max. Discharge Current (8/20) L1+L2+L3+N→PE	I_{total}	275 kA
Maximal Discharge Current (8/20) L/N	I_{max}	50 kA
Nominal Discharge Current (8/20) L/N	I_n	20 kA
Maximal Discharge Current (8/20) N/PE	I_{max}	125 kA
Nominal Discharge Current (8/20) N/PE	I_n	50 kA
Voltage Protection Level	U_p	< 1,2 kV
Temporary Overvoltage (TOV) L/N	U_T	335 V/5 s
Temporary Overvoltage (TOV) N/PE	U_T	1200 V/0,2 s
Response Time L/N	t_A	< 25 ns
Response Time N/PE	t_A	< 100 ns
Max. back-up fuse		160 A gL/gG
Short-circuit withstand capability at max. back-up fuse 160 A gL/gG	I_p	60 kA _{rms}
Lifetime		min.100 000 h
Weight	m	536 g
Article number		
PIVM12,5-275/3+1		16 054
PIVM12,5-275 DS/3+1		16 055

Surge arrester / varistor + gas discharge tube / TYPE 2

TYPE 2 / CLASS II / TN-S / TT / CC



PIIM-275/3+1
PIIM-275 DS/3+1

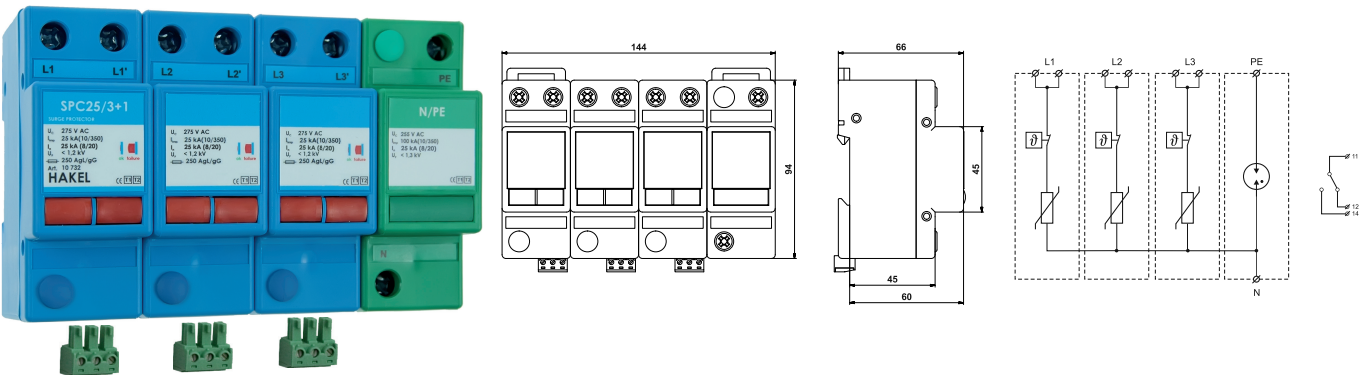
PIIM-275/3+1 **Vseries** is a four-pole, metal oxid varistor surge arrester combined with gas discharge tube, Type 2 according to EN 61643-11 and IEC 61643-11. These arresters are recommended for use in the Lightning Protection Zones Concept at the boundaries of LPZ 1-2 (according to IEC 1312-1 and EN 62305), where they provide the equipotential bonding and discharge of the switching overvoltage, which is generated in power supply systems entering the building. The main use of PIIM-275/3+1 **Vseries** arrester is in all kinds of industry, residential and administration buildings. They are to be placed into the subsidiary switchboards or control boxes.

The marking **M** specifies a type of construction with removable module. The marking of **DS** specifies a version with remote monitoring.

Type Vseries		PIIM-275/3+1, PIIM-275 DS/3+1
Max. Continuous Operating Voltage	U_C	275 V AC
Lightning Impulse Current (10/350) N/PE	I_{imp}	20 kA
Total Max. Discharge Current (8/20) L1+L2+L3+N→PE	I_{total}	200 kA
Maximal Discharge Current (8/20) L/N	I_{max}	50 kA
Nominal Discharge Current (8/20) L/N	I_n	20 kA
Maximal Discharge Current (8/20) N/PE	I_{max}	50 kA
Nominal Discharge Current (8/20) N/PE	I_n	20 kA
Voltage Protection Level at I_n	U_p	< 1,3 kV
Temporary Overvoltage (TOV) L/N	U_t	335 V/5 s
Temporary Overvoltage (TOV) N/PE	U_t	1200 V/0,2 s
Response Time L/N	t_A	< 25 ns
Response Time N/PE	t_A	< 100 ns
Max. back-up fuse		160 A gL/gG
Short-circuit withstand capability at max. back-up fuse 160 A gL/gG	I_p	60 kA _{rms}
Lifetime		min.100 000 h
Weight	m	346 g
Article number		
PIIM-275/3+1		27 022
PIIM-275 DS/3+1		27 023

Lightning and surge arrester / varistor + gas discharge tube / TYPE 1+2

TYPE 1+2 / CLASS I+II / TN-S / TT / CC



SPC25/3+1
SPC25 DS/3+1

SPC25/3+1 is a metal oxid varistor lightning and surge arrester, combined with gas discharge tube Type 1+2 according to EN 61643-11 and IEC 61643-11. These are recommended for use in the Lightning Protection Zones Concept at the boundaries of LPZ 0-1 (according to IEC 1312-1 and EN 62305), where they provide the equipotential bonding and discharge of both, the lightning current and the switching surge, which are generated in power supply systems entering the building. The use of the lightning current arresters SPC25/3+1 is mainly in the power supply lines, which are operated as TN-S and TT systems. The main use of SPC25/3+1 arrester is in structures of LPL I – II according to EN 62305 ed.2.

Double terminals of the device allow the “V” connection at the maximum current-carrying capacity of 125A.

Type		SPC25/3+1, SPC25 DS/3+1
Max. Continuous Operating Voltage	U_C	275 V AC
Lightning Impulse Current (10/350) L/N	I_{imp}	25 kA
- Charge	Q	12,5 As
- Specific Energy	W/R	156 kJ/Ω
Lightning Impulse Current (10/350) N/PE	I_{imp}	100 kA
- Charge	Q	50 As
- Specific energy	W/R	2500 kJ/Ω
Total Max. Discharge Current (8/20) L1+L2+L3+N→PE	I_{total}	350 kA
Maximal Discharge Current (8/20) L/N	I_{max}	50 kA
Nominal Discharge Current (8/20) L/N	I_n	25 kA
Maximal Discharge Current (8/20) N/PE	I_{max}	200 kA
Nominal Discharge Current (8/20) N/PE	I_n	75 kA
Voltage Protection Level at I_n	U_p	< 1,2 kV
Temporary Overvoltage (TOV) L/N	U_t	335 V/5 s
Temporary Overvoltage (TOV) N/PE	U_t	1200 V/0,2 s
Response Time L/N	t_A	< 25 ns
Response Time N/PE	t_A	< 100 ns
Max. back-up fuse		250 A gL/gG
Max. back-up fuse (“V” Connection)		125 A gL/gG
Short-circuit withstand capability at max. back-up fuse 160 A gL/gG	I_p	80 kA _{rms}
Lifetime		min.100 000 h
Weight	m	1125 g
Article number		
SPC25/3+1		10 732
SPC25 DS/3+1		10 632