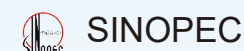




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S-series SPD

T-series SPD

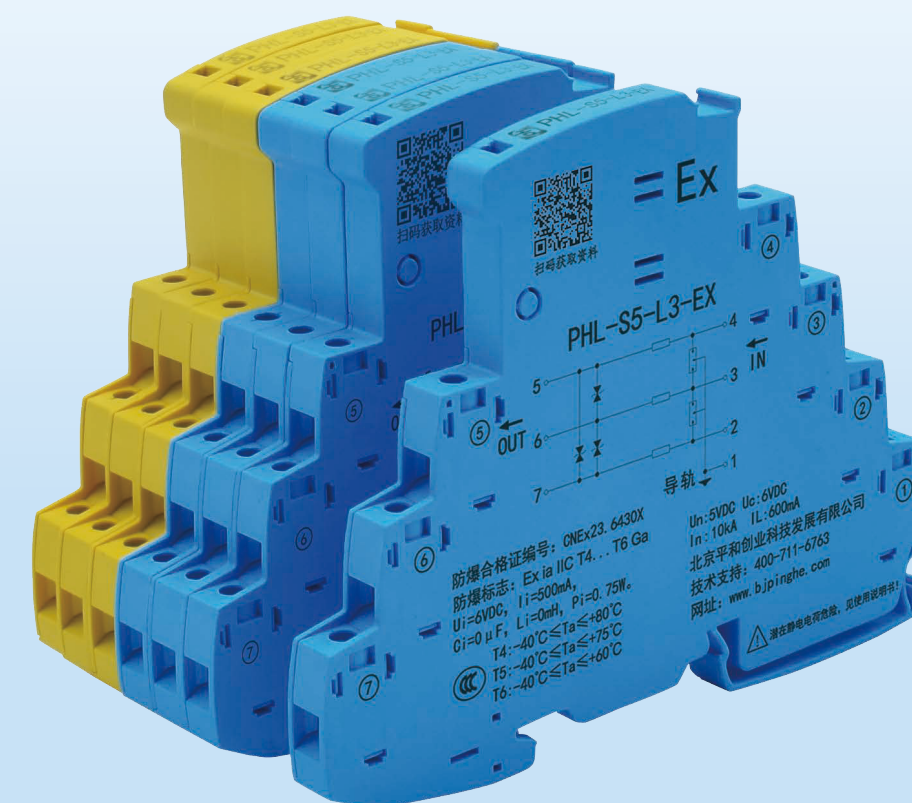
Field instrument SPD

Power supply system SPD

Backup protection device SCB

Network SPD

SURGE PROTECTION DEVICES PRODUCT GUIDE



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Add: Beijing-Tianjin-Hebei Region Zhongnan High-tech Pinghe Intelligent Industrial Park

COMPANY PROFILE



Beijing Pinghe Chuangye Technology Development Co.Ltd, was founded in January 2004, is a national high-tech enterprise dedicated to R&D, production and sales of signal interface modules. Our products such as isolated safety barriers, signal isolators and safety relays etc. are widely used in military, nuclear power, aerospace, petrochemical, metallurgical, energy and environmental protection, shipbuilding, biomedicine industries ; So far, more than 7 million pieces run stable in domestic and foreign markets out excellent quality and outstanding service have been highly recognized and praised by a vast number of partners.

- National High-tech Enterprise
 - Zhongguancun High-Tech Enterprise
 - Specialization, refinement, differentiation, innovation of small and medium-sized enterprise Beijing
 - Beijing New Technology and New Products (Service) Certificate
 - National supervision and inspection product qualified enterprise of stable quality
 - Member of China Association For Pharmaceutical Equipment
 - Member of China Instrument and Control Society
 - Union Research and Development Center of Beijing Research Institute of Automation for Machinery Industry Co., Ltd.
- TÜV Functional safety certification
 - ATEX explosion-proof certification
 - Quality assurance certified according to IECEx Approval
 - EU CE certification
 - Electromagnetic compatibility certification by the US Federal Communications Commission (FCC)
 - Quality assurance certified according to ISO 9001, ISO 14001, ISO 45001
 - National ex-proof electrical product certification
 - China Compulsory Certification for explosion-proof products



EXCELLENT R&D TEAM

Beijing Pinghe benefit from talent and technical advantages of the capital Beijing, our senior engineers account for 60% of the R&D team, and R&D personnel more than 30% of the total number of employees. After 20 years of accumulation, we have obtained multiple patents and independent intellectual property rights, mastered core product technologies, and fully met the needs of process industries and other fields.

We formulate an active innovation strategy, pay attention to the international most advanced technology and direction, and devote ourselves to research and develop lightning protection and explosion-proof solutions that meet higher safety requirements in order to create more added values for customers.

STRICT QUALITY CONTROL SYSTEM

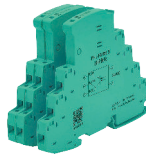
The quality control of Beijing Pinghe implements the "Total Quality Management" system standards, which carry out strict quality control in each process of product design, production and service, and provide customers with qualified and stable products as well as timely and high-quality services. Beijing Pinghe always takes the needs of customer as only service standard, listens to the opinion of customers, pays attention to the changing needs of customers, strengthens the quality management of each process, strives for providing customers with high-quality products and comprehensive services.



Product Catalog

S series intrinsically safe signal SPD									
Product image	Protection type	Model	Number of protective cores	Rated operating current IL	Maximum operating voltage Uc	Nominal discharge current In (8 / 20μs)	Impulse current limp(10/350us)	Is there a failure display	page
	RTD、TC、CAV、RS485 RS422、AI、AO、DI、DO、RS232, etc	PHL-S5-L2-EX. 5KA	2	600mA	6VDC	5kA	0. 5kA	Yes	1
		PHL-S5-L2-EX. 10KA	2	600mA	6VDC	10kA	2kA	Yes	1
		PHL-S5-L3-EX. 5kA	3	600mA	6VDC	5kA	0. 5kA	Yes	1
		PHL-S5-L3-EX. 10kA	3	600mA	6VDC	10kA	2kA	Yes	1
		PHL-S24-L2-EX. 5kA	2	600mA	32VDC	5kA	0. 5kA	Yes	3
		PHL-S24-L2-EX. 10kA	2	600mA	32VDC	10kA	2kA	Yes	3
		PHL-S24-L3-EX. 5kA	3	600mA	32VDC	5kA	0. 5kA	Yes	3
		PHL-S24-L3-EX. 10kA	3	600mA	32VDC	10kA	2kA	Yes	3

S series signal SPD									
Product image	Protection type	Model	Number of protective cores	Rated operating current IL	Maximum operating voltage Uc	Nominal discharge current In (8 / 20μs)	Impulse current limp(10/350us)	Is there a failure display	page
	RTD、TC、CAV、RS485 RS422、AI、AO、DI、DO、RS232, etc	PHL-S5-L2. 5KA	2	1A	6VDC	5kA	0. 5kA	Yes	5
		PHL-S5-L2. 10KA	2	1A	6VDC	10kA	2kA	Yes	5
		PHL-S5-L3. 5KA	3	1A	6VDC	5kA	0. 5kA	Yes	5
		PHL-S5-L3. 10KA	3	1A	6VDC	10kA	2kA	Yes	5
		PHL-S24-L2. 5KA	2	1A	32VDC	5kA	0. 5kA	Yes	7
		PHL-S24-L2. 10KA	2	1A	32VDC	10kA	2kA	Yes	7
		PHL-S24-L3. 5KA	3	1A	32VDC	5kA	0. 5kA	Yes	7
		PHL-S24-L3. 10KA	3	1A	32VDC	10kA	2kA	Yes	7

S series remote signaling module									
Product image	Protection type	Model	Number of protective cores	Rated operating current IL	Maximum operating voltage Uc	Nominal discharge current In (8 / 20μs)	Impulse current limp(10/350us)	Is there a failure display	page
	Remote signaling module	PHL-FMRS. A	-	-	-	-	-	-	9
		PHL-FMRS. B	-	-	-	-	-	-	9

Product Catalog

Small Power Supplies									
Product image	Protection type	Model	Number of protective cores	Rated operating current IL	Maximum operating voltage Uc	Nominal discharge current In (8 / 20μs)	Impulse current limp(10/350us)	Is there a failure display	page
	Small power supply	PHL-S24	-	10A	36VDC	10kA	-	Yes	11
		PHL-T24	-	10A	36VDC	10kA	-	Yes	11

T series intrinsic safe signal SPD									
Product image	Protection type	Model	Number of protective cores	Rated operating current IL	Maximum operating voltage Uc	Nominal discharge current In (8 / 20μs)	Impulse current limp(10/350us)	Is there a failure display	page
	RTD、TC、CAV、RS485 RS422、AI、AO、DI、DO、RS232, etc	PHL-T5-L2-EX	2	600mA	6VDC	10kA	2. 5kA	Optional	13
		PHL-T5-L3-EX	3	600mA	6VDC	10kA	2. 5kA	Optional	13
		PHL-T5-L4-EX	4	600mA	6VDC	10kA	2. 5kA	Optional	13
		PHL-T24-L2-EX	2	600mA	32VDC	10kA	2. 5kA	Optional	15
		PHL-T24-L3-EX	3	600mA	32VDC	10kA	2. 5kA	Optional	15
		PHL-T24-L4-EX	4	600mA	32VDC	10kA	2. 5kA	Optional	15

T series signal SPD									
Product image	Protection type	Model	Number of protective cores	Rated operating current IL	Maximum operating voltage Uc	Nominal discharge current In (8 / 20μs)	Impulse current limp(10/350us)	Is there a failure display	page
	RTD、TC、CAV、RS485 RS422、AI、AO、DI、DO、RS232, etc	PHL-T5-L2	2	1A	6VDC	10kA	2. 5kA	Optional	17
		PHL-T5-L3	3	1A	6VDC	10kA	2. 5kA	Optional	17
		PHL-T5-L4	4	1A	6VDC	10kA	2. 5kA	Optional	17
		PHL-T5-G2	2	1A	6VDC	10kA	2. 5kA	Optional	19
		PHL-T5-G3	3	1A	6VDC	10kA	2. 5kA	Optional	19
		PHL-T5-G4	4	1A	6VDC	10kA	2. 5kA	Optional	19
		PHL-T24-L2	2	1A	32VDC	10kA	2. 5kA	Optional	21
		PHL-T24-L3	3	1A	32VDC	10kA	2. 5kA	Optional	21
		PHL-T24-L4	4	1A	32VDC	10kA	2. 5kA	Optional	21
		PHL-T24-G2	2	1A	32VDC	10kA	2. 5kA	Optional	23
		PHL-T24-G3	3	1A	32VDC	10kA	2. 5kA	Optional	23
		PHL-T24-G4	4	1A	32VDC	10kA	2. 5kA	Optional	23

Product Catalog

Field instrument SPD								
Product image	Protection type	Model	Number of protective cores	Thread specification	Maximum operating voltage Uc	Nominal discharge current In (8 / 20μs)	Impulse current limp(10/350us)	page
	RTD、TC、CAV、RS485 RS422、AI、AO、DI、 DO、RS232, etc	PHL-TX24-P2-*--EX	2	Optional	35VDC	10kA	2. 5kA	25
		PHL-TX24-P3-*--EX	3	Optional	35VDC	10kA	2. 5kA	25
		PHL-TX24-P4-*--EX	4	Optional	35VDC	10kA	2. 5kA	25
		PHL-TX24-S2-*--EX	2	Optional	32VDC	10kA	2kA	27
		PHL-TX24-S3-*--EX	3	Optional	32VDC	10kA	2kA	27
		PHL-TX24-S4-*--EX	4	Optional	32VDC	10kA	2kA	27

Power supply system DC SPD							
Product image	Protection type	Model	Maximum operating voltage Uc	Recommended backup protection fuse	Nominal discharge current In (8 / 20μs)	The maximum discharge current (8 / 20μs)	page
	24VDC Power system	PHL-TA-24	24VDC	80A gG	20kA	40kA	29
	110VDC Power system	PHL-TA-110	110VDC	80A gG	20kA	40kA	29
	220VDC Power system	PHL-TA-220	220VDC	80A gG	20kA	40kA	29

Power supply system photovoltaic SPD							
Product image	Protection type	Model	Maximum operating voltage Uc	Recommended backup protection fuse	Nominal discharge current In (8 / 20μs)	The maximum discharge current (8 / 20μs)	page
	1000VDC photovoltaic system	PHL-TA-1000PV	1000VDC	80A gG	20kA	40kA	31
	1500VDC photovoltaic system	PHL-TA-1500PV	1500VDC	80A gG	20kA	40kA	31

Product Catalog

Power supply system T2 class AC SPD （20kA/40kA/80kA/100kA/160kA）							
Product image	Protection type	Model	Maximum operating voltage Uc	Recommended backup protection fuse	Nominal discharge current In (8 / 20μs)	The maximum discharge current (8 / 20μs)	page
	Single item two line	PHL-TA-20/385/2P	385VAC	32A gG	10kA	20kA	33
	Three phase four wire (TN-C system) Three phase three wire (IT system)	PHL-TA-20/385/3P	385VAC	32A gG	10kA	20kA	33
	Three phase five wire (TN-S system)	PHL-TA-20/385/4P	385VAC	32A gG	10kA	20kA	33
	Single phase (TT system)	PHL-TA-20/385/1P+N	385VAC	32A gG	10kA	20kA	35
	Three phase four wire (TT system)	PHL-TA-20/385/3P+N	385VAC	32A gG	10kA	20kA	35
	Single item two line	PHL-TA-40/385/2P	385VAC	63A gG	20kA	20kA	37
	Three phase four wire (TN-C system) Three phase three wire (IT system)	PHL-TA-40/385/3P	385VAC	63A gG	20kA	40kA	37
	Three phase five wire (TN-S system)	PHL-TA-40/385/4P	385VAC	63A gG	20kA	40kA	37
	Single phase (TT system)	PHL-TA-40/385/1P+N	385VAC	63A gG	20kA	40kA	39
	Three phase four wire (TT system)	PHL-TA-40/385/3P+N	385VAC	63A gG	20kA	40kA	39
	Single item two line	PHL-TA-80/385/2P	385VAC	100A gG	40kA	80kA	41
	Three phase four wire (TN-C system) Three phase three wire (IT system)	PHL-TA-80/385/3P	385VAC	100A gG	40kA	80kA	41
	Three phase five wire (TN-S system)	PHL-TA-80/385/4P	385VAC	100A gG	40kA	80kA	41
	Single phase (TT system)	PHL-TA-80/385/1P+N	385VAC	100A gG	40kA	80kA	43
	Three phase four wire (TT system)	PHL-TA-80/385/3P+N	385VAC	100A gG	60kA	80kA	43

Product Catalog

Power supply system T2 class AC SPD（20kA/40kA/80kA/100kA/160kA）							
Product image	Protection type	Model	Maximum operating voltage Uc	Recommended backup protection fuse	Nominal discharge current In (8 / 20μs)	The maximum discharge current (8 / 20μs)	page
	Single item two line	PHL-TA-100/385/2P	385VAC	125A gG	60kA	100kA	45
	Three phase four wire (TN-C system) Three phase three wire (IT system)	PHL-TA-100/385/3P	385VAC	125A gG	60kA	100kA	45
	Three phase five wire (TN-S system)	PHL-TA-100/385/4P	385VAC	125A gG	60kA	100kA	45
	Single phase (TT system)	PHL-TA-100/385/1P+N	385VAC	125A gG	60kA	100kA	47
	Three phase four wire (TT system)	PHL-TA-100/385/3P+N	385VAC	125A gG	60kA	100kA	47
	Single item two line	PHL-TA-160/385/2P	385VAC	160A gG	100kA	160kA	49
	Three phase four wire (TN-C system) Three phase three wire (IT system)	PHL-TA-160/385/3P	385VAC	160A gG	100kA	160kA	49
	Three phase five wire (TN-S system)	PHL-TA-160/385/4P	385VAC	160A gG	100kA	160kA	49
	Single phase (TT system)	PHL-TA-160/385/1P+N	385VAC	160A gG	100kA	160kA	51
	Three phase four wire (TT system)	PHL-TA-160/385/3P+N	385VAC	160A gG	100kA	160kA	51

Power supply system T1 class AC SPD（15kA/25kA）							
Product image	Protection type	Model	Maximum operating voltage Uc	Recommended backup protection fuse	Surge current Limp(10/350us)		page
	Single item two line	PHL-TA-15/420/2P	420VDC	160A gG	15kA		53
	Three phase four wire (TN-C system) Three phase three wire (IT system)	PHL-TA-15/420/3P	420VDC	160A gG	15kA		53
	Three phase five wire (TN-S system)	PHL-TA-15/420/4P	420VDC	160A gG	15kA		53
	Single phase (TT system)	PHL-TA-15/420/1P+N	420VDC	160A gG	15kA		55
	Three phase four wire (TT system)	PHL-TA-15/420/3P+N	420VDC	160A gG	15kA		55

Product Catalog

Power supply system T1 class AC SPD（15kA/25kA）							
Product image	Protection type	Model	Maximum operating voltage Uc	Recommended backup protection fuse	Surge current Limp(10/350us)		page
	Single item two line	PHL-TA-25/420/2P	420VDC	250A gG	25kA		57
	Three phase four wire (TN-C system) Three phase three wire (IT system)	PHL-TA-25/420/3P	420VDC	250A gG	25kA		57
	Three phase five wire (TN-S system)	PHL-TA-25/420/4P	420VDC	250A gG	25kA		57
	Single phase (TT system)	PHL-TA-25/420/1P+N	420VDC	250A gG	25kA		59
	Three phase four wire (TT system)	PHL-TA-25/420/3P+N	420VDC	250A gG	25kA		59

Backup protection device T2 SCB(20kA/40kA/80kA/100kA/160kA)							
Product image	Model	Rated operating voltage	The maximum discharge current	Nominal discharge current In	Rated short-circuit capability		page
	PHSCB-20/1P	230/400VAC	20kA	10kA	25kA		61
	PHSCB-20/2P	230/400VAC	20kA	10kA	25kA		61
	PHSCB-20/3P	230/400VAC	20kA	10kA	25kA		61
	PHSCB-20/4P	230/400VAC	20kA	10kA	25kA		61
	PHSCB-40/1P	230/400VAC	40kA	20kA	50kA		61
	PHSCB-40/2P	230/400VAC	40kA	20kA	50kA		61
	PHSCB-40/3P	230/400VAC	40kA	20kA	50kA		61
	PHSCB-40/4P	230/400VAC	40kA	20kA	50kA		61

Product Catalog

Backup protection device T2 SCB(20kA/40kA/80kA/100kA/160kA)						
Product image	Model	Rated operating voltage	The maximum discharge current	Nominal discharge current In	Rated short-circuit capability	page
	PHSCB-80/1P	230/400VAC	80kA	40kA	50kA	61
	PHSCB-80/2P	230/400VAC	80kA	40kA	50kA	61
	PHSCB-80/3P	230/400VAC	80kA	40kA	50kA	61
	PHSCB-80/4P	230/400VAC	80kA	40kA	50kA	61
	PHSCB-100/1P	230/400VAC	100kA	50kA	100kA	63
	PHSCB-100/2P	230/400VAC	100kA	50kA	100kA	63
	PHSCB-100/3P	230/400VAC	100kA	50kA	100kA	63
	PHSCB-100/4P	230/400VAC	100kA	50kA	100kA	63
	PHSCB-160/1P	230/400VAC	160kA	80kA	160kA	63
	PHSCB-160/2P	230/400VAC	160kA	80kA	160kA	63
	PHSCB-160/3P	230/400VAC	160kA	80kA	160kA	63
	PHSCB-160/4P	230/400VAC	160kA	80kA	160kA	63

Backup protection device T1 SCB(15kA/25kA)						
Product image	Model	Rated operating voltage	Maximum impulse current Limp	Nominal discharge current In	Rated short-circuit capability	page
	PHSCB-15/1P	230/400VAC	15kA	80kA	100kA	65
	PHSCB-15/2P	230/400VAC	15kA	80kA	100kA	65
	PHSCB-15/3P	230/400VAC	15kA	80kA	100kA	65
	PHSCB-15/4P	230/400VAC	15kA	80kA	100kA	65

Product Catalog

Backup protection device T1 SCB(15kA/25kA)						
Product image	Model	Rated operating voltage	Maximum impulse current Limp	Nominal discharge current In	Rated short-circuit capability	page
	PHSCB-25/1P	230/400VAC	25kA	80kA	100kA	65
	PHSCB-25/2P	230/400VAC	25kA	80kA	100kA	65
	PHSCB-25/3P	230/400VAC	25kA	80kA	100kA	65
	PHSCB-25/4P	230/400VAC	25kA	80kA	100kA	65

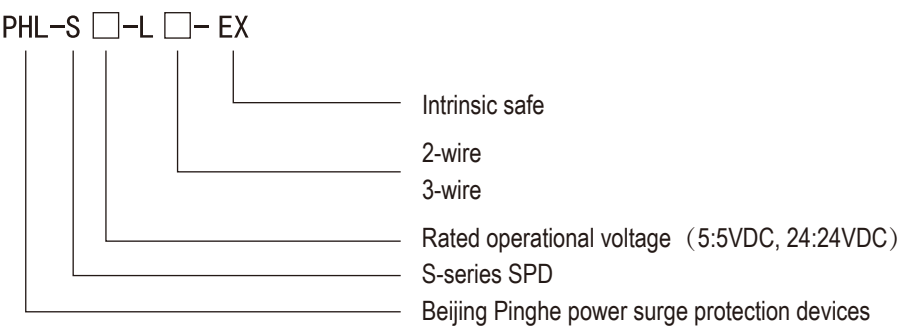
Lightning Protection Intelligent Detection Module			
Product image	Protection type	Model	page
	Lightning Protection Intelligent Detection Module	PHL-J1-01A	67
	Lightning Protection Intelligent Detection Module	PHL-J1-06A	69

Product Catalog

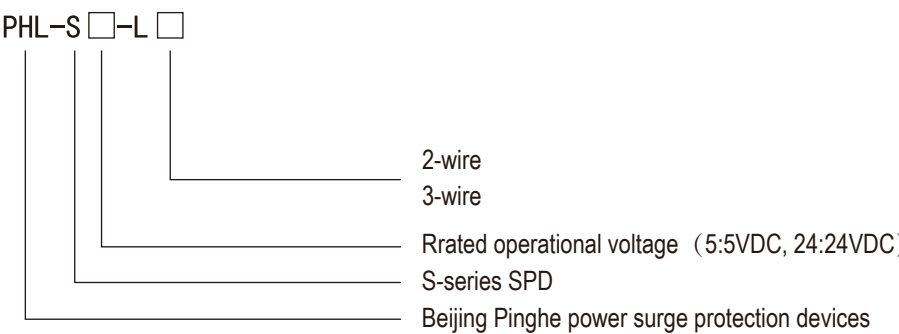
Network SPD							
Product image	Protection type	Model	Nominal working voltage(Un)	Nominal discharge current In (8 / 20μs)	Protection voltage Up	Type	page
	Power network control 2-in-1	PHL-12/D05J4	Network:5VDC Power supply:12VAC/DC	20kA	Network≤20V Power supply: ≤60V	Network Power supply	73
		PHL-24/D05J4	Network:5VDC power supply:24VAC/DC	20kA	Network≤35V Power supply: ≤300V	Network Power supply	73
		PHL-220/D05J4	Network:5VDC Power supply:220VAC/DC	20kA	Network≤35V Power supply: < 1.5kV	Network Power supply	73
	Power network control 3-in-1	PHL-220/D05J4/D12Y2	Network:5VDC Power supply:220VAC/DC	20kA	Network≤35V Power supply: < 1.5kV	Network Power supply	75
	Telephone system	PHL-T-RJ11	110VAC	5kA	<320V	Telephone	77
	Fast Ethernet	PHL-T-RJ45	5VDC	10kA	≤35V	Ethernet	79
	Gigabit Ethernet	PHL-T-RJ45. CAT6	5VDC	20kA	≤35V	Ethernet	81
	Active Ethernet	PHL-T-RJ45. PoE	5VDC	20kA	<75V	Ethernet	83
	Video monitoring system	PHL-T-BNC	5VDC	20kA	<45V	Video	85
	Gigabit Ethernet -24	PH1U/LAN-1000. 24	5VDC	10kA	≤25V	Ethernet	87

Classification of power protection products

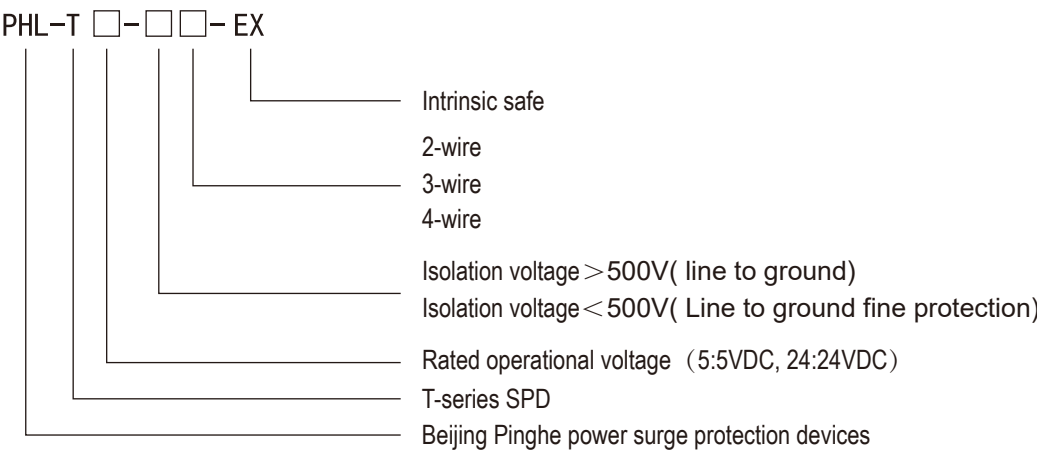
S series intrinsically safe signal SPD Model code definition



S series signal SPD Model code definition

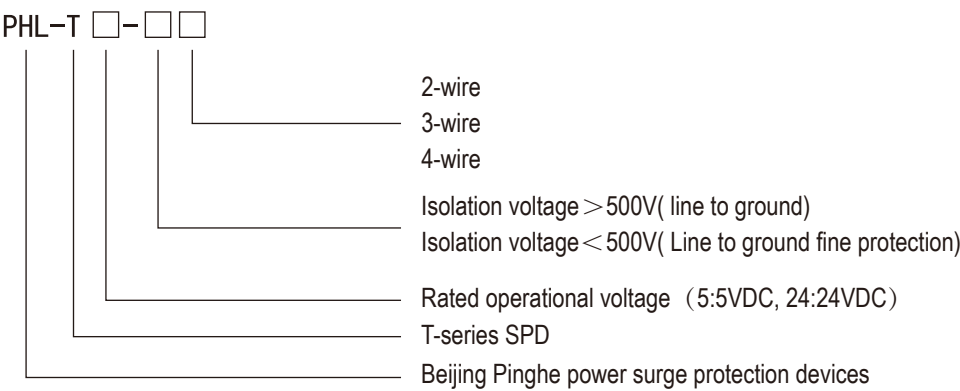


T series intrinsic safe signal SPD Model code definition

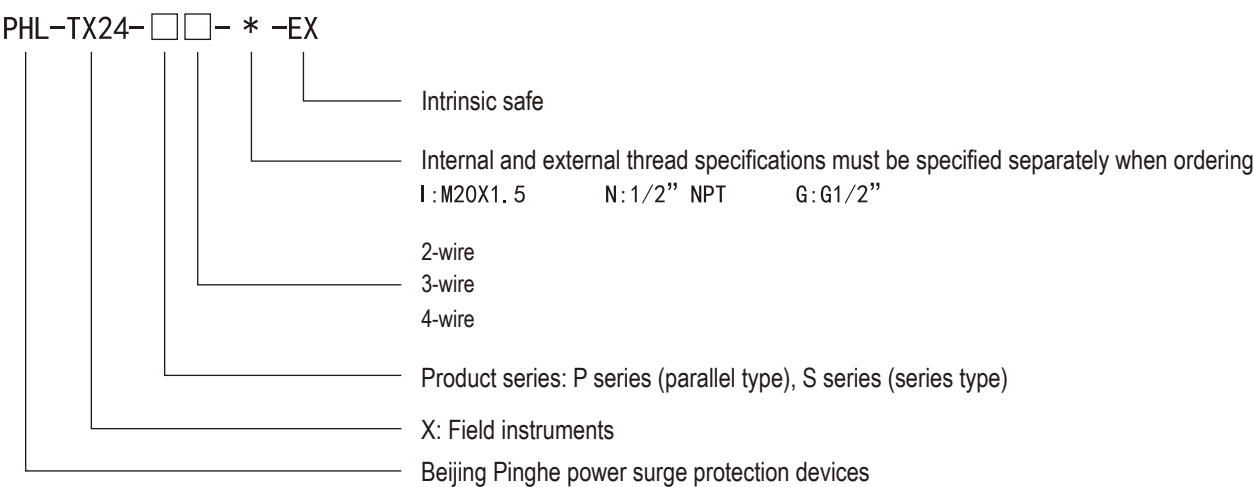


Classification of power protection products

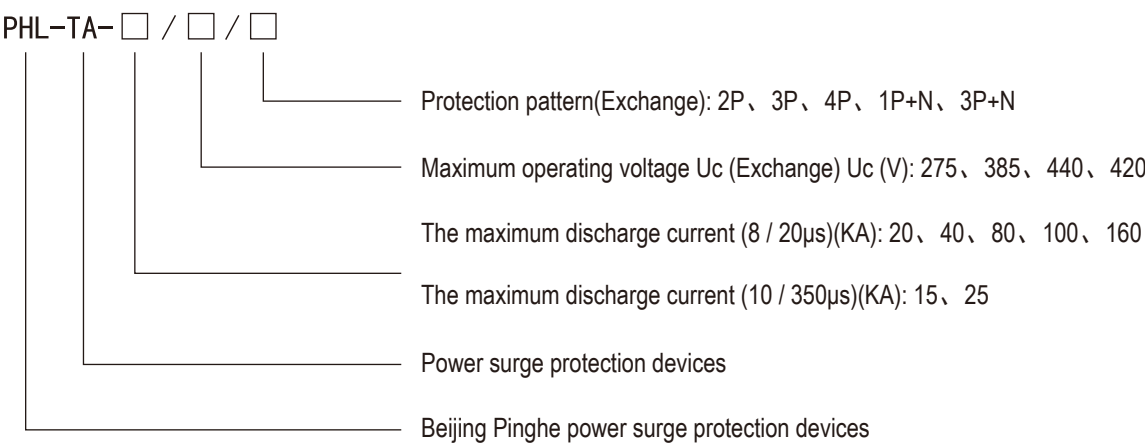
T series signal SPD Model code definition



Field instrument SPD Model code definition

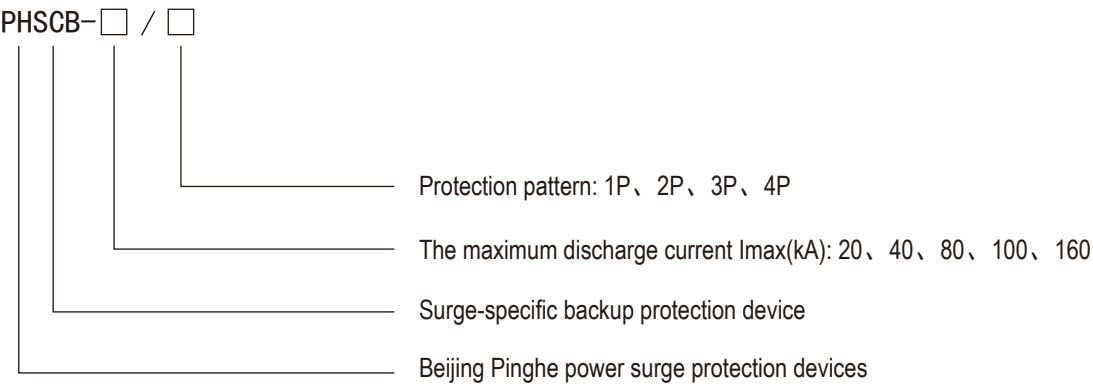


Power supply system DC SPD Model code definition

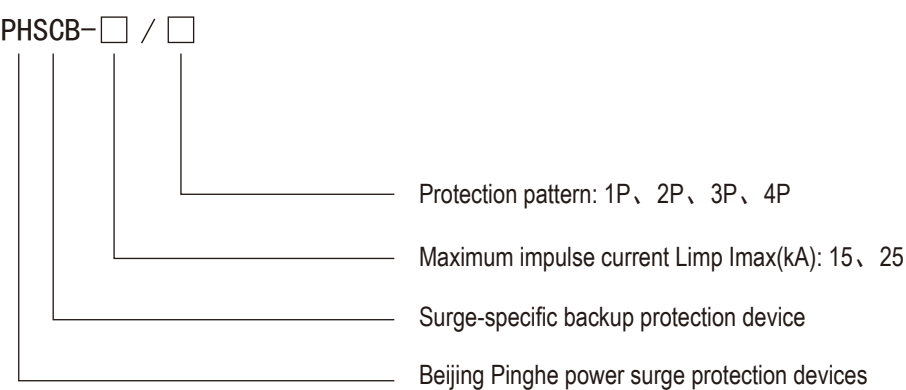


Classification of power protection products

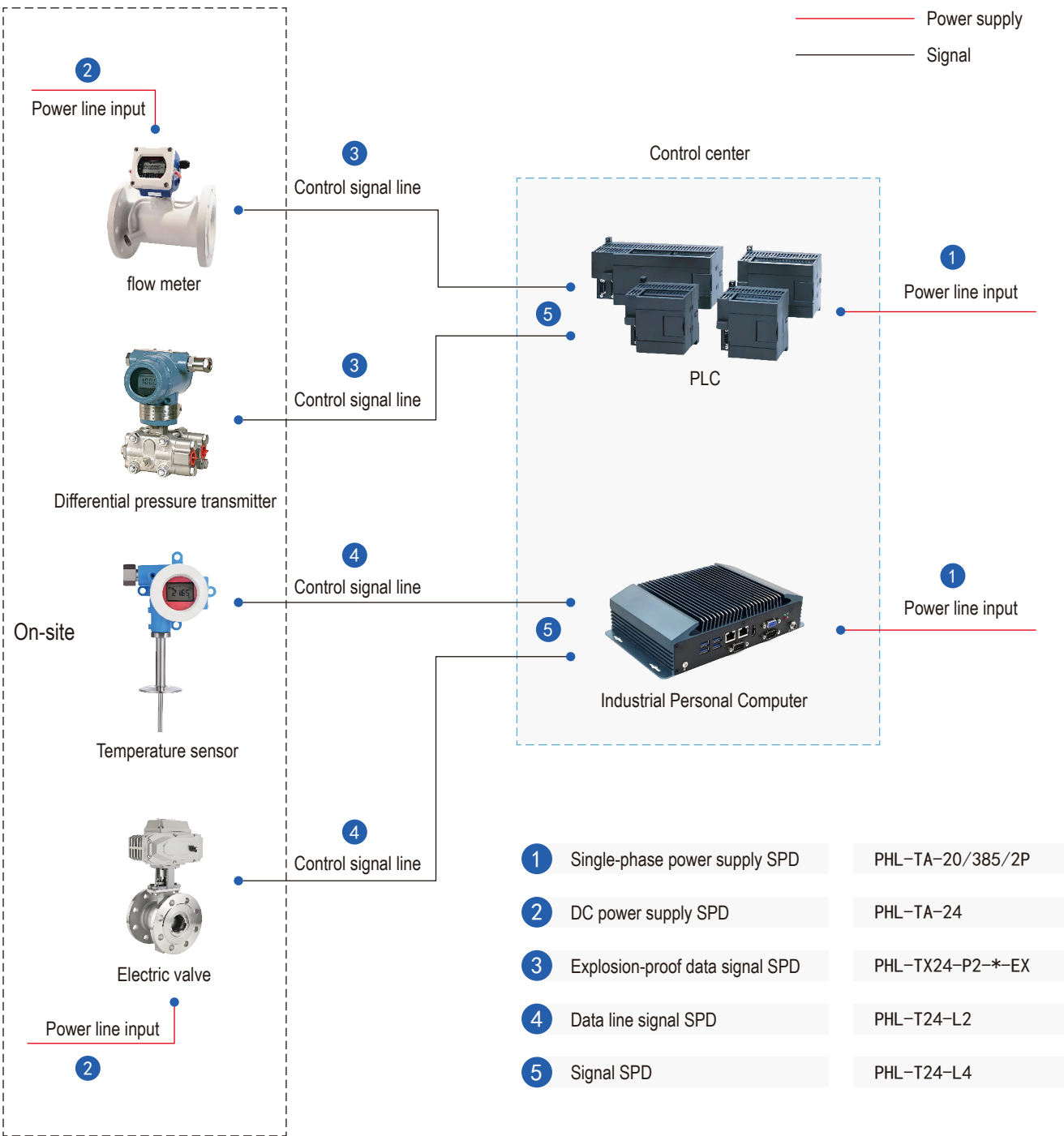
Backup protection device T2 SCB Model code definition



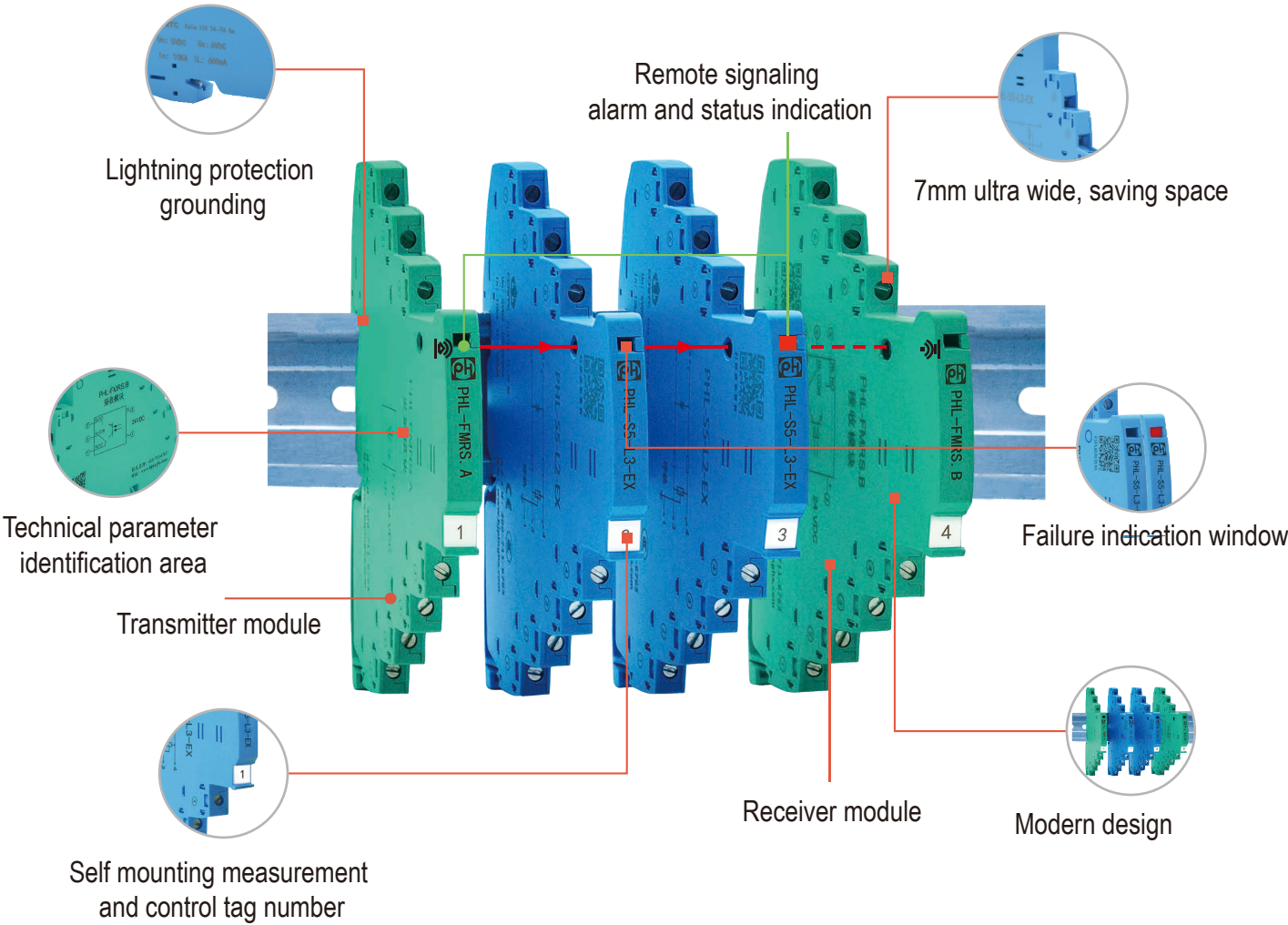
Backup protection device T1 SCB Model code definition



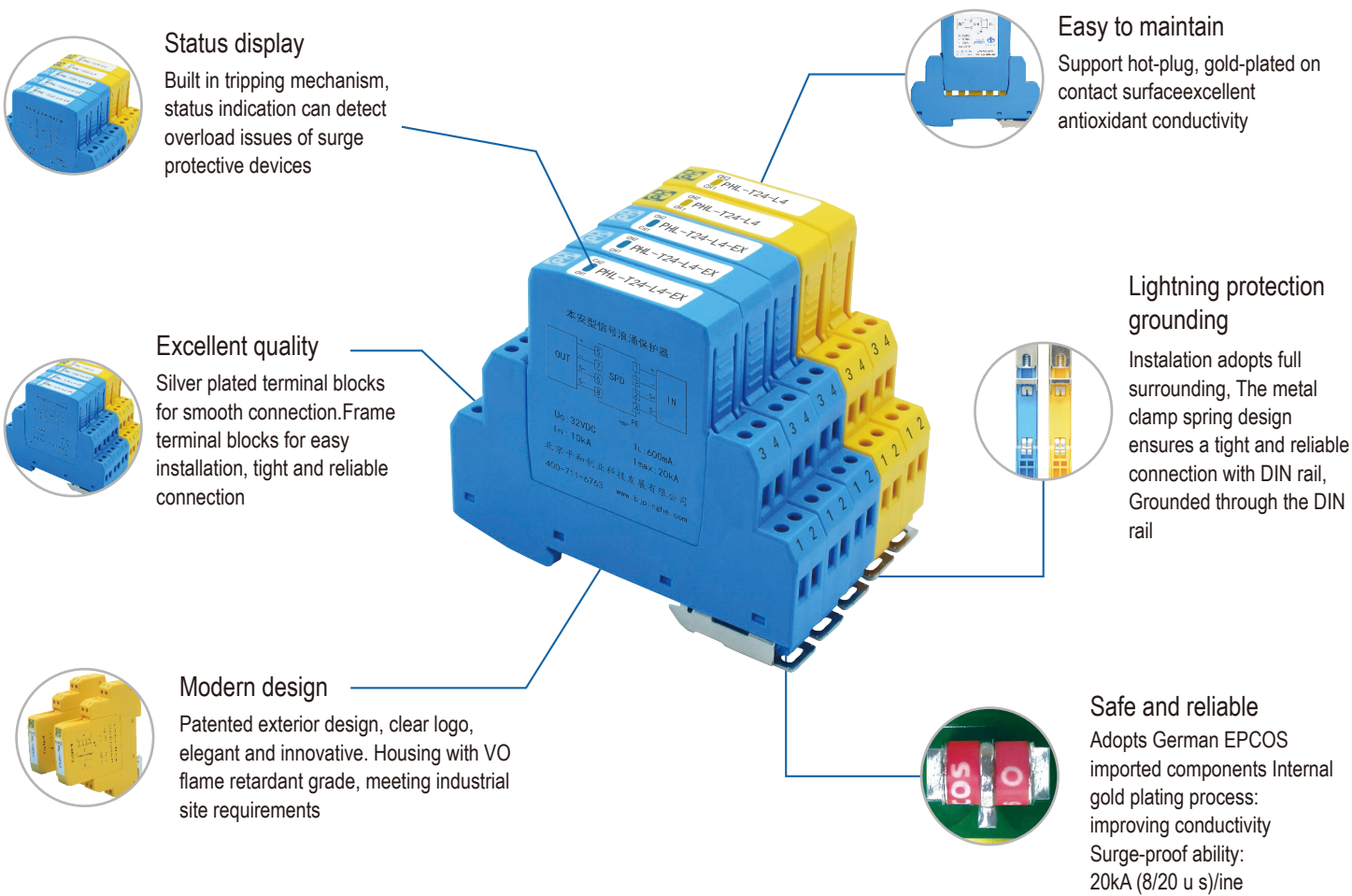
Lightning Protection Solutions for Industrial Control Systems



PRODUCT
FEATURES

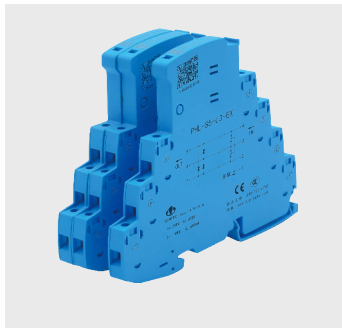


SIL3
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国家防爆





Product overview

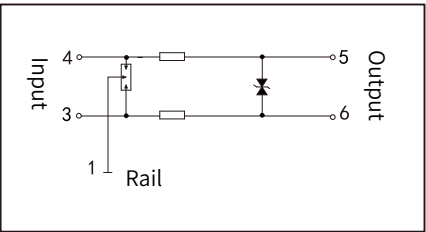
PHL-S series SPD is mainly used to protect on-site equipment such as transmitters, switches, frequency signals, communication equipment, thermal resistors, thermocouples, and control room I/O, DCS, PLC, etc. connected in a two wire or three wire system, from damage caused by lightning surge surge voltage or operating overvoltage. The main features are:

1. With failure window diagnosis function
2. 7mm ultra-thin, space saving;
3. High bandwidth, low insertion loss, suitable for various signals

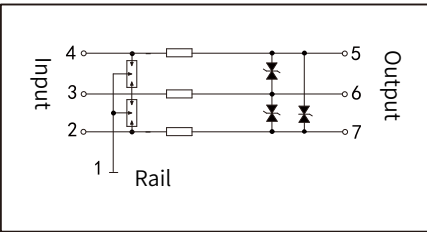
Technical data

Technical data	Two-wire		Three-wire	
	PHL-S5-L2-EX.5kA	PHL-S5-L2-EX.10kA	PHL-S5-L3-EX.5kA	PHL-S5-L3-EX.10kA
Nominal discharge current I_n (8 / 20 μ s)	5kA	10kA	5kA	10kA
The maximum discharge current (8 / 20 μ s)	10kA	20kA	10kA	20kA
Lightning surge current I_{imp} (10 / 350 μ s)	0.5kA	2kA	0.5kA	2kA
Total lightning surge current (10 / 350 μ s)	1kA	4kA	1.5kA	6kA
Rated operating voltage U_n	5V		5V	
Maximum operating voltage U_c	6V		6V	
Nominal operating current I_L	600mA		600mA	
Protection voltage U_p (8 / 20 μ s) line-to-line / line to ground	40V/600V		40V/600V	
Protection voltage U_p (1KV / μ s) line to line / line to ground	20V/600V		20V/600V	
Bandwidth (-0.5dB)	10MHz		10MHz	
Response time	1ns		1ns	
Series resistance (per line)	1 Ω		1 Ω	
Leakage current	< 10 μ A		< 10 μ A	
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20		IP 20	
Housing material / Flame retardant grade (the UL94)	PC/V0		PC/V0	
Test standard	GB/T 18802.21 / IEC61643-21		GB/T 18802.21 / IEC61643-21	
Explosion-proof certifications	EX ia II C T4-T6 Ga		EX ia II C T4-T6 Ga	
Working temperature range	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C		-40 $^{\circ}$ C ~ +80 $^{\circ}$ C	

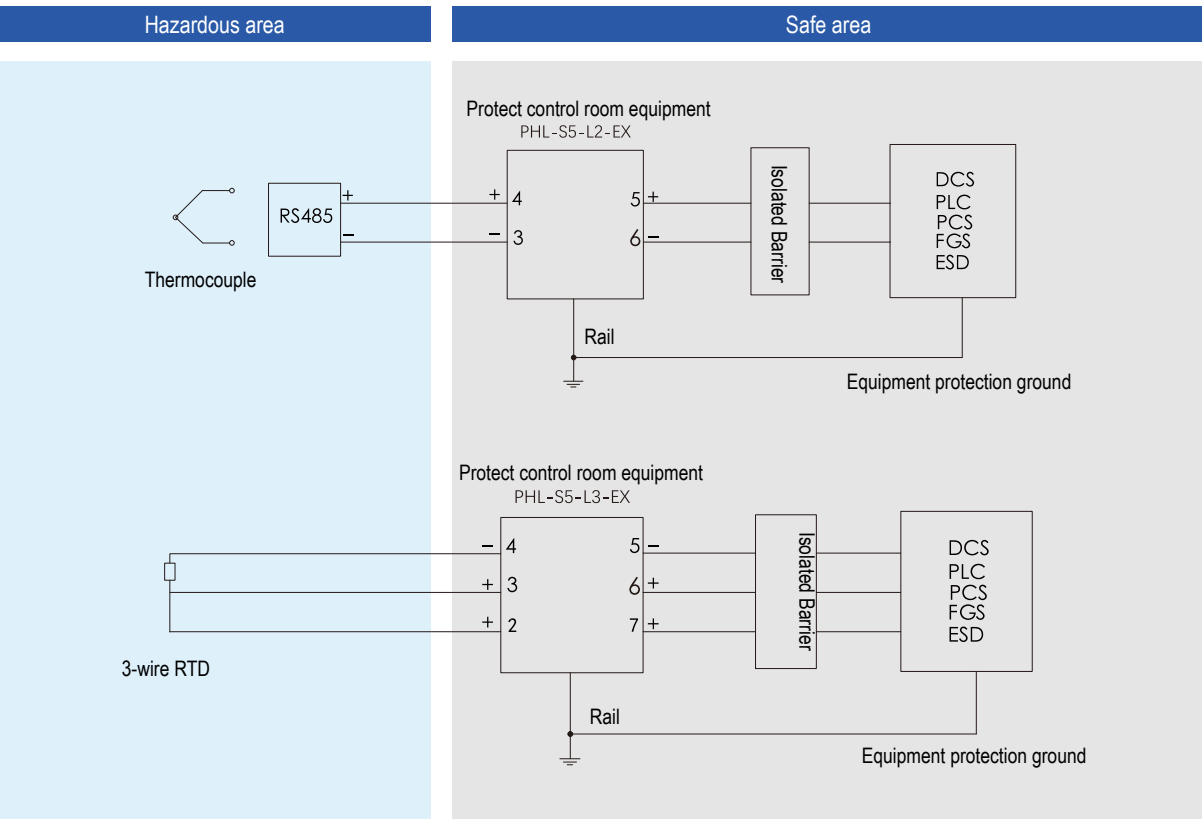
PHL-S5-L2-EX



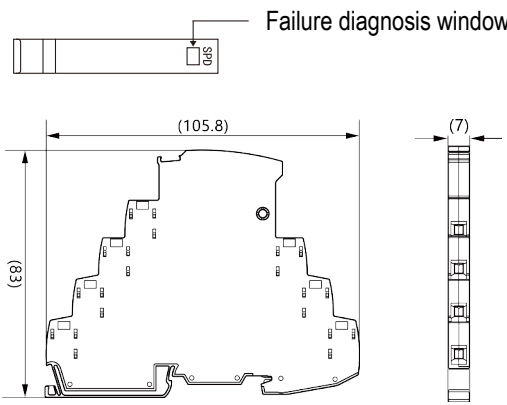
PHL-S5-L3-EX

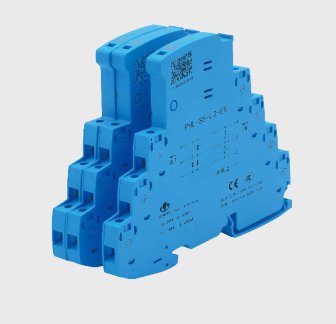


Schematic diagram



Dimension drawings





Product overview

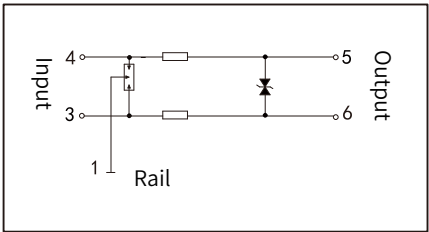
PHL-S series SPD is mainly used to protect on-site equipment such as transmitters, switches, frequency signals, communication equipment, thermal resistors, thermocouples, and control room I/O, DCS, PLC, etc. connected in a two wire or three wire system, from damage caused by lightning surge surge voltage or operating overvoltage. The main features are:

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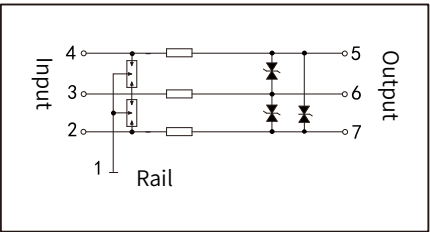
Technical data

Technical data	Two-wire		Three-wire	
Technical data	PHL-S24-L2-EX.5kA	PHL-S24-L2-EX.10kA	PHL-S24-L3-EX.5kA	PHL-S24-L3-EX.10kA
Nominal discharge current In (8 / 20μs)	5kA	10kA	5kA	10kA
The maximum discharge current (8 / 20μs)	10kA	20kA	10kA	20kA
Lightning surge current limp (10 / 350μs)	0.5kA	2kA	0.5kA	2kA
Total lightning surge current (10 / 350μs)	1kA	4kA	1.5kA	6kA
Rated operating voltage Un	24V		24V	
Maximum operating voltage Uc	32V		32V	
Nominal operating current IL	600mA		600mA	
Protection voltage Up (8 / 20μs) line-to-line / line to ground	60V/600V		60V/600V	
Protection voltage Up (1KV / μs) line to line / line to ground	60V/600V		60V/600V	
Bandwidth (-0.5dB)	10MHz		10MHz	
Response time	1ns		1ns	
Series resistance (per line)	1Ω		1Ω	
Leakage current	< 1μA		< 1μA	
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20		IP 20	
Housing material / Flame retardant grade (the UL94)	PC/V0		PC/V0	
Test standard	GB/T 18802.21 / IEC61643-21		GB/T 18802.21 / IEC61643-21	
Explosion-proof certifications	EX ia II C T4-T6 Ga		EX ia II C T4-T6 Ga	
Working temperature range	-40 °C ~ +80 °C		-40 °C ~ +80 °C	

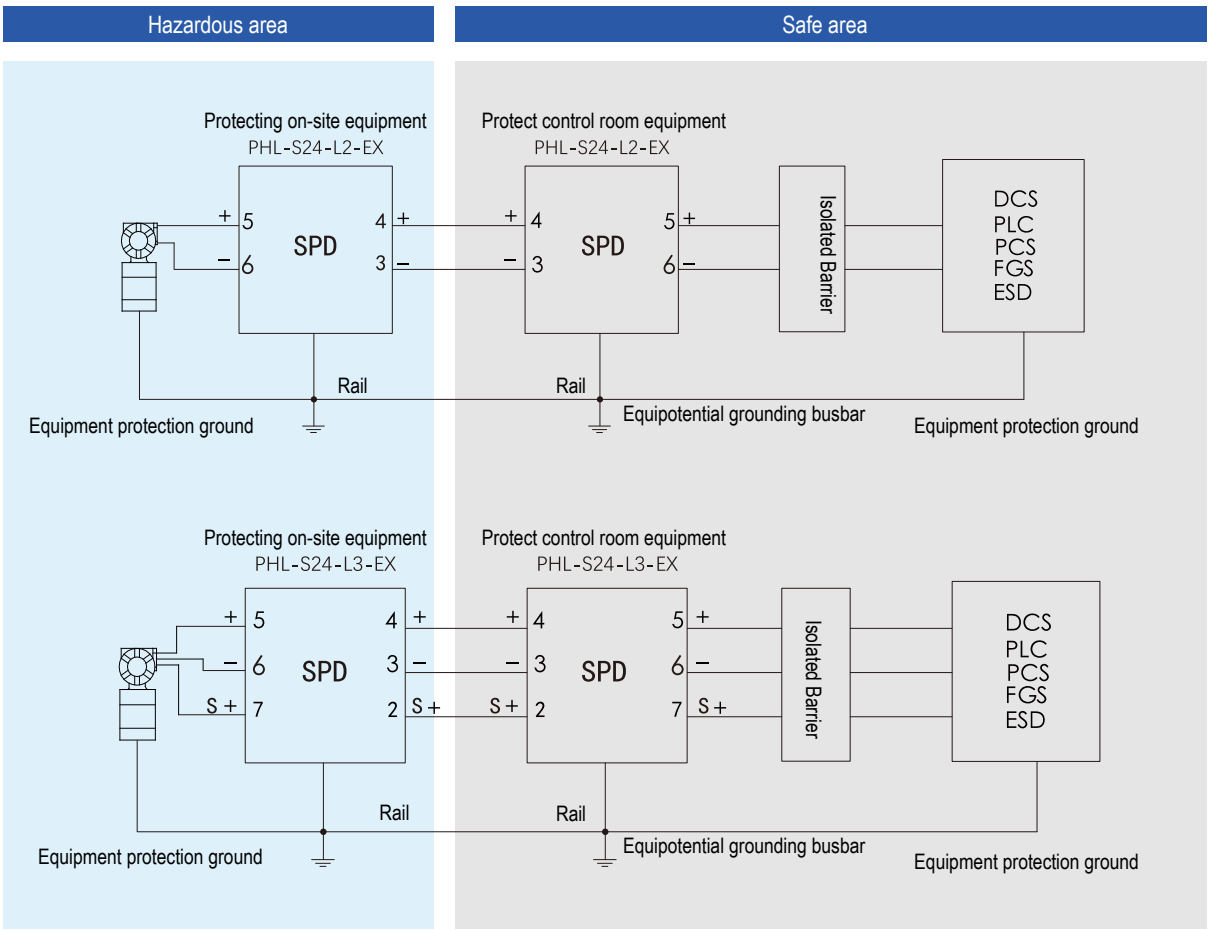
PHL-S24-L2-EX



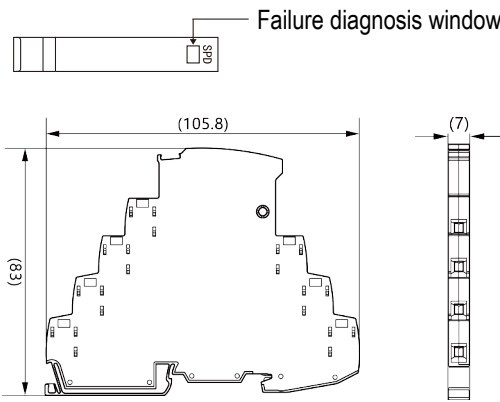
PHL-S24-L3-EX

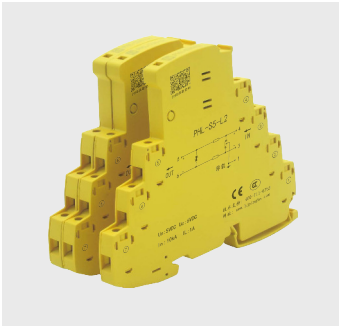


Schematic diagram



Dimension drawings





Product overview

PHL-S series SPD is mainly used to protect on-site equipment such as transmitters, switches, frequency signals, communication equipment, thermal resistors, thermocouples, and control room I/O, DCS, PLC, etc. connected in a two wire or three wire system, from damage caused by lightning surge surge voltage or operating overvoltage. The main features are:

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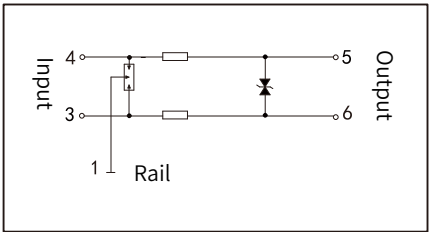
Technical data

Two-wire

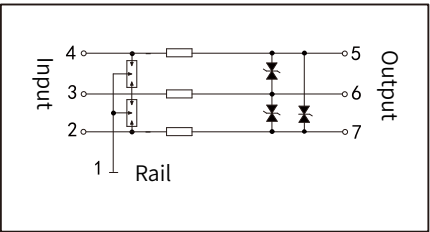
Three-wire

Technical data	PHL-S5-L2.5kA	PHL-S5-L2.10kA	PHL-S5-L3.5kA	PHL-S5-L3.10kA
Nominal discharge current In (8 / 20μs)	5kA	10kA	5kA	10kA
The maximum discharge current (8 / 20μs)	10kA	20kA	10kA	20kA
Lightning surge current Iimp (10 / 350μs)	0.5kA	2kA	0.5kA	2kA
Total lightning surge current (10 / 350μs)	1kA	4kA	1.5kA	6kA
Rated operating voltage Un		5V		5V
Maximum operating voltage Uc		6V		6V
Nominal operating current IL		1A		1mA
Protection voltage Up (8 / 20μs) line-to-line / line to ground		40V/600V		40V/600V
Protection voltage Up (1KV / μs) line to line / line to ground		20V/600V		20V/600V
Bandwidth (-0.5dB)		10MHz		10MHz
Response time		1ns		1ns
Series resistance (per line)		1Ω		1Ω
Leakage current		<10μA		<10μA
Degrees of protection provided by enclosure (in line with IEC 60529)		IP 20		IP 20
Housing material / Flame retardant grade (the UL94)		PC/V0		PC/V0
Test standard		GB/T 18802.21 / IEC61643-21		GB/T 18802.21 / IEC61643-21
Working temperature range		-40 °C ~ +80 °C		-40 °C ~ +80 °C

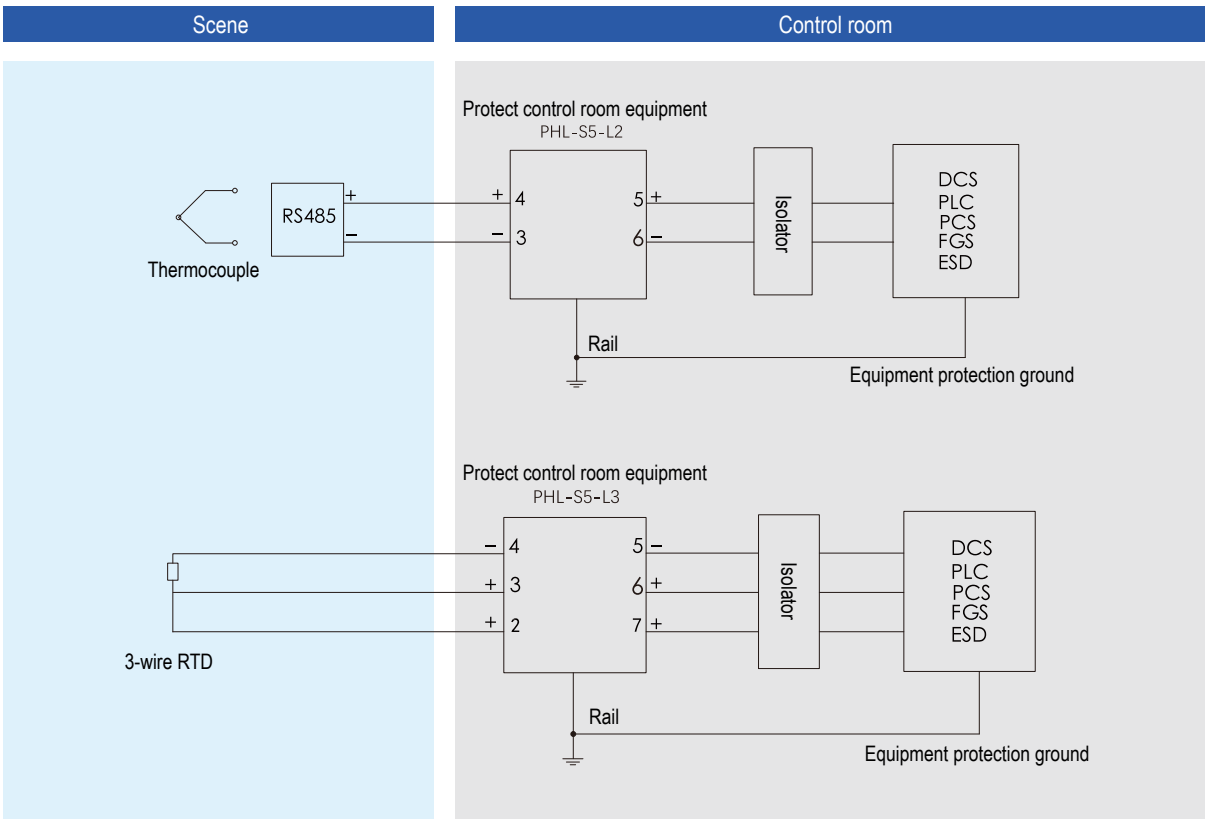
PHL-S5-L2



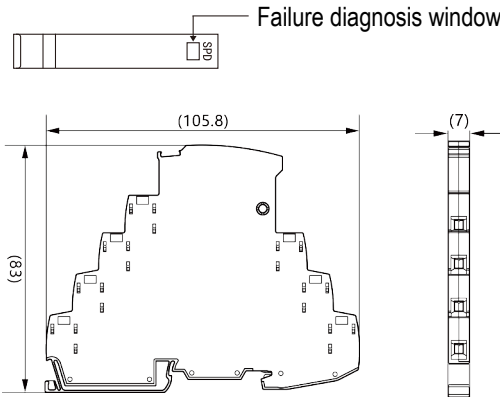
PHL-S5-L3

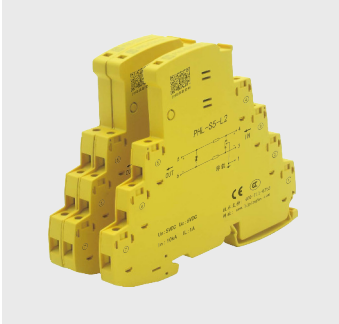


Schematic diagram



Dimension drawings





Product overview

PHL-S series SPD is mainly used to protect on-site equipment such as transmitters, switches, frequency signals, communication equipment, thermal resistors, thermocouples, and control room I/O, DCS, PLC, etc. connected in a two wire or three wire system, from damage caused by lightning surge surge voltage or operating overvoltage.

The main features are:

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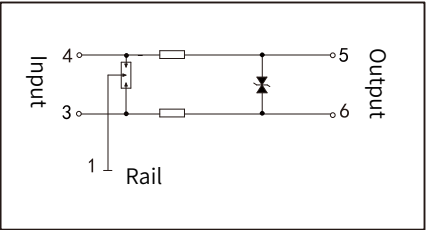
Technical data

Two-wire

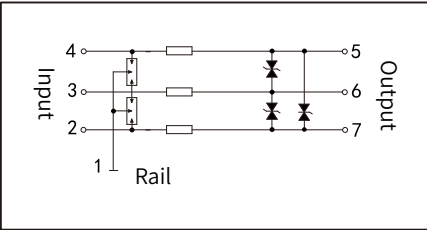
Three-wire

Technical data	PHL-S24-L2.5kA	PHL-S24-L2.10kA	PHL-S24-L3.5kA	PHL-S24-L3.10kA
Nominal discharge current In (8 / 20μs)	5kA	10kA	5kA	10kA
The maximum discharge current (8 / 20μs)	10kA	20kA	10kA	20kA
Lightning surge current Iimp (10 / 350μs)	0.5kA	2kA	0.5kA	2kA
Total lightning surge current (10 / 350μs)	1kA	4kA	1.5kA	6kA
Rated operating voltage Un	24V		24V	
Maximum operating voltage Uc	32V		32V	
Nominal operating current IL	1A		1A	
Protection voltage Up (8 / 20μs) line-to-line / line to ground	60V/600V		60V/600V	
Protection voltage Up (1kV / μs) line to line / line to ground	60V/600V		60V/600V	
Bandwidth (-0.5dB)	10MHz		10MHz	
Response time	1ns		1ns	
Series resistance (per line)	1Ω		1Ω	
Leakage current	<1μA		<1μA	
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20		IP 20	
Housing material / Flame retardant grade (the UL94)	PC/V0		PC/V0	
Test standard	GB/T 18802.21 / IEC61643-21		GB/T 18802.21 / IEC61643-21	
Working temperature range	-40 °C ~ +80 °C		-40 °C ~ +80 °C	

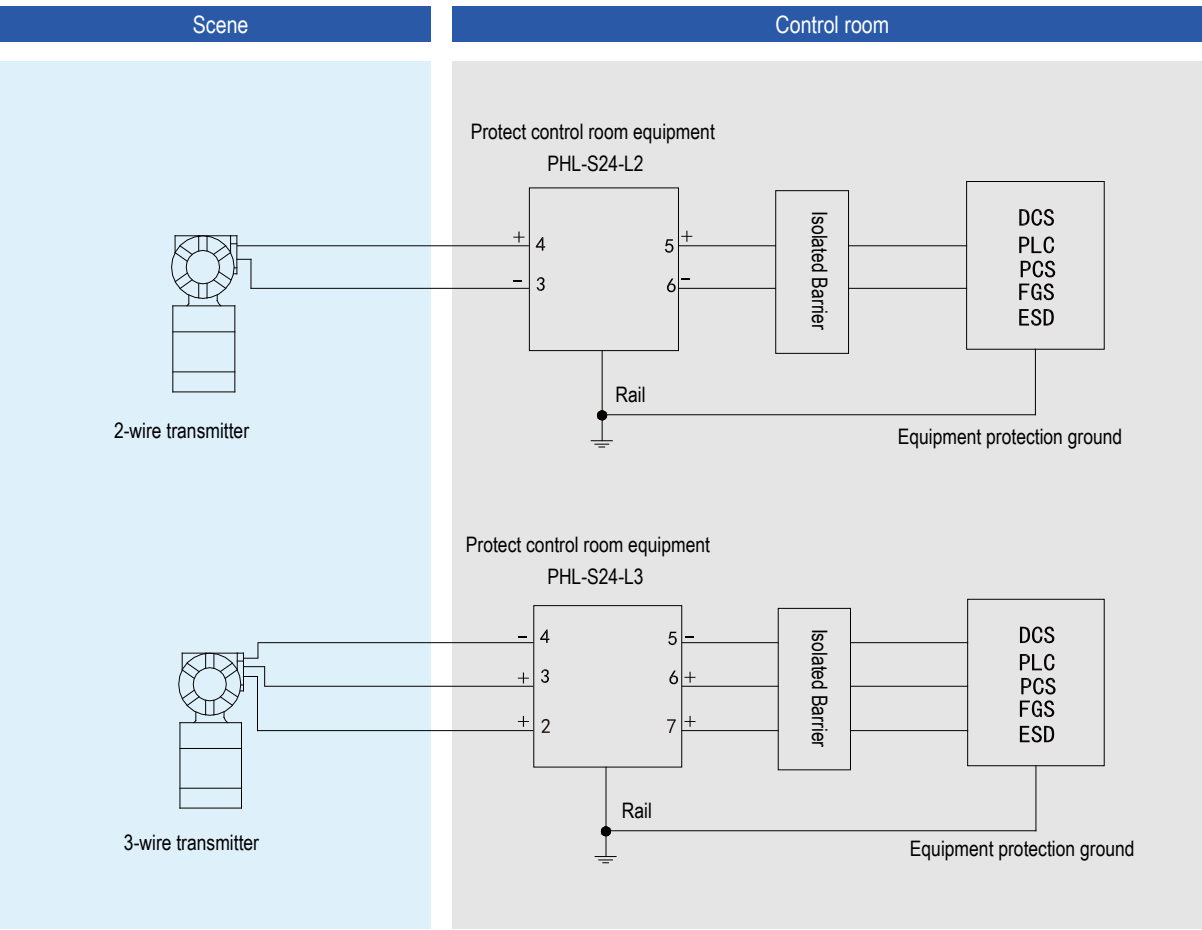
PHL-S24-L2



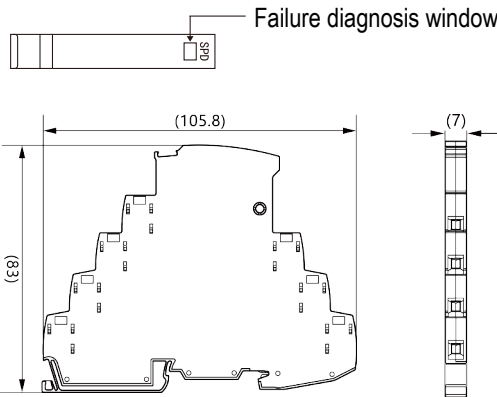
PHL-S24-L3

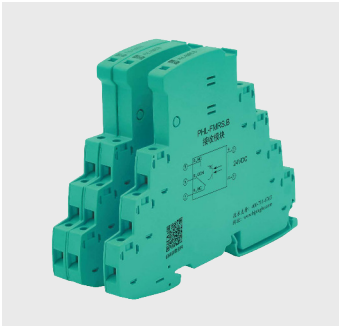


Schematic diagram



Dimension drawings





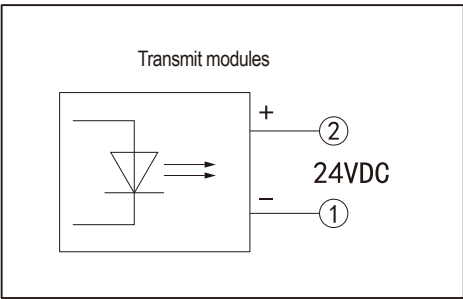
Product overview

PHL-FMRS module is composed of a PHL-FMRS. A transmitting module and a PHL-FMRS. B receiving module. After connecting to the power supply, the transmitting module will emit an optical signal, and the receiving module will detect the optical signal and provide a potential free signal contact when connecting to the power supply. 2. The distance between the transmitting and receiving modules of the remote signaling module shall not exceed 255mm at most. Can monitor the status of less than 36 S-series signal wave protection modules between two modules, forming a wave protection status monitoring system

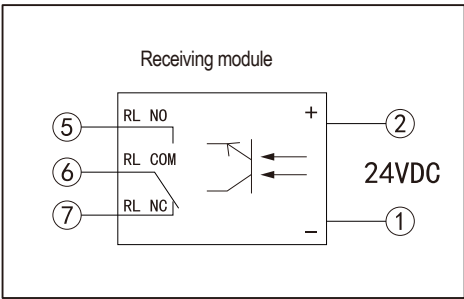
Technical data

	PHL-FMRS.A	PHL-FMRS.B
Rated operating voltage Un	24VDC	24VDC
Operating voltage range	20~35VDC	20~35VDC
Power supply working current	15mA (24VDC)	30mA (24VDC)
Remote signaling relay contacts	-	6A/250VAC; 6A/30VAC
Working temperature range	-20 °C ~ +60 °C	-20 °C ~ +60 °C
Relative humidity	10%~90%	10%~90%
Overall dimensions (Length X width X height)	105mmX7mmX83mm	105mmX7mmX83mm
Connection	Screw wiring	Screw wiring
Maximum cross-sectional area of wire	2.5mm²	2.5mm²
Cross section area of guide rail grounding wire	4~6mm²	4~6mm²
Installation method	DN35mm guide rail	DN35mm guide rail

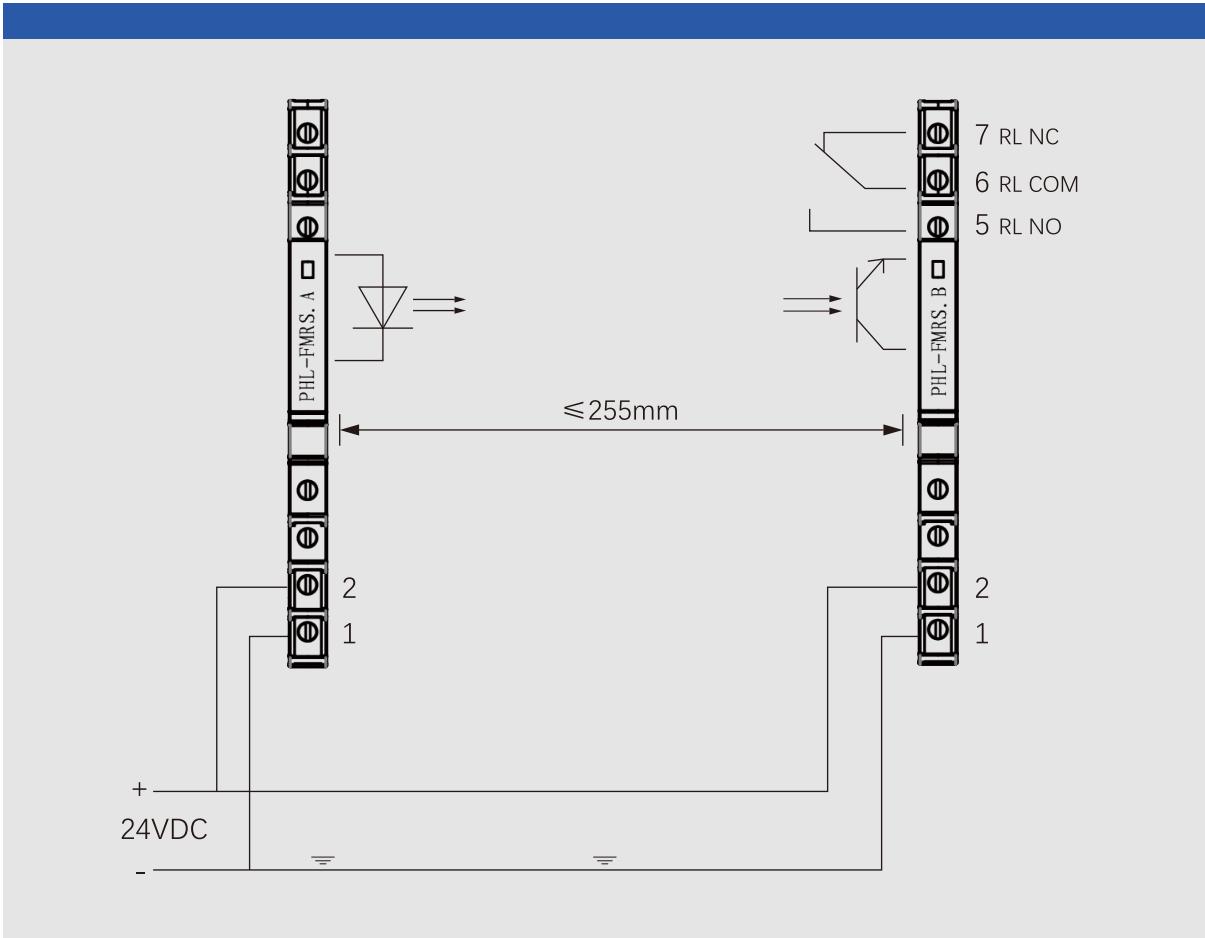
PHL-FMRS.A



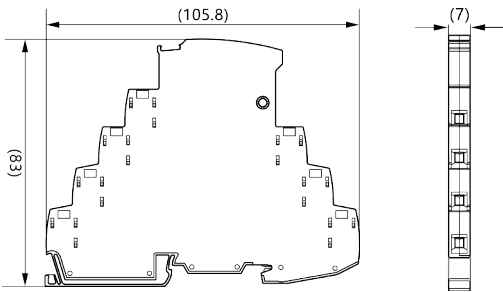
PHL-FMRS.B



Typical Applications



Dimension drawings



Product overview

- PHL-T24 low-power power supply SPD12.4mm thin design
- With failure window diagnosis function (optional)
- The surge protection module supports hot swapping and continuous wiring after unplugging
- The surge protection module can be individually tested for easy maintenance
- Suitable for low-power 24V power supply circuits
- Grounding through DIN35 metal guide rail

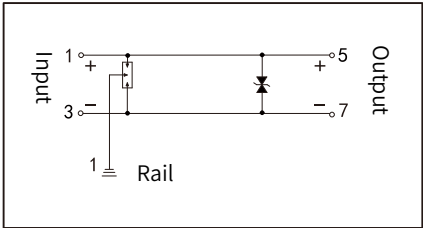
PHL-S24 low-power power supply SPD is mainly used to protect on-site equipment and control room 24V power supply equipment from damage caused by lightning surge voltage or overvoltage during operation.

The main features are

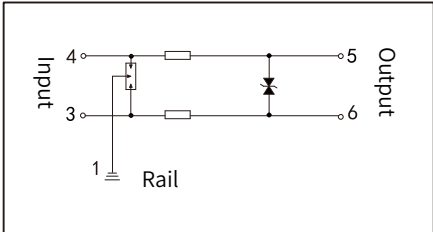
1. With failure window diagnosis function
 2. 7mm ultra-thin, space saving;
 3. High bandwidth, low insertion loss, suitable for low-power applications
- 24V power supply circuit

Technical data	PHL-T24	PHL-S24
Rated operating voltage Un	24VDC	24VDC
Maximum operating voltage Uc	36Vdc	36Vdc
Rated working current IL	10A	10A
Response time	1ns	1ns
Leakage current	<1μA	<1μA
Nominal discharge current In (8 / 20μs)	10kA/line	10kA/line
The maximum discharge current (8 / 20μs)	20kA	20kA
Lightning surge current Iimp (10 / 350μs)	2.5kA/line	2.5kA/line
Protection voltage Up (1KV / μs) line to line / line to ground	60V/600V	60V/600V
Protection voltage Up (1KV / μs) line to line / line to ground	60V/600V	60V/600V
Working temperature range	-40 °C ~ +80 °C	-40 °C ~ +80 °C
Relative humidity	10%~95%	10%~95%
Overall dimensions (Length X width X height)	90mmX12.4mmX76mm	105.8mmX83mmX7mm
Connection	Screw wiring	Screw wiring
Maximum cross-sectional area of wire	2.5mm²	2.5mm²
Cross section area of guide rail grounding wire	4~6mm²	4~6mm²
Installation method	DN35mm guide rail	DN35mm guide rail

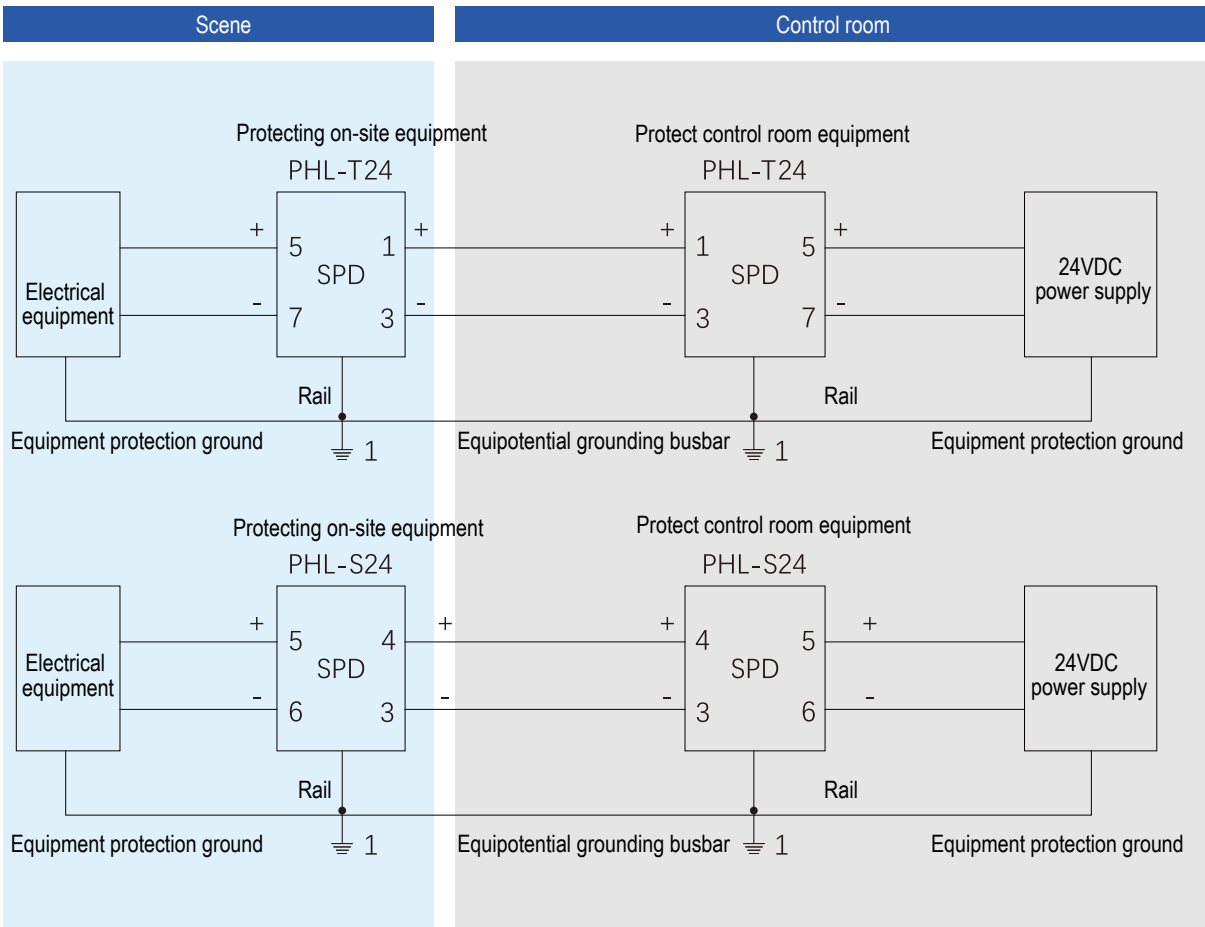
PHL-T24



PHL-S24

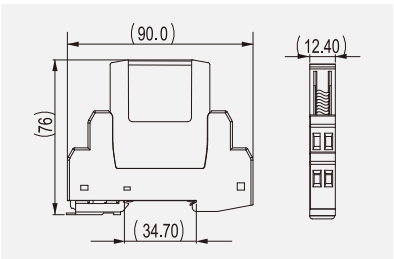


Schematic diagram

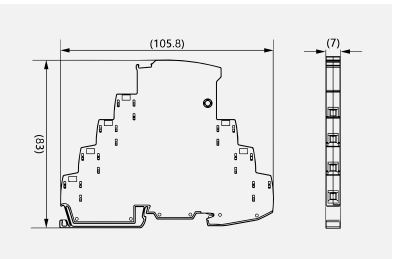
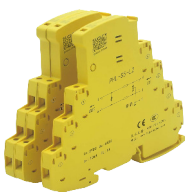


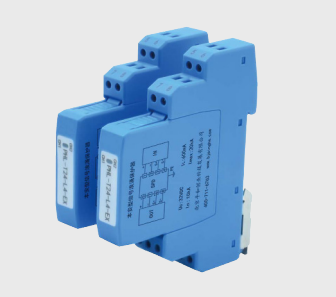
Dimension drawings

Failure diagnosis window



Failure diagnosis window





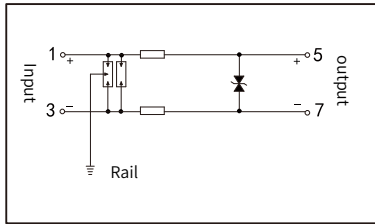
Product overview

12.4mm ultra-thin design;
With failure window diagnosis function (optional)
Surge protection modules are hot pluggable, no disconnection after unplugging;
Surge protective module can be individually detected, convenient to maintain;
Suitable for TC, RTD, CAN, RS485, RS422 and other floating circuit protection signals;
Earthing through DIN35 metal rail.

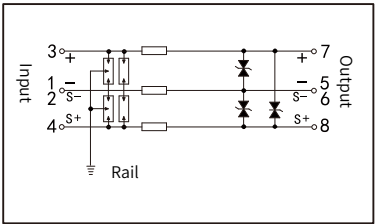
Technical data

	Two-wire	Three-wire	Four-wire
Rated operating voltage Un	5V	5V	5V
Maximum operating voltage Uc	6V	6V	6V
Nominal operating current IL	600mA	600mA	600mA
Nominal discharge current In (8 / 20μs)	10kA	10kA	10kA
The maximum discharge current (8 / 20μs)	20kA	20kA	20kA
Lightning surge current Iimp (10 / 350μs)	2.5kA	2.5kA	2.5kA
Total lightning surge current (10 / 350μs)	5kA	7.5kA	10kA
Protection voltage Up (8 / 20μs) line-to-line / line to ground	40V/600V	40V/600V	40V/600V
Protection voltage Up (1KV / μs) line to line / line to ground	20V/600V	20V/600V	20V/600V
Bandwidth (-0.5dB)	10MHz	10MHz	10MHz
Response time	1ns	1ns	1ns
Series resistance (per line)	1Ω	1Ω	1Ω
Leakage current	<10μA	<10μA	<10μA
Degrees of protection provided by enclosure (in line with IEC 60529)	Default None, selectable	Default None, selectable	Default None, selectable
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material / Flame retardant grade (the UL94)	PC/V0	PC/V0	PC/V0
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Explosion-proof certifications	EX ia II C T4-T6 Ga	EX ia II C T4-T6 Ga	EX ia II C T4-T6 Ga
Working temperature range	-40 °C ~ +80 °C	-40 °C ~ +80 °C	-40 °C ~ +80 °C

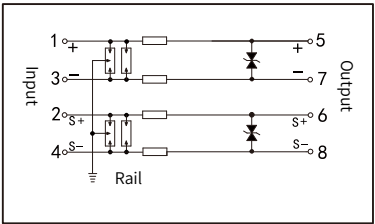
PHL-T5-L2-EX



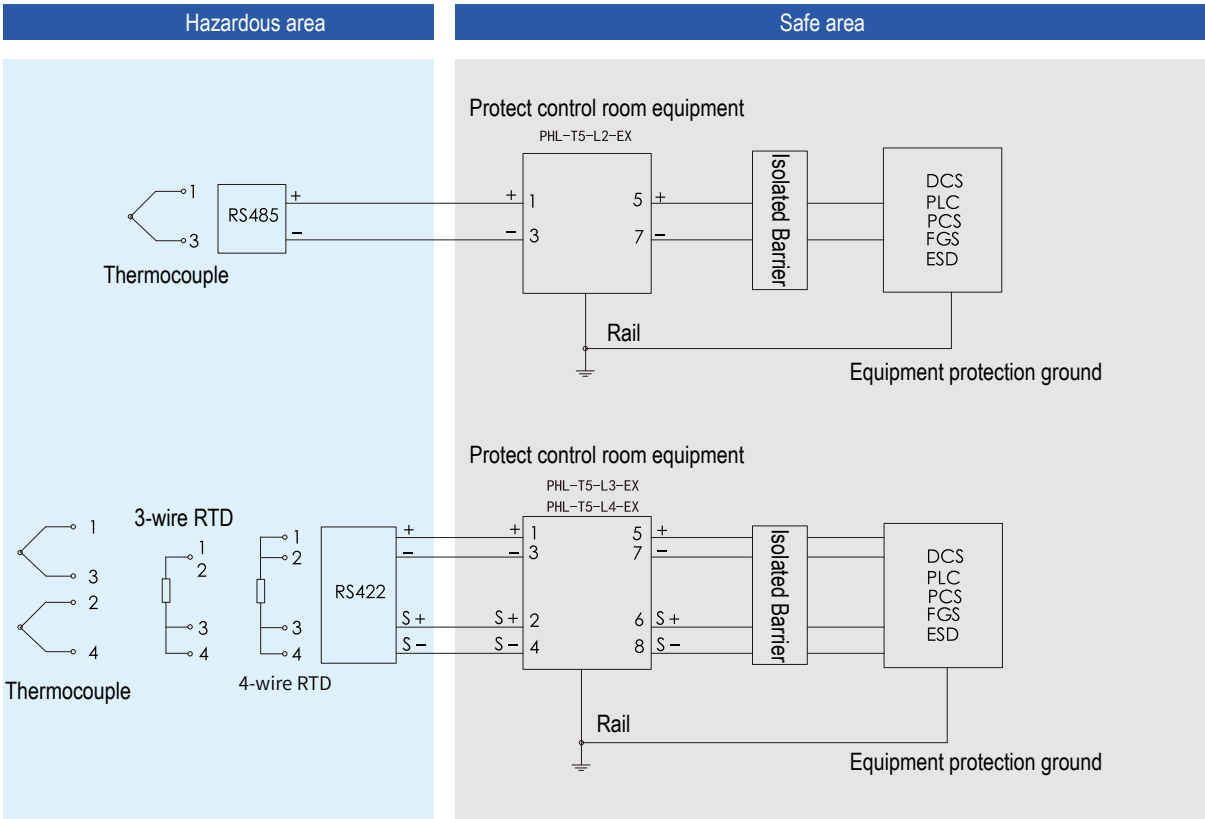
PHL-T5-L3-EX



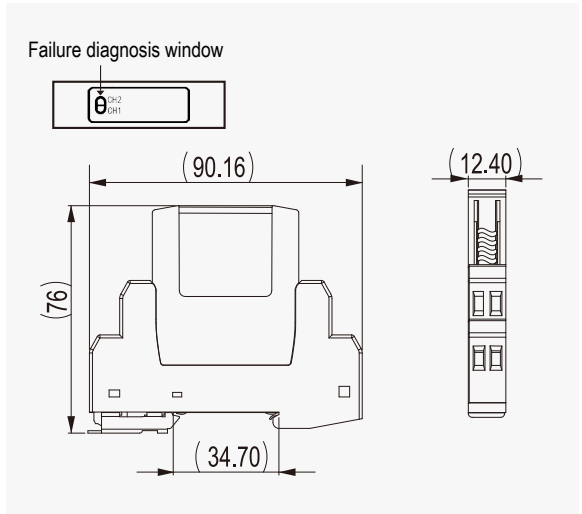
PHL-T5-L4-EX



Schematic diagram



Dimension drawings





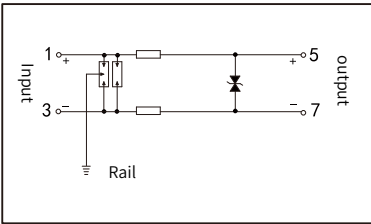
Product overview

12.4mm ultra-thin design;
With failure window diagnosis function (optional)
Surge protection modules are hot pluggable, no disconnection after unplugging;
Surge protective module can be individually detected, convenient to maintain;
Suitable for signal circuits such as AI, AO, DI, DO, RS232, etc;
Ground through DIN35 metal guide rail.
Earthing through DIN35 metal rail.

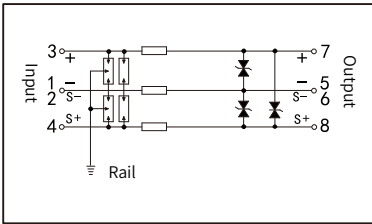
Technical data

	Two-wire	Three-wire	Four-wire
Rated operating voltage U_n	24V	24V	24V
Maximum operating voltage U_c	32V	32V	32V
Nominal operating current I_L	600mA	600mA	600mA
Nominal discharge current I_n (8 / 20 μ s)	10kA	10kA	10kA
The maximum discharge current (8 / 20 μ s)	20kA	20kA	20kA
Lightning surge current I_{imp} (10 / 350 μ s)	2.5kA	2.5kA	2.5kA
Total lightning surge current (10 / 350 μ s)	5kA	7.5kA	10kA
Protection voltage U_p (8 / 20 μ s) line-to-line / line to ground	60V/600V	60V/600V	60V/600V
Protection voltage U_p (1KV / μ s) line to line / line to ground	40V/600V	40V/600V	40V/600V
Bandwidth (-0.5dB)	10MHz	10MHz	10MHz
Response time	1ns	1ns	1ns
Series resistance (per line)	1 Ω	1 Ω	1 Ω
Leakage current	<1 μ A	<1 μ A	<1 μ A
Degrees of protection provided by enclosure (in line with IEC 60529)	Default None, selectable	Default None, selectable	Default None, selectable
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material / Flame retardant grade (the UL94)	PC/V0	PC/V0	PC/V0
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Explosion-proof certifications	EX ia II C T4-T6 Ga	EX ia II C T4-T6 Ga	EX ia II C T4-T6 Ga
Working temperature range	-40 °C ~ +80 °C	-40 °C ~ +80 °C	-40 °C ~ +80 °C

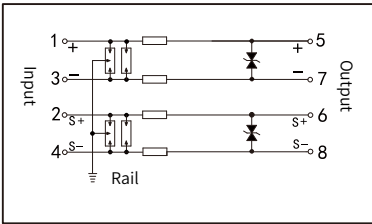
PHL-T24-L2-EX



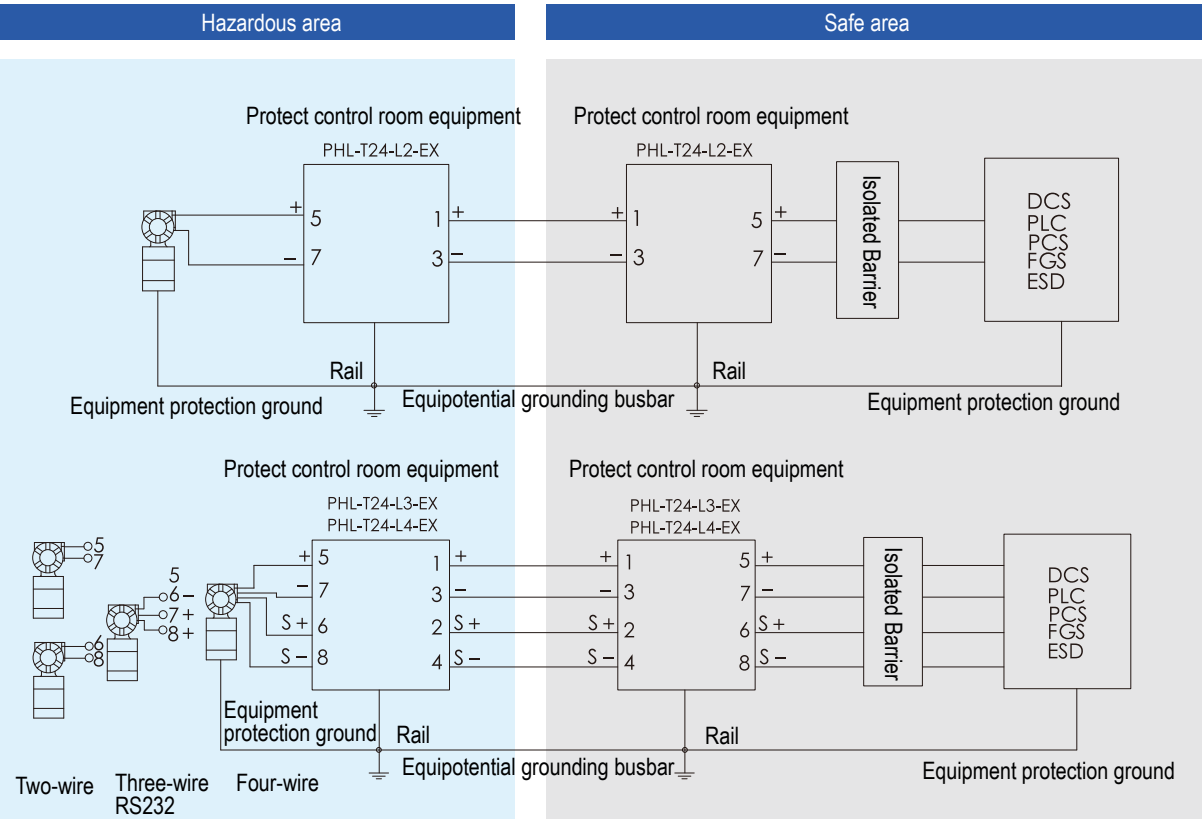
PHL-T24-L3-EX



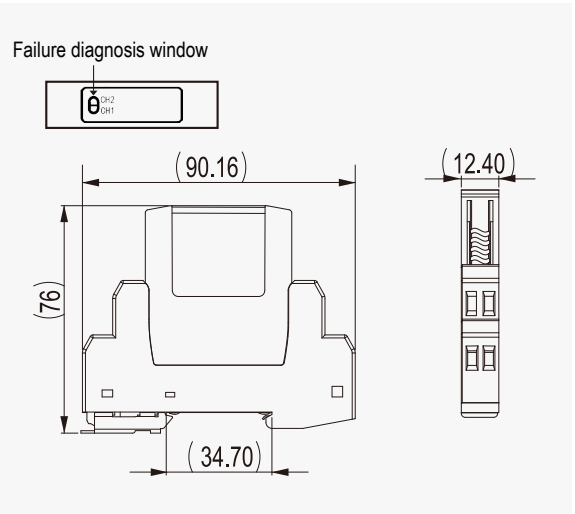
PHL-T24-L4-EX



Schematic diagram



Dimension drawings



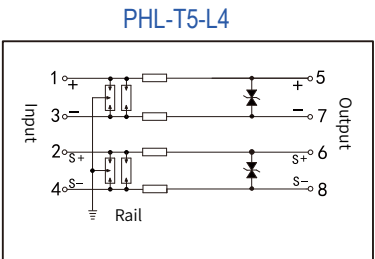
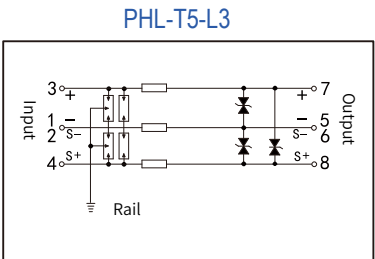
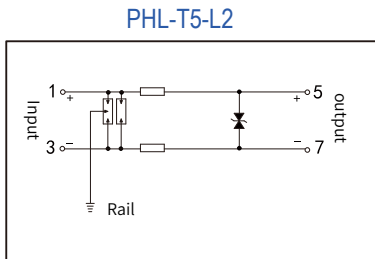


Product overview

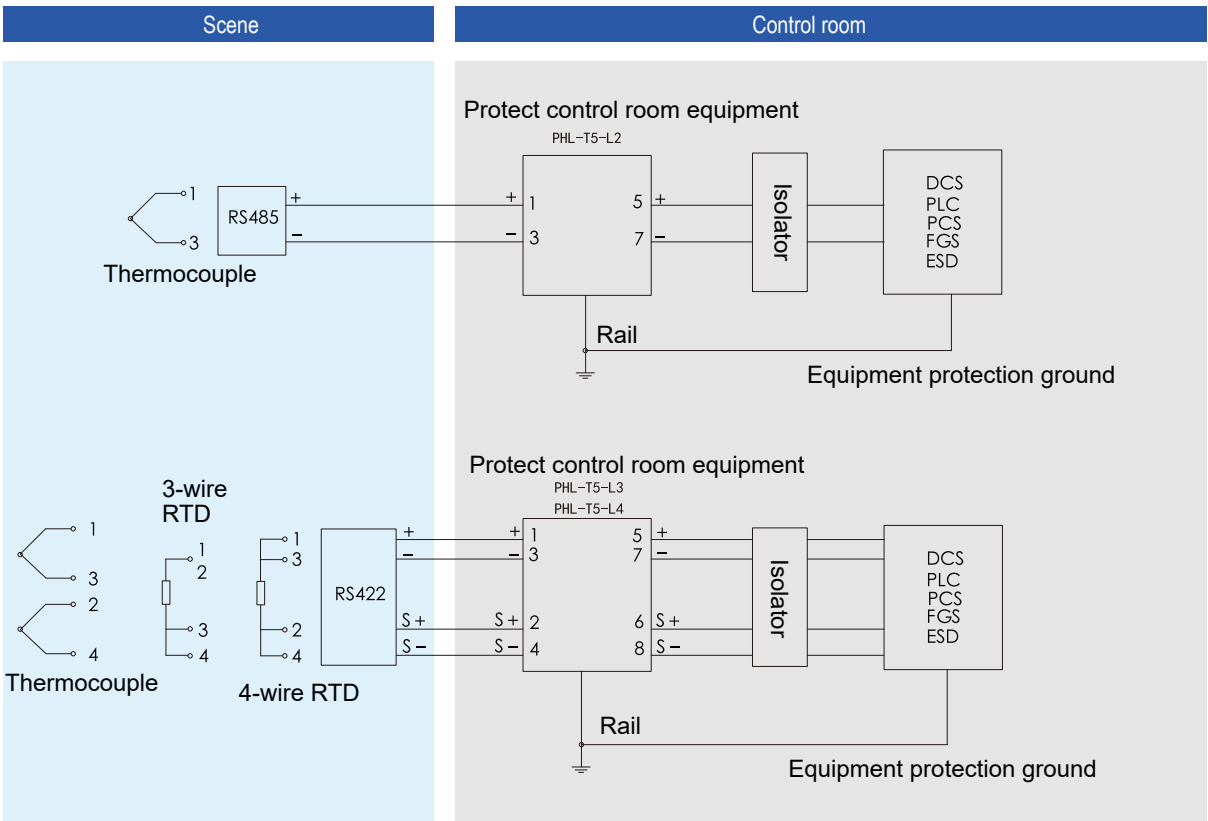
12.4mm ultra-thin design;
With failure window diagnosis function (optional)
Surge protection modules are hot pluggable, no disconnection after unplugging;
Surge protective module can be individually detected, convenient to maintain;
Suitable for TC, RTD, CAN, RS485, RS422 and other floating circuit protection signals;
Earthing through DIN35 metal rail.

Technical data

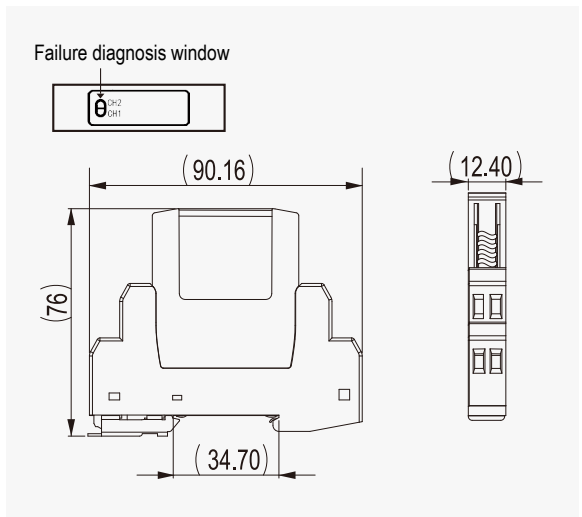
	Two-wire	Three-wire	Four-wire
Rated operating voltage U_n	5V	5V	5V
Maximum operating voltage U_c	6V	6V	6V
Nominal operating current I_L	1A	1A	1A
Nominal discharge current I_n (8 / 20 μ s)	10kA	10kA	10kA
The maximum discharge current (8 / 20 μ s)	20kA	20kA	20kA
Lightning surge current I_{imp} (10 / 350 μ s)	2.5kA	2.5kA	2.5kA
Total lightning surge current (10 / 350 μ s)	5kA	7.5kA	10kA
Protection voltage U_p (8 / 20 μ s) line-to-line / line to ground	40V/600V	40V/600V	40V/600V
Protection voltage U_p (1KV / μ s) line to line / line to ground	20V/600V	20V/600V	20V/600V
Bandwidth (-0.5dB)	10MHz	10MHz	10MHz
Response time	1ns	1ns	1ns
Series resistance (per line)	1 Ω	1 Ω	1 Ω
Leakage current	< 10 μ A	< 10 μ A	< 10 μ A
Degrees of protection provided by enclosure (in line with IEC 60529)	Default None, selectable	Default None, selectable	Default None, selectable
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material / Flame retardant grade (the UL94)	PC/V0	PC/V0	PC/V0
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Working temperature range	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C	-40 $^{\circ}$ C ~ +80 $^{\circ}$ C



Schematic diagram



Dimension drawings





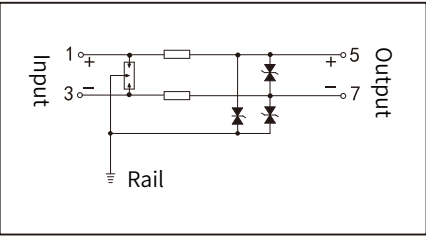
Product overview

12.4mm ultra-thin design;
With failure window diagnosis function (optional)
Surge protection modules are hot pluggable, no disconnection after unplugging;
Surge protective module can be individually detected, convenient to maintain;
Suitable for protecting floating ground signal circuits such as thermocouples, thermal resistors, CAN, RS485, RS422, etc
Earthing through DIN35 metal rail.

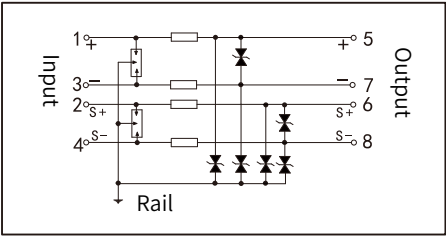
Technical data

	Two-wire	Three-wire	Four-wire
Rated operating voltage Un	5V	5V	5V
Maximum operating voltage Uc	6V	6V	6V
Nominal operating current IL	1A	1A	1A
Nominal discharge current In (8 / 20μs)	10kA	10kA	10kA
The maximum discharge current (8 / 20μs)	20kA	20kA	20kA
Lightning surge current Iimp (10 / 350μs)	2.5kA	2.5kA	2.5kA
Total lightning surge current (10 / 350μs)	5kA	7.5kA	10kA
Protection voltage Up (8 / 20μs) line-to-line / line to ground	40V/40V	40V/40V	40V/40V
Protection voltage Up (1KV / μs) line to line / line to ground	20V/20V	20V/20V	20V/20V
Bandwidth (-0.5dB)	10MHz	10MHz	10MHz
Response time	1ns	1ns	1ns
Series resistance (per line)	1Ω	1Ω	1Ω
Leakage current	<10μA	<10μA	<10μA
Degrees of protection provided by enclosure (in line with IEC 60529)	Default None, selectable	Default None, selectable	Default None, selectable
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material / Flame retardant grade (the UL94)	PC/V0	PC/V0	PC/V0
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Working temperature range	-40 °C ~ +80 °C	-40 °C ~ +80 °C	-40 °C ~ +80 °C

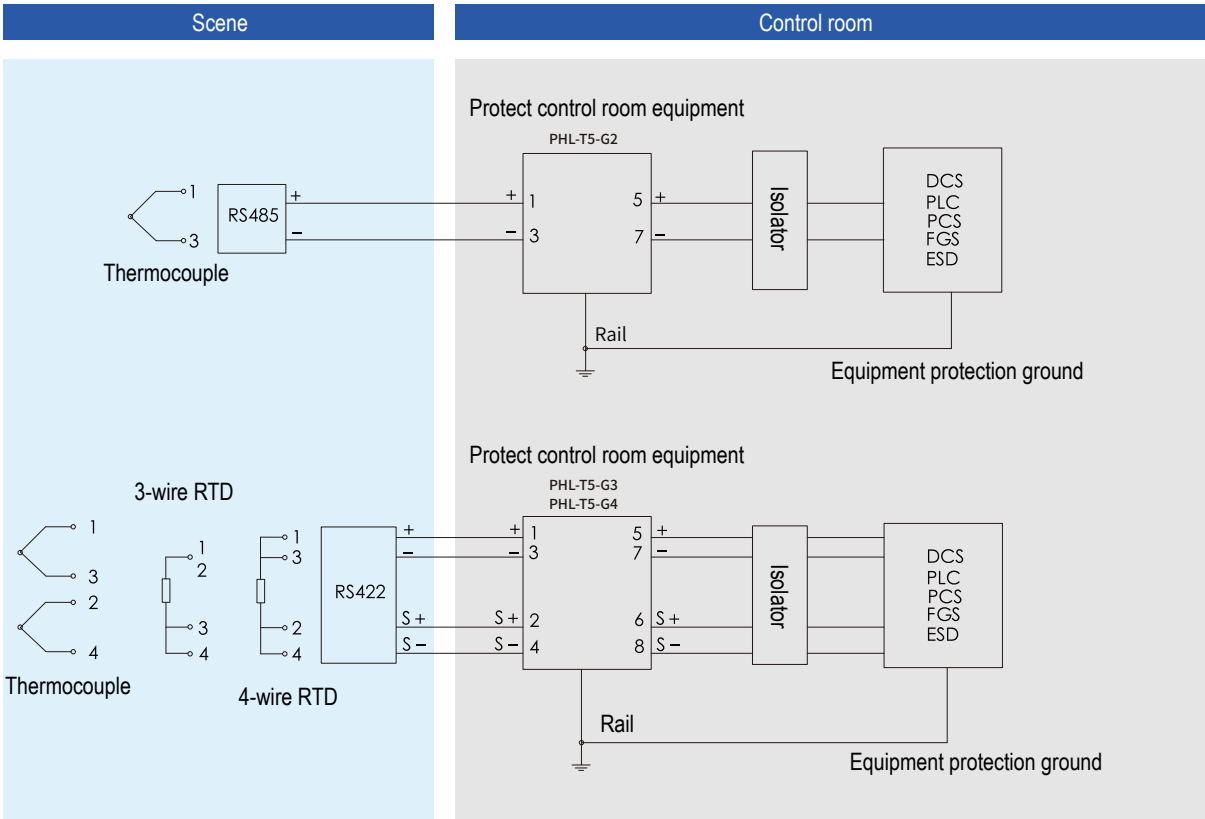
PHL-T5-G2



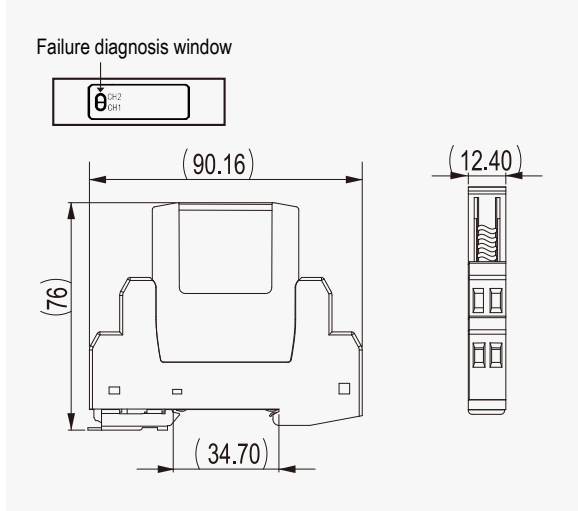
PHL-T5-G4
PHL-T5-G3



Schematic diagram



Dimension drawings



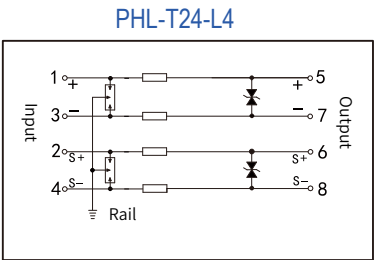
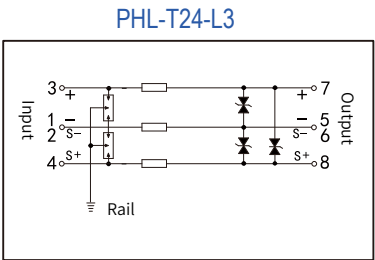
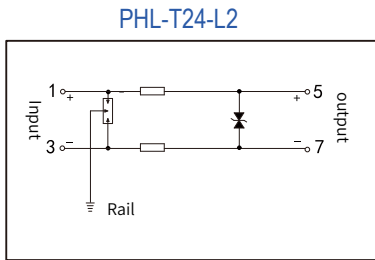


Product overview

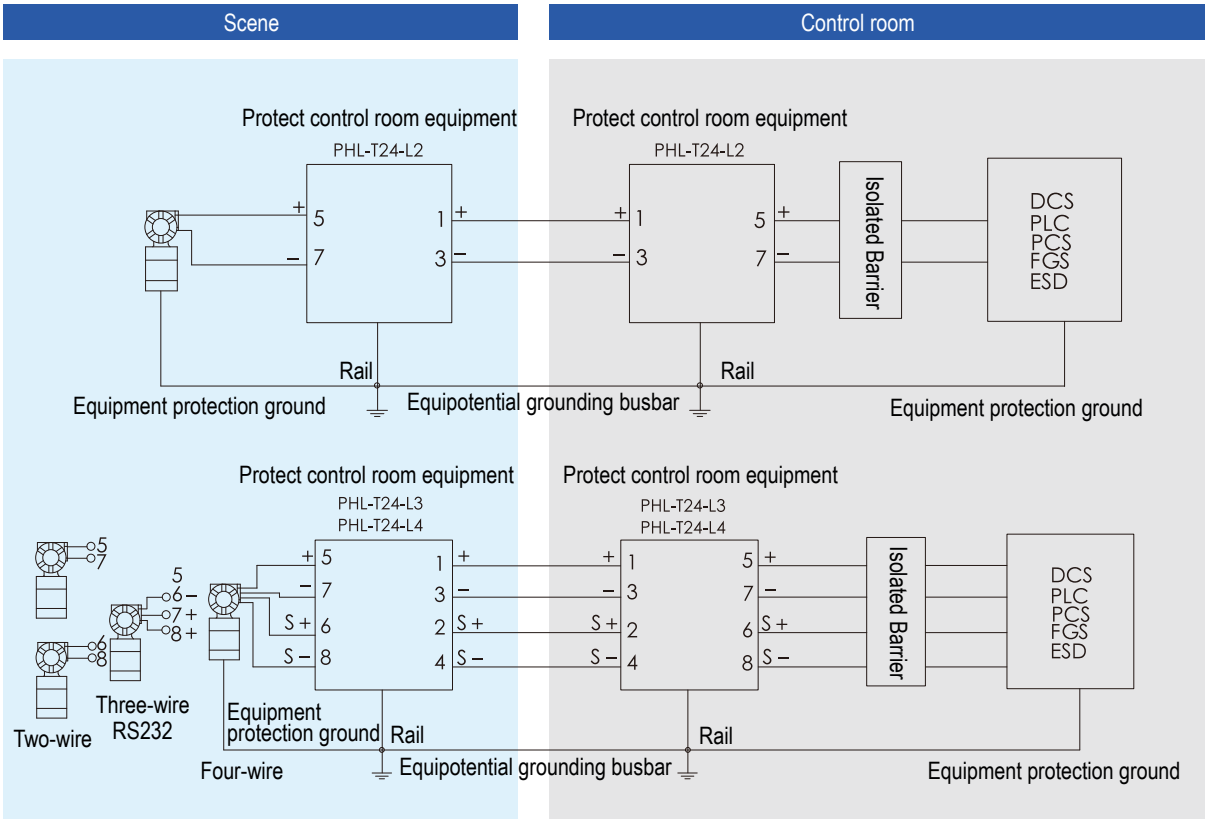
12.4mm ultra-thin design;
With failure window diagnosis function (optional)
Surge protection modules are hot pluggable, no disconnection after unplugging;
Surge protective module can be individually detected, convenient to maintain;
Suitable for protection of floating signal circuits such as AI, AO, DI, DO, RS232, etc
Ground through DIN35 metal guide rail.
Earthing through DIN35 metal rail.

Technical data

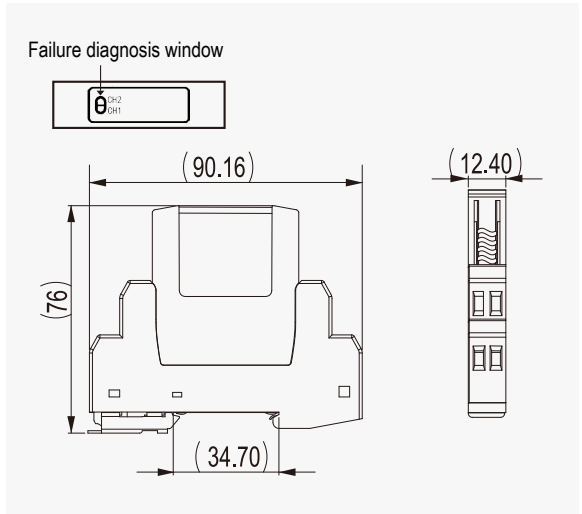
	Two-wire	Three-wire	Four-wire
Rated operating voltage Un	24V	24V	24V
Maximum operating voltage Uc	32V	32V	32V
Nominal operating current IL	1A	1A	1A
Nominal discharge current In (8 / 20μs)	10kA	10kA	10kA
The maximum discharge current (8 / 20μs)	20kA	20kA	20kA
Lightning surge current Iimp (10 / 350μs)	2.5kA	2.5kA	2.5kA
Total lightning surge current (10 / 350μs)	5kA	7.5kA	10kA
Protection voltage Up (8 / 20μs) line-to-line / line to ground	60V/600V	60V/600V	60V/600V
Protection voltage Up (1KV / μs) line to line / line to ground	40V/600V	40V/600V	40V/600V
Bandwidth (-0.5dB)	10MHz	10MHz	10MHz
Response time	1ns	1ns	1ns
Series resistance (per line)	1Ω	1Ω	1Ω
Leakage current	< 1μA	< 1μA	< 1μA
Degrees of protection provided by enclosure (in line with IEC 60529)	Default None, selectable	Default None, selectable	Default None, selectable
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material / Flame retardant grade (the UL94)	PC/V0	PC/V0	PC/V0
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Working temperature range	-40 ℃ ~ +80 ℃	-40 ℃ ~ +80 ℃	-40 ℃ ~ +80 ℃



Schematic diagram



Dimension drawings





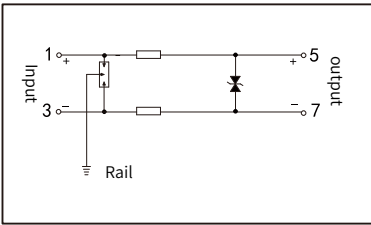
Product overview

12.4mm ultra-thin design;
With failure window diagnosis function (optional)
Surge protection modules are hot pluggable, no disconnection after unplugging;
Surge protective module can be individually detected, convenient to maintain;
Suitable for signal circuits with common reference potentials such as AI, AO, DI, DO, RS232, etc
Ground through DIN35 metal guide rail.
Earthing through DIN35 metal rail.

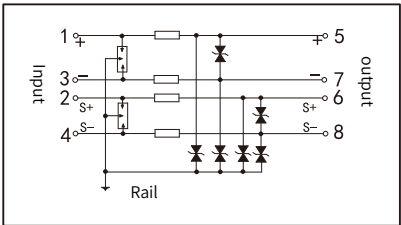
Technical data

	Two-wire	Three-wire	Four-wire
Rated operating voltage Un	24V	24V	24V
Maximum operating voltage Uc	32V	32V	32V
Nominal operating current IL	1A	1A	1A
Nominal discharge current In (8 / 20μs)	10kA	10kA	10kA
The maximum discharge current (8 / 20μs)	20kA	20kA	20kA
Lightning surge current Iimp (10 / 350μs)	2.5kA	2.5kA	2.5kA
Total lightning surge current (10 / 350μs)	5kA	7.5kA	10kA
Protection voltage Up (8 / 20μs) line-to-line / line to ground	60V/60V	60V/60V	60V/60V
Protection voltage Up (1KV / μs) line to line / line to ground	40V/40V	40V/40V	40V/40V
Bandwidth (-0.5dB)	10MHz	10MHz	10MHz
Response time	1ns	1ns	1ns
Series resistance (per line)	1Ω	1Ω	1Ω
Leakage current	< 1μA	< 1μA	< 1μA
Degrees of protection provided by enclosure (in line with IEC 60529)	Default None, selectable	Default None, selectable	Default None, selectable
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material / Flame retardant grade (the UL94)	PC/V0	PC/V0	PC/V0
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Working temperature range	-40 ℃ ~ +80 ℃	-40 ℃ ~ +80 ℃	-40 ℃ ~ +80 ℃

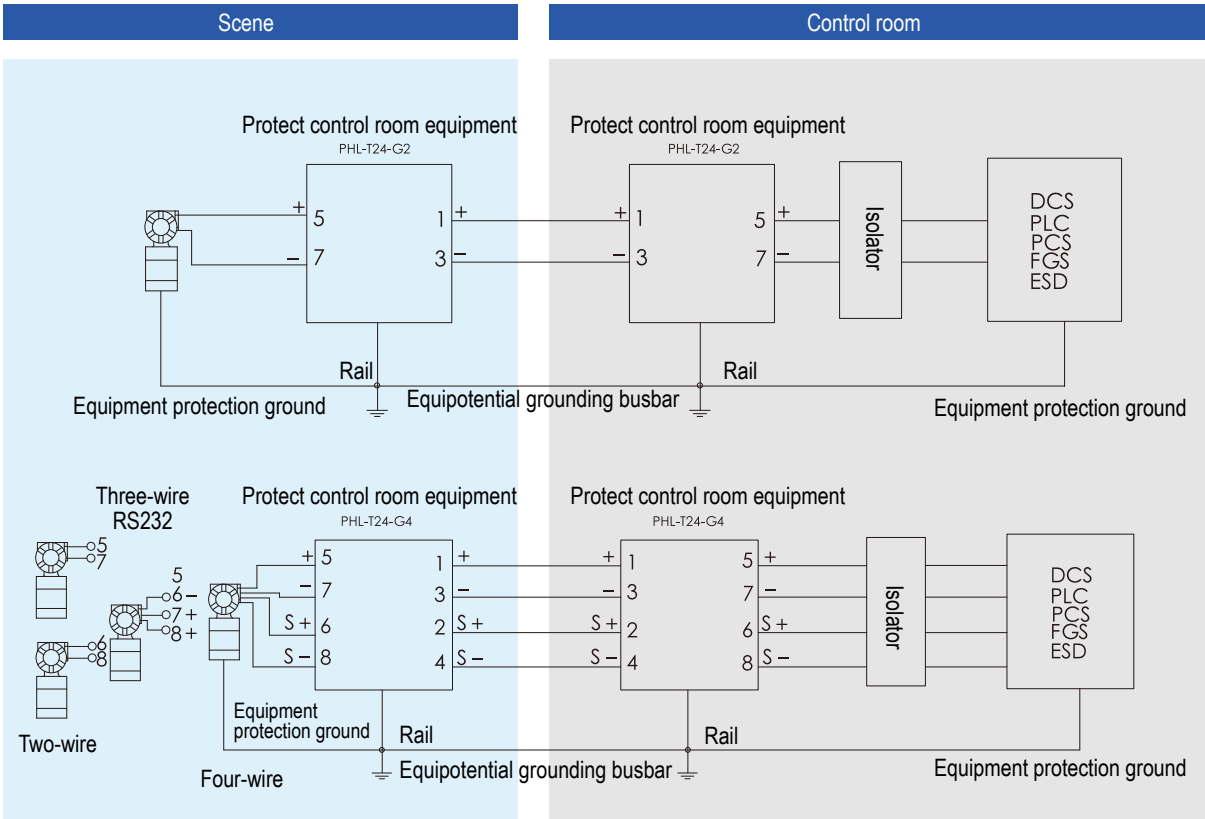
PHL-T24-G2



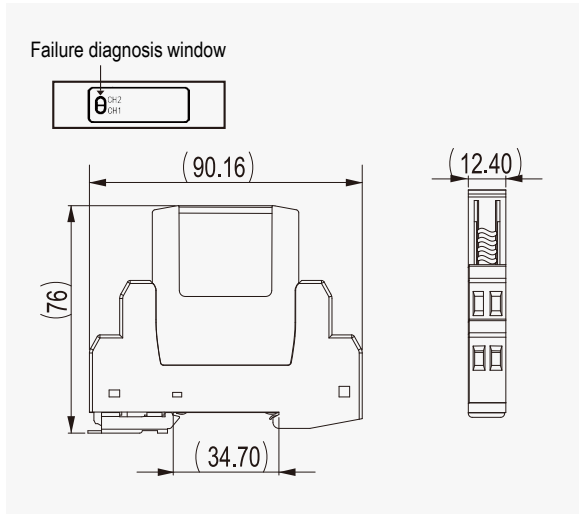
PHL-T24-G3
PHL-T24-G4



Schematic diagram



Dimension drawings





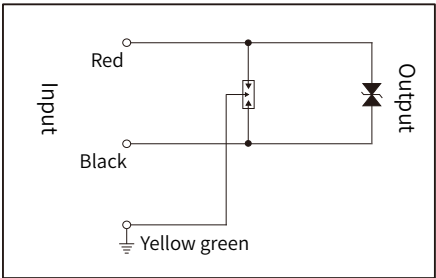
Product overview

Flame Proof, Intrinsically safe explosion-proof certification
Suitable for protection of 2-wire, 3-wire and 4-wire transmitter, TC, RTD, RS485, RS232, RS422, flowmeter, electromagnetic valve etc.

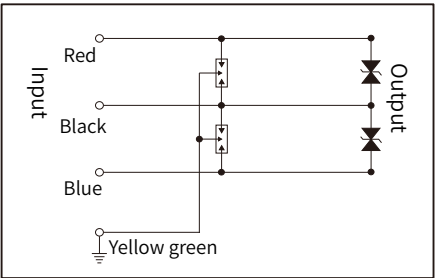
Technical data

	Two-wire	Three-wire	Four-wire
Rated operating voltage U_n	24V	24V	24V
Maximum operating voltage U_c	35V	35V	35V
Nominal discharge current I_n (8 / 20 μ s)	10kA	10kA	10kA
The maximum discharge current (8 / 20 μ s)	20kA	20kA	20kA
Lightning surge current I_{imp} (10 / 350 μ s)	2.5kA	2.5kA	2.5kA
Protection voltage U_p (8 / 20 μ s) line-to-line	60V	60V	60V
Protection voltage U_p (1kV / μ s) line to ground	600V	600V	600V
Response time	1ns	1ns	1ns
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 67	IP 67	IP 67
Housing material	304 Stainless steel	304 Stainless steel	304 Stainless steel
Thread format	Specify when ordering	Specify when ordering	Specify when ordering
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Explosion-proof certifications	EX d II C T4 ~ T6 Gb	EX d II C T4 ~ T6 Gb	EX d II C T4 ~ T6 Gb
	EX ia II C T4 ~ T6 Ga	EX ia II C T4 ~ T6 Ga	EX ia II C T4 ~ T6 Ga
Working temperature range	-40 °C ~ +80 °C	-40 °C ~ +80 °C	-40 °C ~ +80 °C

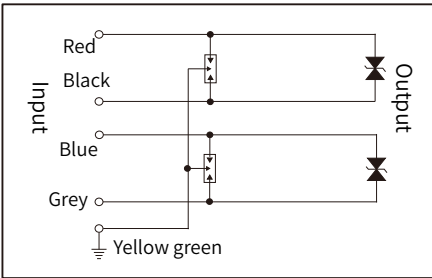
PHL-TX24-P2-*EX



PHL-TX24-P3-*EX



PHL-TX24-P4-*EX

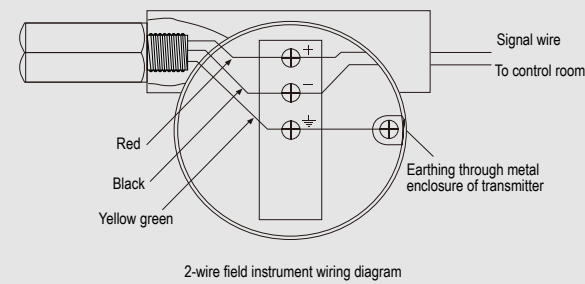


The "*" in the model number represents the thread specification, which must be specified when ordering:

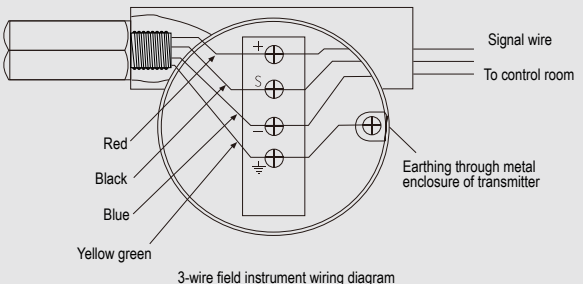
I: M20X1.5 N: 1/2"NPT G: G1/2"

Schematic diagram

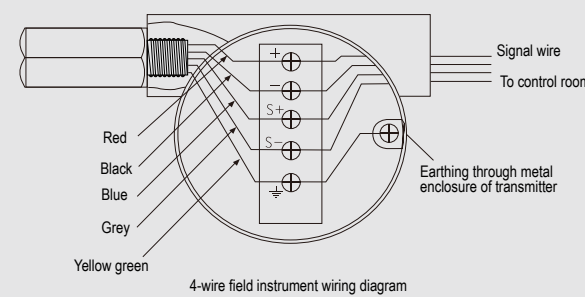
PHL-TX24-P2-*EX



PHL-TX24-P3-*EX

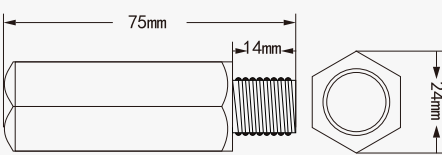


PHL-TX24-P4-*EX

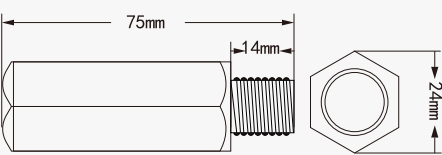


Dimension drawings

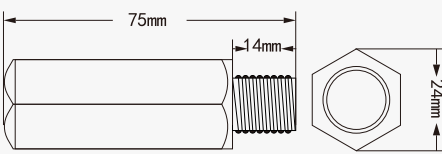
I: M20X1.5



N: 1/2" NPT



G: G1/2"



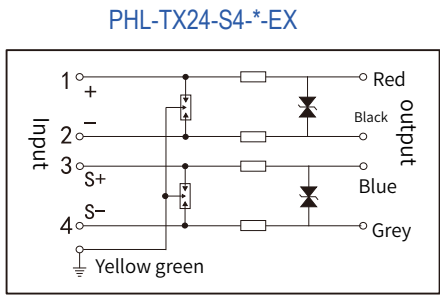
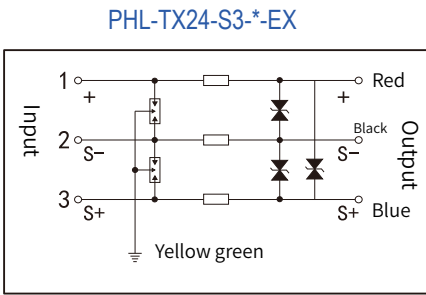
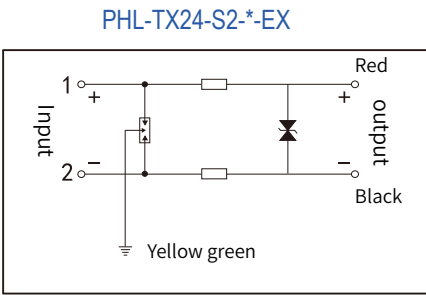
Note: Wire specification 26/0.254(1.32mm², 16AWG), wire length 180mm



Product overview

Flame Proof, Intrinsically safe explosion-proof certification
Suitable for protection of 2-wire, 3-wire and 4-wire transmitter, TC, RTD, RS485, RS232, RS422, flowmeter, electromagnetic valve etc.

Technical data	Two-wire	Three-wire	Four-wire
Rated operating voltage U_n	24V	24V	24V
Maximum operating voltage U_c	32V	32V	32V
Nominal discharge current I_n (8 / 20 μ s)	10kA	10kA	10kA
The maximum discharge current (8 / 20 μ s)	20kA	20kA	20kA
Lightning surge current I_{imp} (10 / 350 μ s)	2kA	2kA	2kA
Protection voltage U_p (8 / 20 μ s) line-to-line	60V	60V	60V
Protection voltage U_p (1KV / μ s) line to ground	600V	600V	600V
Response time	1ns	1ns	1ns
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 67	IP 67	IP 67
Housing material	304 Stainless steel	304 Stainless steel	304 Stainless steel
Thread format	Specify when ordering	Specify when ordering	Specify when ordering
Test standard	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21	GB/T 18802.21 / IEC61643-21
Explosion-proof certifications	EX d II C T4 ~ T6 Gb	EX d II C T4 ~ T6 Gb	EX d II C T4 ~ T6 Gb
	EX ia II C T4 ~ T6 Ga	EX ia II C T4 ~ T6 Ga	EX ia II C T4 ~ T6 Ga
Working temperature range	-40 °C ~ +80 °C	-40 °C ~ +80 °C	-40 °C ~ +80 °C

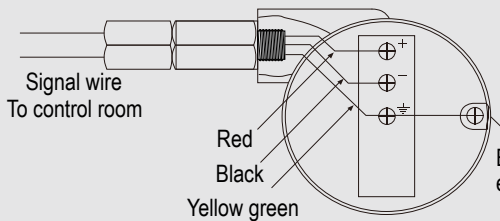


The "*" in the model number represents the thread specification, which must be specified when ordering:

I: M20X1.5 N: 1/2"NPT G: G1/2"

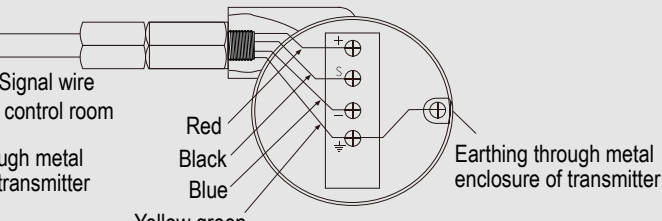
Schematic diagram

PHL-TX24-S2-S-EX



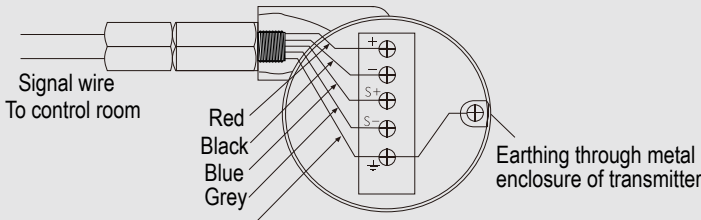
2-wire field instrument wiring diagram

PHL-TX24-S3-S-EX



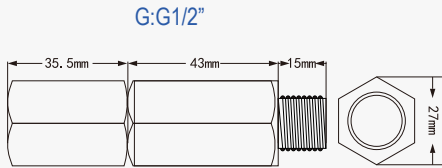
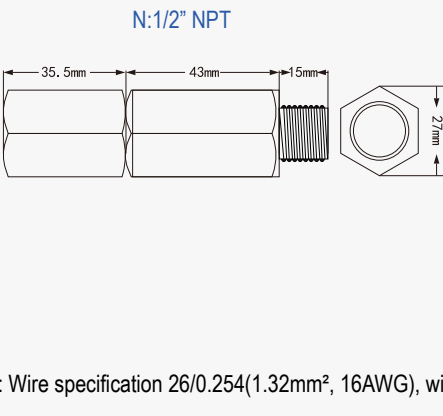
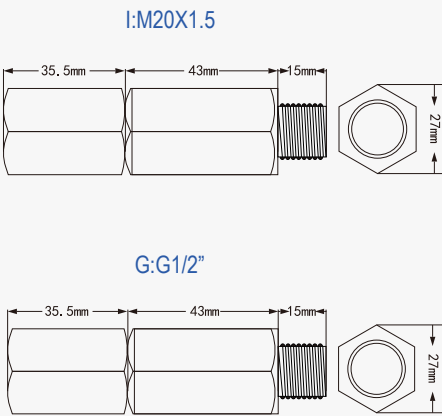
3-wire field instrument wiring diagram

PHL-TX24-S4-S-EX



4-wire field instrument wiring diagram

Dimension drawings



Note: Wire specification 26/0.254(1.32mm², 16AWG), wire length 180mm



Product overview

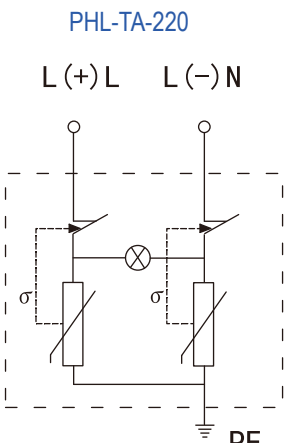
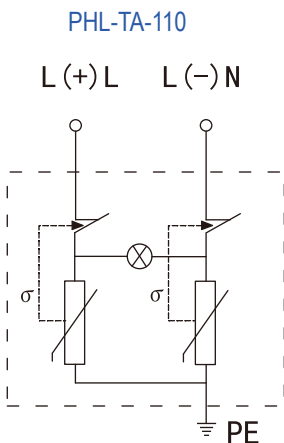
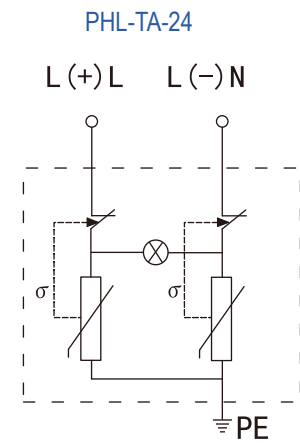
It is suitable for lightning protection of equipment powered by low-voltage power supply, and at the other junction area of LPZ2 and LPZ3 zones.

Main characteristics:

- 1) Electronic aging heating release device with high reliability, can effectively avoid short-circuit fault;
- 2) Pluggable lightning protection module, convenient to install, and the lightning arrester can be replaced without power disconnection when the products are aging.

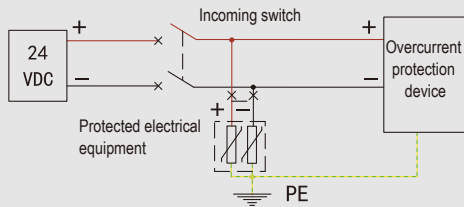
Technical data

Protection pattern	L-PE	L-PE	L-PE
Rated operating voltage U_n U_{cpv}	24VDC	110VDC	220VDC
Nominal discharge current I_n (8 / 20 μ s)	20kA	20kA	20kA
The maximum discharge current (8 / 20 μ s)	40kA	40kA	40kA
Protection voltage U_p (under I_n)	<500V	<750V	<1.0kV
Response time	<25ns	<25ns	<25ns
Short circuit withstand capability at 16A gL/gG backup fuse	6kA	6kA	6kA
Aging thermal separation function	Yes	Yes	Yes
Aging indicator function	Yes	Yes	Yes
Working temperature range	-40 °C ~ +80 °C	-40 °C ~ +80 °C	-40 °C ~ +80 °C
Housing material	UL94-V0	UL94-V0	UL94-V0
Cross-sectional area of connecting wire	0.1(min)~4 (max) flexible wire mm ²	0.1(min)~4 (max) flexible wire mm ²	0.1(min)~4 (max) flexible wire mm ²
Installation method	DIN35mm rail	DIN35mm rail	DIN35mm rail
Protection grades	IP 20	IP 20	IP 20

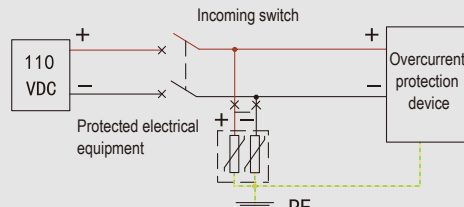


Schematic diagram

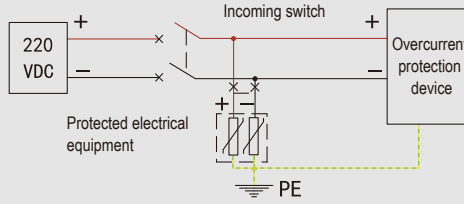
PHL-TA-24



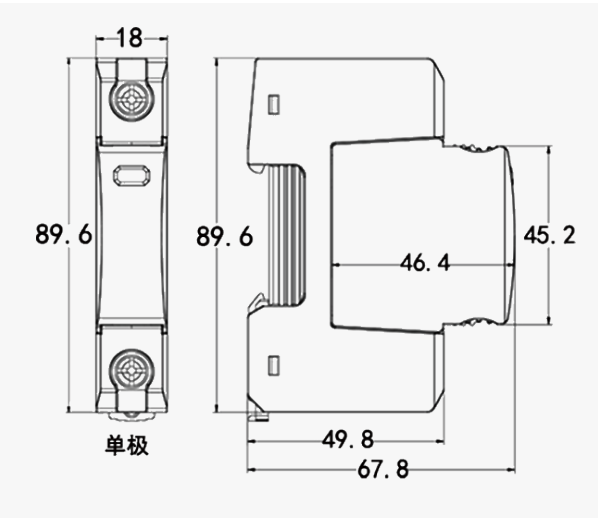
PHL-TA-110



PHL-TA-220



Dimension drawings





Product overview

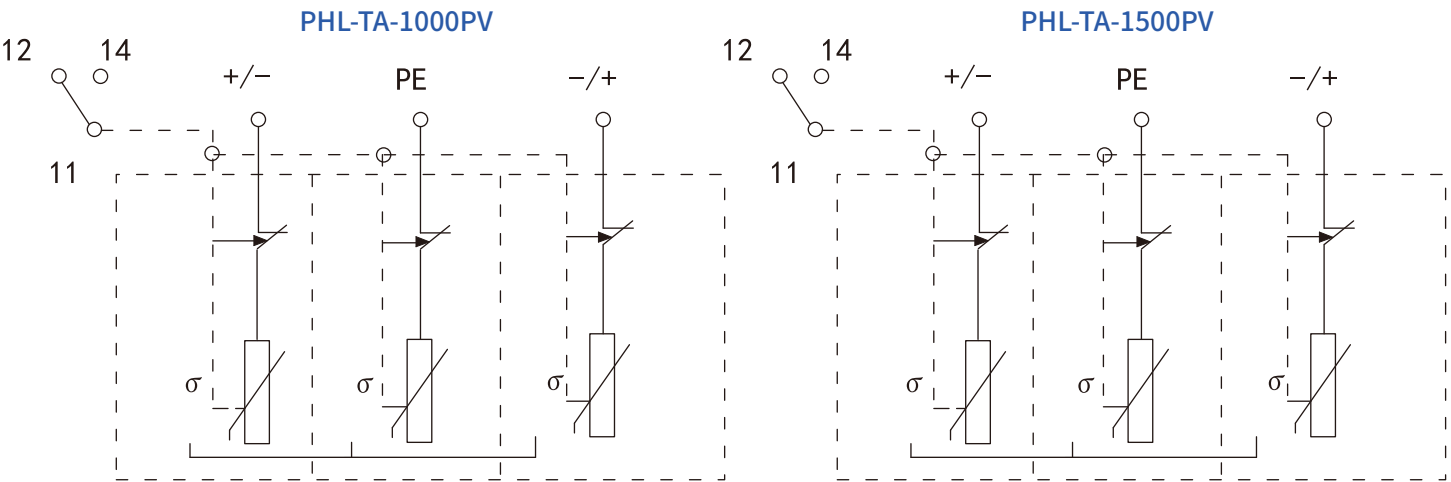
The second-level photovoltaic DC power surge protector is specially designed for solar photovoltaic systems and is suitable for DC photovoltaic power protection in the combiner box.According to EN 5053911,GB/18802-31 photovoltaic surge protector test standards.

Main characteristics:

- (1)Complete pre-wiring base,which facilitates the unique wiring mode of photovoltaic system;
- (2)Y-type connection mode,to avoid the generator circuit from damaging the arrester due to insulation failure;
- (3)Special anti-DC arcing device to avoid accidents caused by arcing

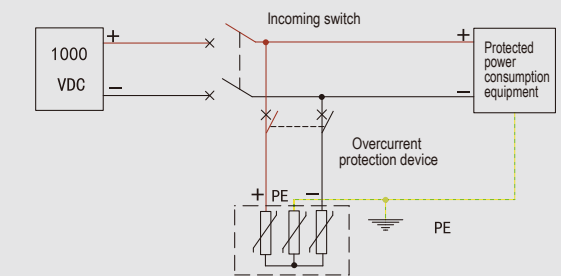
Technical data

Maximum working voltage Ucpv	1000V	1500V
Nominal discharge current In (8 / 20μs)	20kA	20kA
The maximum discharge current (8 / 20μs)	40kA	40kA
Protection voltage Up (under In)	< 3.5kV	< 5.0kV
Response time	25ns	25ns
Aging thermal separation function	Yes	Yes
Aging indicator function	Yes (indicating window turns from green to red)	Yes (indicating window turns from green to red)
Working temperature range	-40 ℃ ~ +80 ℃	-40 ℃ ~ +80 ℃
Remote signaling function	Optional	Optional
RS485 communication	Optional	Optional
Cross-sectional area of connecting wire	1.5~2.5mm²	1.5~2.5mm²
Installation method	DIN35mm rail	DIN35mm rail
Housing material	UL94-V0	UL94-V0
Protection grades	IP 20	IP 20
Test standard	GB/T18802.31/EN50539-11	GB/T18802.31/EN50539-11

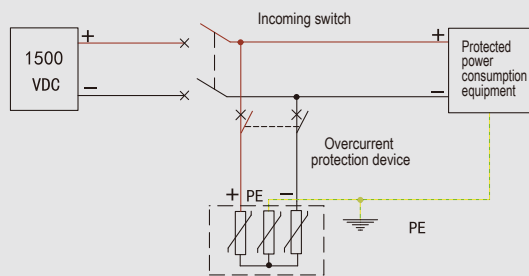


Schematic diagram

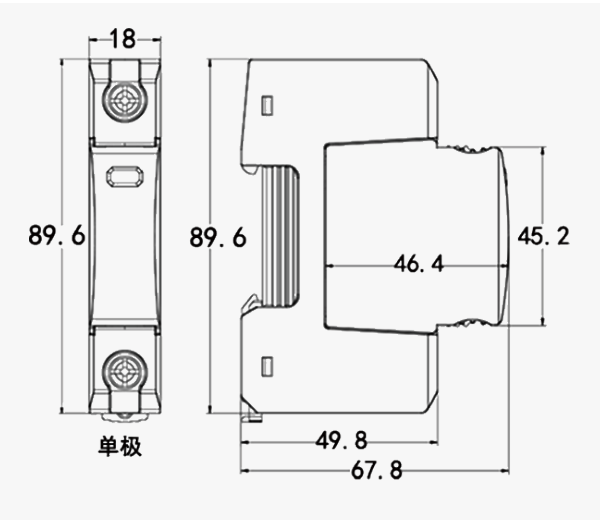
PHL-TA-1000PV



PHL-TA-1500PV



Dimension drawings



AC Power SPD (20kA)



Product overview

The three-phase power surge protector used in type II adopts the common-mode protection mode of phase-to-ground wire (PEN), which is suitable for installation at the junction of LPZ1 and LPZ2.

Main feature

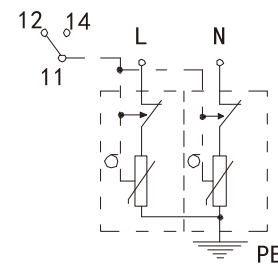
- (1) Module self-locking function to avoid the loss of loose surface protection;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

Technical data

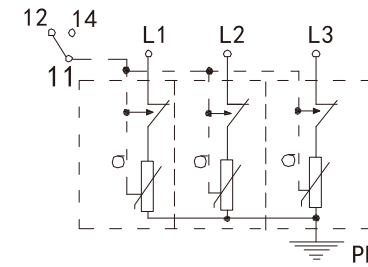
Rated operating voltage U_n	230/400VAC			230/400VAC			230/400VAC		
Maximum operating voltage U_c	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC
Protection voltage U_p (under I_n)	$U_p < 1.2kV$	$U_p < 1.5kV$	$U_p < 1.7kV$	$U_p < 1.2kV$	$U_p < 1.5kV$	$U_p < 1.7kV$	$U_p < 1.2kV$	$U_p < 1.5kV$	$U_p < 1.7kV$
Nominal discharge current I_n (8 / 20 μs)	10kA			10kA			10kA		
Maximum discharge current I_{max} (8 / 20 μs)	20kA			20kA			20kA		
Cross-sectional area of connecting wire	1.5mm ² ~25mm ² Flexible wire			1.5mm ² ~25mm ² Flexible wire			1.5mm ² ~25mm ² Flexible wire		
Response time	< 25ns			< 25ns			< 25ns		
Leakage current	< 10 μA			< 10 μA			< 10 μA		
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20			IP 20			IP 20		
Housing material/flammability rating	UL94-V0			UL94-V0			UL94-V0		
Test standard	GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11		
Applied power system	Single phase two wire			Three-phase four-wire (TN-C system) Three-phase three-wire (IT system)			Three-phase five-wire (TN-S system)		
Aging indicator function	Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)		
Fuse or circuit breaker selection(A)	25、32			25、32			25、32		
Aging thermal separation function	Yes			Yes			Yes		
Remote signaling function	Optional			Optional			Optional		
RS485 communication	Optional			Optional			Optional		
Working temperature range	-40℃ ~ +80℃			-40℃ ~ +80℃			-40℃ ~ +80℃		
Installation method	DIN35mm rail			DIN35mm rail			DIN35mm rail		

AC Power SPD (20kA)

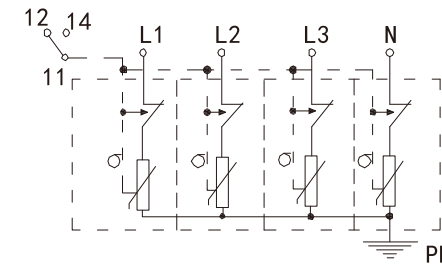
PHL-TA-20/385/2P



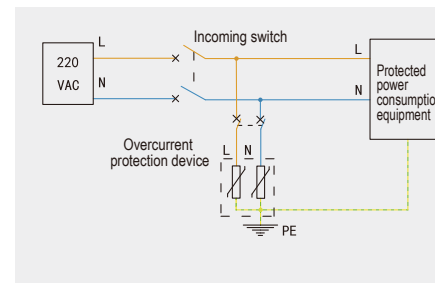
PHL-TA-20/385/3P



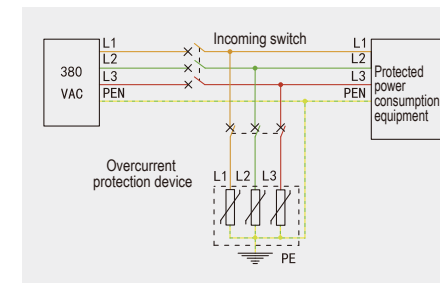
PHL-TA-20/385/4P



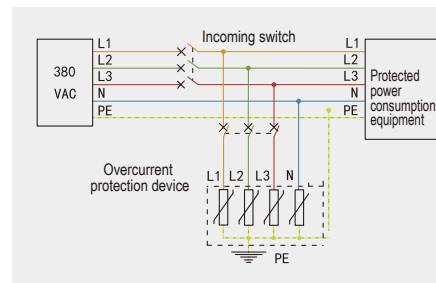
Schematic diagram



Single-phase 2-wire(TT) System
PHL-TA-20/385/2P

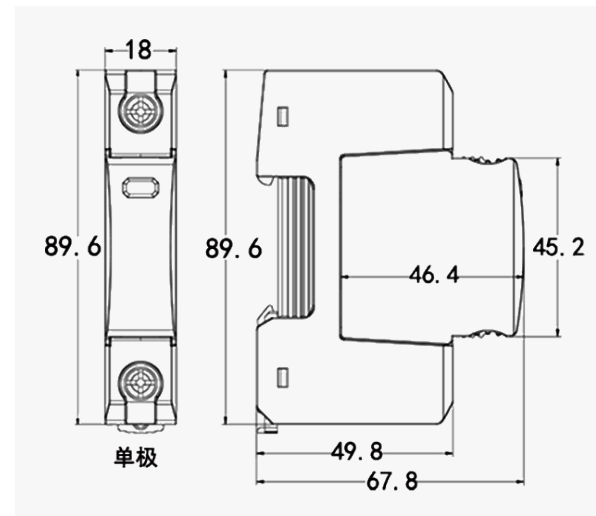


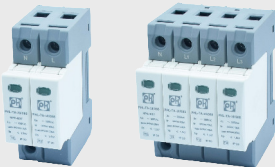
3-phase 4-wire(TN-C) System
PHL-TA-20/385/3P



3-phase 5-wire(TN-S) System
PHL-TA-20/385/4P

Dimension drawings





Product overview

The three-phase power surge protector used in type II adopts the common differential mode protection mode of phase line to zero line and zero line to ground, which is suitable to be installed in the shunt distribution cabinet of TT power supply system and at the junction of other LPZ1 areas and LPZ2 areas and subsequent partitions.

Main feature

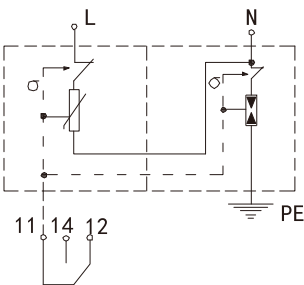
(1) The base is pre-connected to facilitate wiring ;

(2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

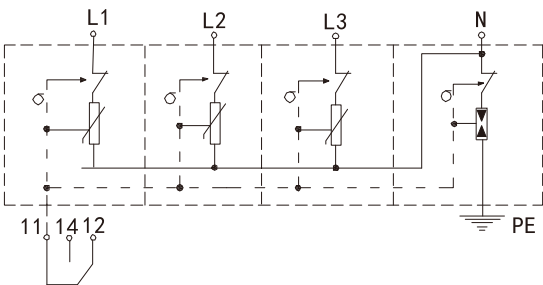
Technical data

	N-PE	L-N	L-N	L-N	N-PE	L-N	L-N	L-N
Rated operating voltage Un	230/400VAC				230/400VAC			
Maximum operating voltage Uc	255VAC	275VAC	385VAC	440VAC	255VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<1.2kV	Up<1.2kV	Up<1.5kV	Up<1.7kV	Up<1.2kV	Up<1.2kV	Up<1.5kV	Up<1.7kV
Nominal discharge current In (8 / 20μs)	10kA				10kA			
Maximum discharge current Imax (8 / 20μs)	20kA				20kA			
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire				1.5mm²~25mm² Flexible wire			
Response time	<25ns				<25ns			
Leakage current	<10μA				<10μA			
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20				IP 20			
Housing material/flammability rating	UL94-V0				UL94-V0			
Test standard	GB/T 18802.11/IEC 61643-11				GB/T 18802.11/IEC 61643-11			
Applied power system	Single phase(TT system)				Three-phase four-wire(TT system)			
Aging indicator function	Yes(Indicator window turns from green to red)				Yes(Indicator window turns from green to red)			
Fuse or circuit breaker selection(A)	25、32				25、32			
Aging thermal separation function	Yes				Yes			
Remote signaling function	Optional				Optional			
RS485 communication	Optional				Optional			
Working temperature range	-40℃~+80℃				-40℃~+80℃			
Installation method	DIN35mm rail				DIN35mm rail			

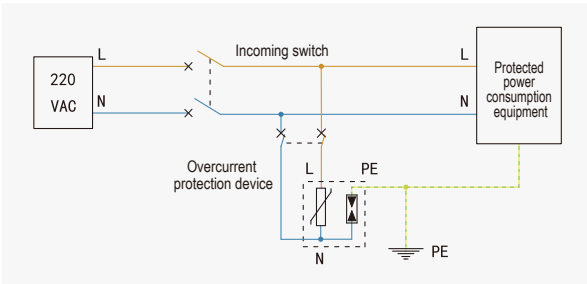
PHL-TA-20/385/1P+N



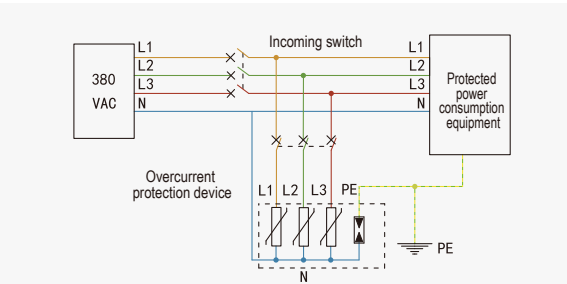
PHL-TA-20/385/3P+N



Schematic diagram

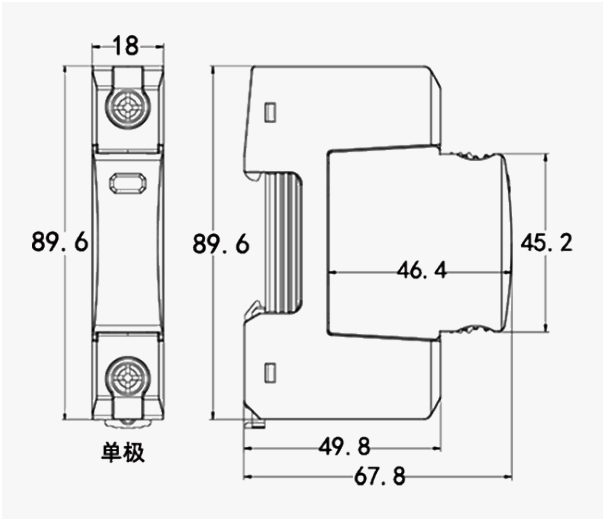


Single-phase (TT) System
PHL-TA-20/385/1P+N



Three-phase four-wire(TT system)
PHL-TA-20/385/3P+N

Dimension drawings



AC Power SPD (40kA)



Product overview

The three-phase power surge protector used in type II adopts the common-mode protection mode of phase-to-ground wire (PEN), which is suitable for installation at the junction of LPZ1 and LPZ2.

Main feature

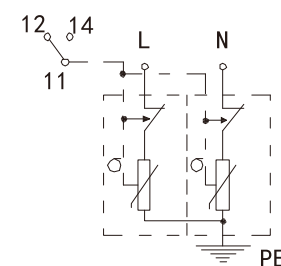
- (1) Module self-locking function to avoid the loss of loose surface protection;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.
- (3) The base is with pre-connected wiring, easy to wire.

Technical data

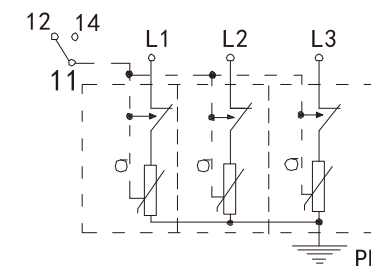
Rated operating voltage Un	230/400VAC			230/400VAC			230/400VAC		
Maximum operating voltage Uc	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<1.4kV	Up<1.8kV	Up<2.0kV	Up<1.4kV	Up<1.8kV	Up<2.0kV	Up<1.4kV	Up<1.8kV	Up<2.0kV
Nominal discharge current In (8 / 20μs)	20kA			20kA			20kA		
Maximum discharge current Imax (8 / 20μs)	40kA			40kA			40kA		
Cross-sectional area of connecting wire	1.5mm ² ~25mm ² Flexible wire			1.5mm ² ~25mm ² Flexible wire			1.5mm ² ~25mm ² Flexible wire		
Response time	< 25ns			< 25ns			< 25ns		
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20			IP 20			IP 20		
Housing material/flammability rating	UL94-V0			UL94-V0			UL94-V0		
Test standard	GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11		
Applied power system	Single phase two wire			Three-phase four-wire(TN-C system) Three-phase three-wire(IT system)			Three-phase five-wire(TN-S system)		
Aging indicator function	Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)		
Fuse or circuit breaker selection(A)	50、63			50、63			50、63		
Aging thermal separation function	Yes			Yes			Yes		
Remote signaling function	Optional			Optional			Optional		
RS485 communication	Optional			Optional			Optional		
Working temperature range	-40℃ ~ +80℃			-40℃ ~ +80℃			-40℃ ~ +80℃		
Installation method	DIN35mm rail			DIN35mm rail			DIN35mm rail		

AC Power SPD (40kA)

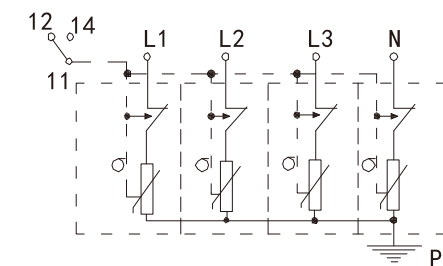
PHL-TA-40/385/2P



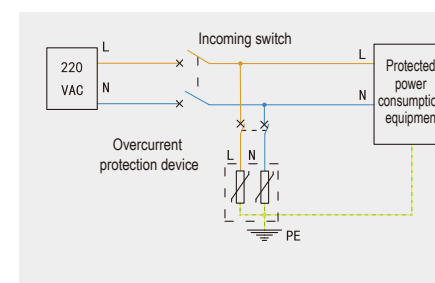
PHL-TA-40/385/3P



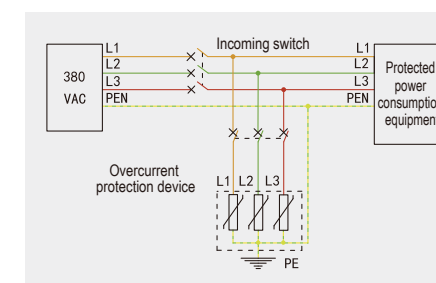
PHL-TA-40/385/4P



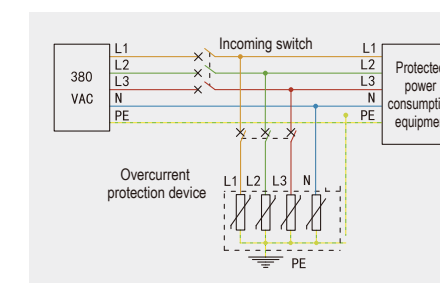
Schematic diagram



Single-phase 2-wire(TT) System
PHL-TA-40/385/2P

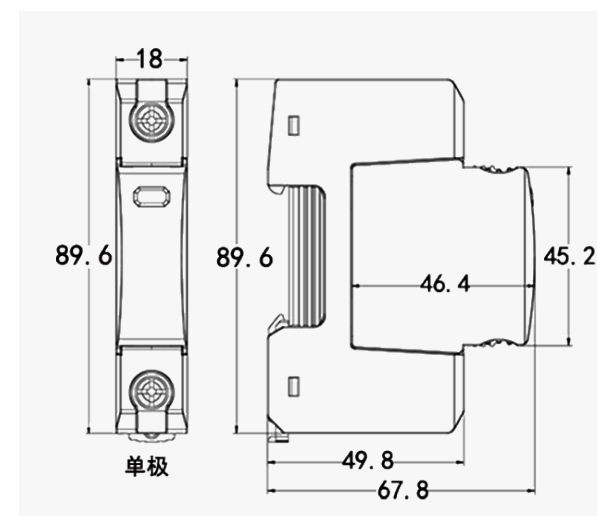


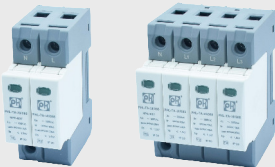
3-phase 4-wire(TN-C) System
PHL-TA-40/385/3P



3-phase 5-wire(TN-S) System
PHL-TA-40/385/4P

Dimension drawings





Product overview

The three-phase power surge protector used in type II adopts the common differential mode protection mode of phase line to zero line and zero line to ground, which is suitable to be installed in the shunt distribution cabinet of TT power supply system and at the junction of other LPZ1 areas and LPZ2 areas and subsequent partitions.

Main feature

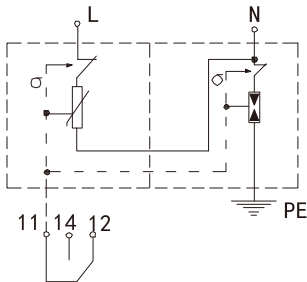
(1) The base is pre-connected to facilitate wiring;

(2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

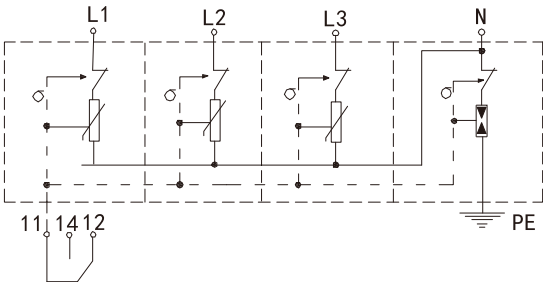
Technical data

	N-PE	L-N	L-N	L-N	N-PE	L-N	L-N	L-N
Rated operating voltage Un	230/400VAC				230/400VAC			
Maximum operating voltage Uc	255VAC	275VAC	385VAC	440VAC	255VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<1.5kV	Up<1.4kV	Up<1.8kV	Up<2.0kV	Up<1.5kV	Up<1.4kV	Up<1.8kV	Up<2.0kV
Nominal discharge current In (8 / 20μs)	20kA				20kA			
Maximum discharge current Imax (8 / 20μs)	40kA				40kA			
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire				1.5mm²~25mm² Flexible wire			
Response time	<25ns				<25ns			
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20				IP 20			
Housing material/flammability rating	UL94-V0				UL94-V0			
Test standard	GB/T 18802.11/IEC 61643-11				GB/T 18802.11/IEC 61643-11			
Applied power system	Single phase(TT system)				Three-phase four-wire(TT system)			
Aging indicator function	Yes(Indicator window turns from green to red)				Yes(Indicator window turns from green to red)			
Fuse or circuit breaker selection(A)	50、63				50、63			
Aging thermal separation function	Yes				Yes			
Remote signaling function	Optional				Optional			
RS485 communication	Optional				Optional			
Working temperature range	-40℃~+80℃				-40℃~+80℃			
Installation method	DIN35mm rail				DIN35mm rail			

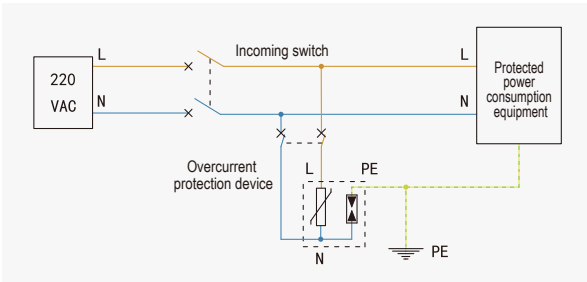
PHL-TA-40/385/1P+N



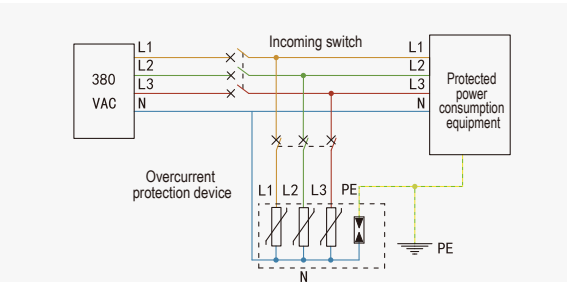
PHL-TA-40/385/3P+N



Schematic diagram

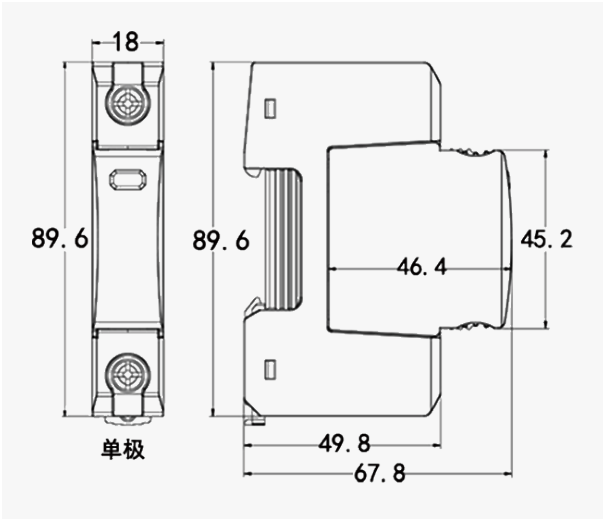


Single-phase (TT) System
PHL-TA-40/385/1P+N



Three-phase four-wire(TT system)
PHL-TA-40/385/3P+N

Dimension drawings





Product overview

The three-phase power surge protector used in type II adopts the common-mode protection mode of phase-to-ground wire (PEN), which is suitable for installation at the junction of LPZ1 and LPZ2.

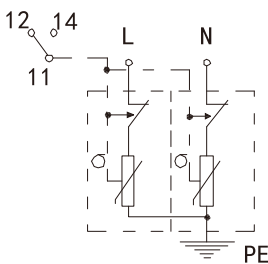
Main feature

- (1) Module self-locking function to avoid the loss of loose surface protection;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.
- (3) The base is with pre-connected wiring, easy to wire.

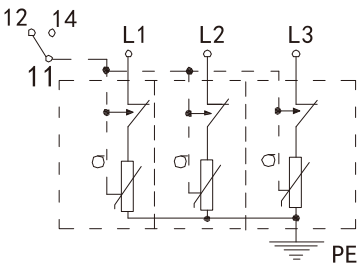
Technical data

Rated operating voltage Un	230/400VAC			230/400VAC			230/400VAC		
Maximum operating voltage Uc	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<1.6kV	Up<2.0kV	Up<2.2kV	Up<1.6kV	Up<2.0kV	Up<2.2kV	Up<1.6kV	Up<2.0kV	Up<2.2kV
Nominal discharge current In (8 / 20μs)	40kA			40kA			40kA		
Maximum discharge current Imax (8 / 20μs)	80kA			80kA			80kA		
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire			1.5mm²~25mm² Flexible wire			1.5mm²~25mm² Flexible wire		
Response time	<25ns			<25ns			<25ns		
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20			IP 20			IP 20		
Housing material/flammability rating	UL94-V0			UL94-V0			UL94-V0		
Test standard	GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11		
Applied power system	Three-phase five-wire (TN-S system)			Three-phase five-wire (TN-S system) Three-phase five-wire (TN-S system)			Three-phase five-wire (TN-S system)		
Aging indicator function	Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)		
Fuse or circuit breaker selection(A)	63、100			63、100			63、100		
Aging thermal separation function	Yes			Yes			Yes		
Remote signaling function	Optional			Optional			Optional		
RS485 communication	Optional			Optional			Optional		
Working temperature range	-40℃~+80℃			-40℃~+80℃			-40℃~+80℃		
Installation method	DIN35mm rail			DIN35mm rail			DIN35mm rail		

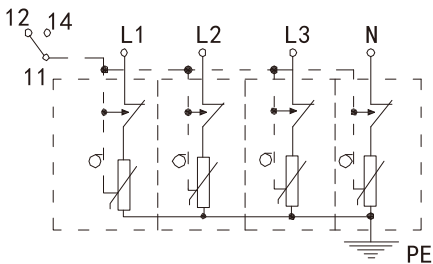
PHL-TA-80/385/2P



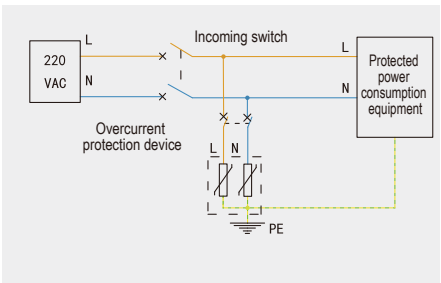
PHL-TA-80/385/3P



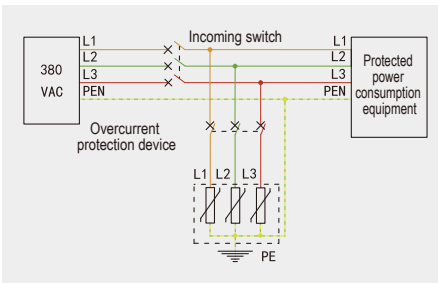
PHL-TA-80/385/4P



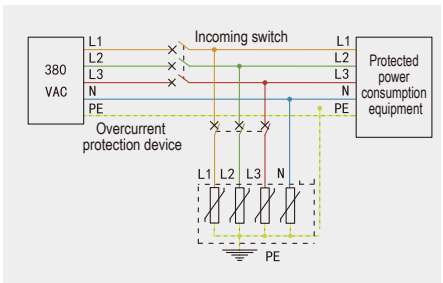
Schematic diagram



Single-phase 2-wire(TT) System
PHL-TA-80/385/2P

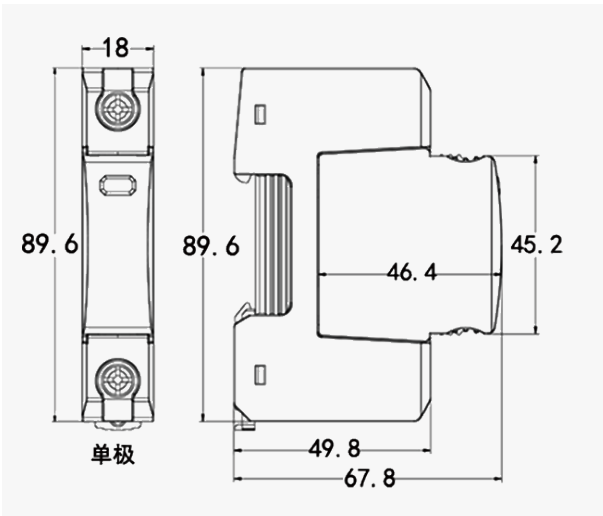


3-phase 4-wire(TN-C) System
PHL-TA-80/385/3P



3-phase 5-wire(TN-S) System
PHL-TA-80/385/4P

Dimension drawings





Product overview

The three-phase power surge protector used in type II adopts the common differential mode protection mode of phase line to zero line and zero line to ground, which is suitable to be installed in the shunt distribution cabinet of TT power supply system and at the junction of other LPZ1 areas and LPZ2 areas and subsequent partitions.

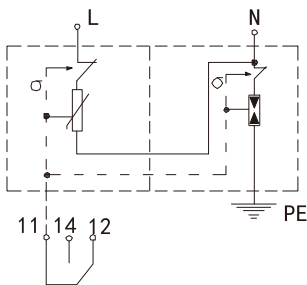
Main feature

- (1) The base is pre-connected to facilitate wiring ;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

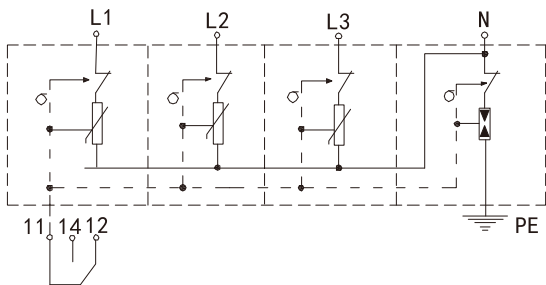
Technical data

	N-PE	L-N	L-N	L-N	N-PE	L-N	L-N	L-N
Rated operating voltage Un	230/400VAC				230/400VAC			
Maximum operating voltage Uc	255VAC	275VAC	385VAC	440VAC	255VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<1.5kV	Up<1.6kV	Up<2.0kV	Up<2.2kV	Up<1.5kV	Up<1.6kV	Up<2.0kV	Up<2.2kV
Nominal discharge current In (8 / 20μs)	40kA				40kA			
Maximum discharge current Imax (8 / 20μs)	80kA				80kA			
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire				1.5mm²~25mm² Flexible wire			
Response time	<25ns				<25ns			
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20				IP 20			
Housing material/flammability rating	UL94-V0				UL94-V0			
Test standard	GB/T 18802.11/IEC 61643-11				GB/T 18802.11/IEC 61643-11			
Applied power system	Single phase(TT system)				Three-phase four-wire(TT system)			
Aging indicator function	Yes(Indicator window turns from green to red)				Yes(Indicator window turns from green to red)			
Fuse or circuit breaker selection(A)	63、100				63、100			
Aging thermal separation function	Yes				Yes			
Remote signaling function	Optional				Optional			
RS485 communication	Optional				Optional			
Working temperature range	-40℃~+80℃				-40℃~+80℃			
Installation method	DIN35mm rail				DIN35mm rail			

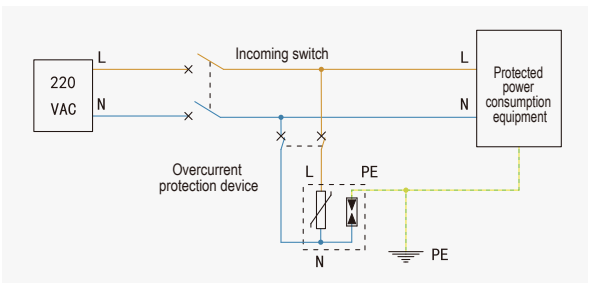
PHL-TA-80/385/1P+N



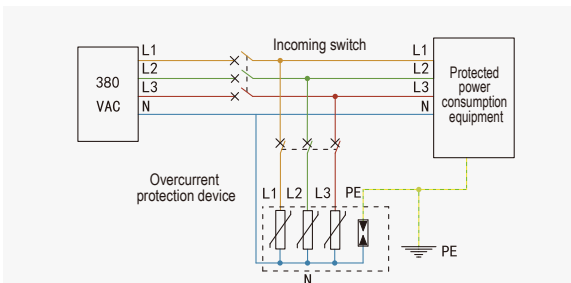
PHL-TA-80/385/3P+N



Schematic diagram

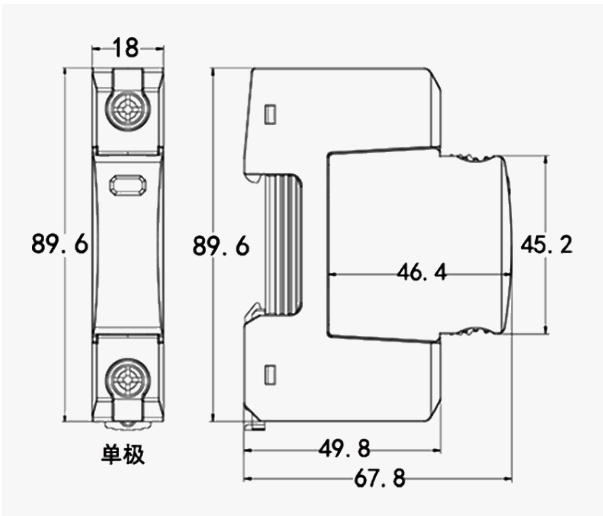


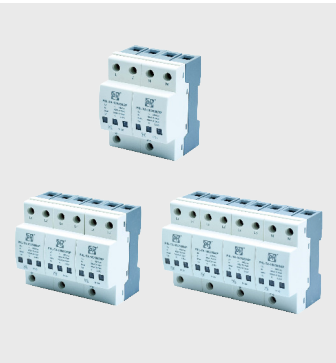
Single-phase (TT) System
PHL-TA-80/385/1P+N



Three-phase four-wire(TT system)
PHL-TA-80/385/3P+N

Dimension drawings





Product overview

The three-phase power surge protector used in type II adopts the common-mode protection mode of phase-to-ground wire (PEN), which is suitable for installation at the junction of LPZ1 and LPZ2.

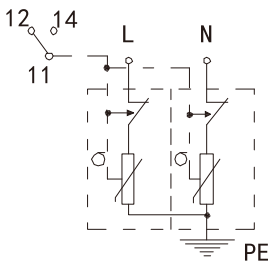
Main feature

- (1) Module self-locking function to avoid the loss of loose surface protection;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.
- (3) The base is with pre-connected wiring, easy to wire.

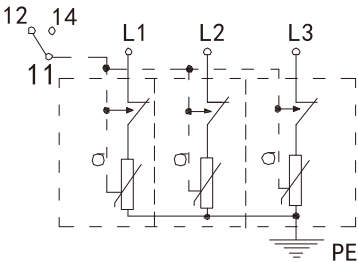
Technical data

Rated operating voltage Un	230/400VAC			230/400VAC			230/400VAC		
Maximum operating voltage Uc	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<2.0kV	Up<2.4kV	Up<2.6kV	Up<2.0kV	Up<2.4kV	Up<2.6kV	Up<2.0kV	Up<2.4kV	Up<2.6kV
Nominal discharge current In (8 / 20μs)	60kA			60kA			60kA		
Maximum discharge current Imax (8 / 20μs)	100kA			100kA			100kA		
Cross-sectional area of connecting wire	1.5mm ² ~25mm ² Flexible wire			1.5mm ² ~25mm ² Flexible wire			1.5mm ² ~25mm ² Flexible wire		
Response time	<25ns			<25ns			<25ns		
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20			IP 20			IP 20		
Housing material/flammability rating	UL94-V0			UL94-V0			UL94-V0		
Test standard	GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11		
Applied power system	Single phase two wire			Three-phase four-wire (TN-C system)			Three-phase five-wire (TN-S system)		
				Three-phase three-wire(IT system)					
Aging indicator function	Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)			Yes(Indicator window turns from green to red)		
Fuse or circuit breaker selection(A)	100、125			100、125			100、125		
Aging thermal separation function	Yes			Yes			Yes		
Remote signaling function	Optional			Optional			Optional		
RS485 communication	Optional			Optional			Optional		
Working temperature range	-40℃~+80℃			-40℃~+80℃			-40℃~+80℃		
Installation method	DIN35mm rail			DIN35mm rail			DIN35mm rail		

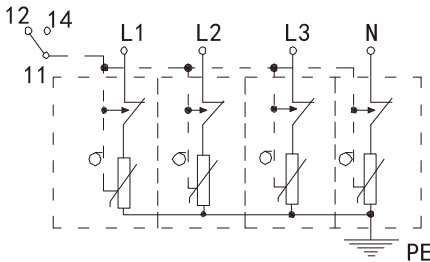
PHL-TA-100/385/2P



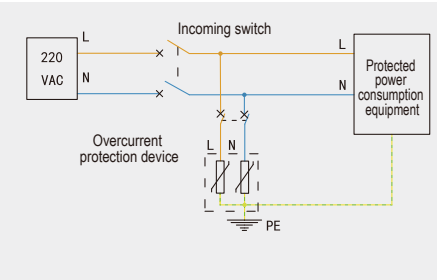
PHL-TA-100/385/3P



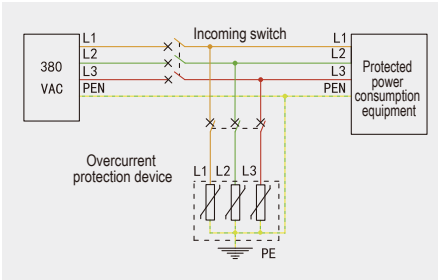
PHL-TA-100/385/4P



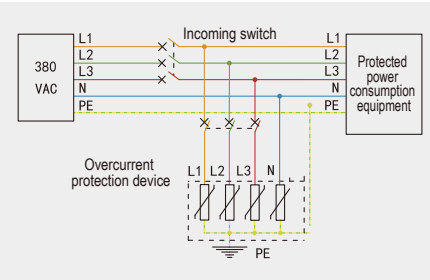
Schematic diagram



Single-phase 2-wire(TT) System
PHL-TA-100/385/2P

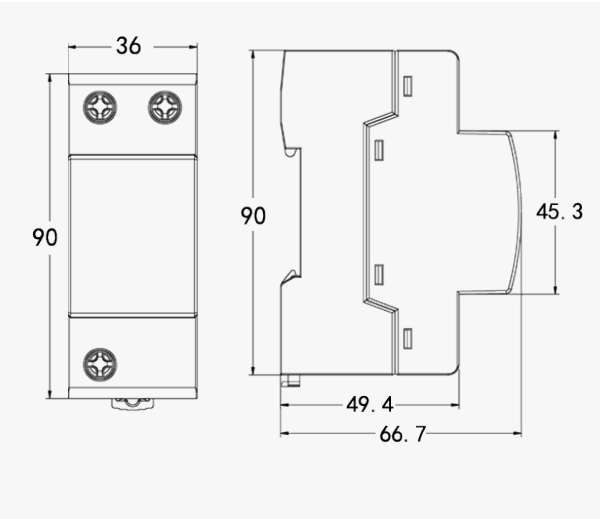


3-phase 4-wire(TN-C) System
PHL-TA-100/385/3P



3-phase 5-wire(TN-S) System
PHL-TA-100/385/4P

Dimension drawings



AC Power SPD (100kA)



Product overview

The three-phase power surge protector used in type II adopts the common differential mode protection mode of phase line to zero line and zero line to ground, which is suitable to be installed in the shunt distribution cabinet of TT power supply system and at the junction of other LPZ1 areas and LPZ2 areas and subsequent partitions.

Main feature

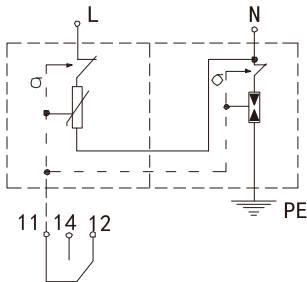
- (1) The base is pre-connected to facilitate wiring;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

Technical data

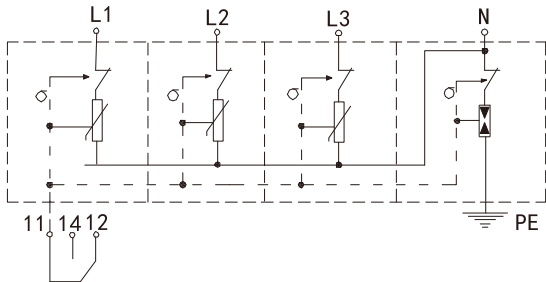
	N-PE	L-N	L-N	L-N	N-PE	L-N	L-N	L-N
Rated operating voltage Un	230/400VAC				230/400VAC			
Maximum operating voltage Uc	255VAC	275VAC	385VAC	440VAC	255VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<2.0kV	Up<2.0kV	Up<2.4kV	Up<2.6kV	Up<2.0kV	Up<2.0kV	Up<2.4kV	Up<2.6kV
Nominal discharge current In (8 / 20μs)	60kA				60kA			
Maximum discharge current Imax (8 / 20μs)	100kA				100kA			
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire				1.5mm²~25mm² Flexible wire			
Response time	<25ns				<25ns			
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20				IP 20			
Housing material/flammability rating	UL94-V0				UL94-V0			
Test standard	GB/T 18802.11/IEC 61643-11				GB/T 18802.11/IEC 61643-11			
Applied power system	Single phase(TT system)				Three-phase four-wire(TT system)			
Aging indicator function	Yes(Indicator window turns from green to red)				Yes(Indicator window turns from green to red)			
Fuse or circuit breaker selection(A)	100、125				100、125			
Aging thermal separation function	Yes				Yes			
Remote signaling function	Optional				Optional			
RS485 communication	Optional				Optional			
Working temperature range	-40℃~+80℃				-40℃~+80℃			
Installation method	DIN35mm rail				DIN35mm rail			

AC Power SPD (100kA)

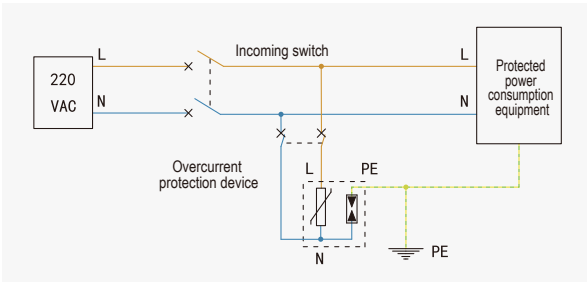
PHL-TA-100/385/1P+N



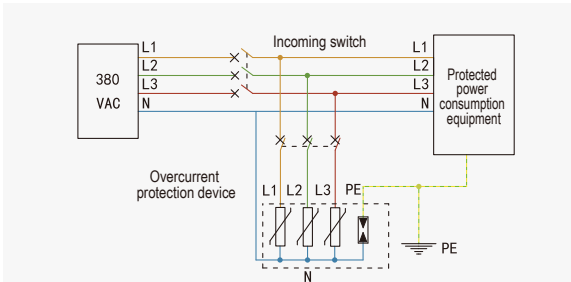
PHL-TA-100/385/3P+N



Schematic diagram

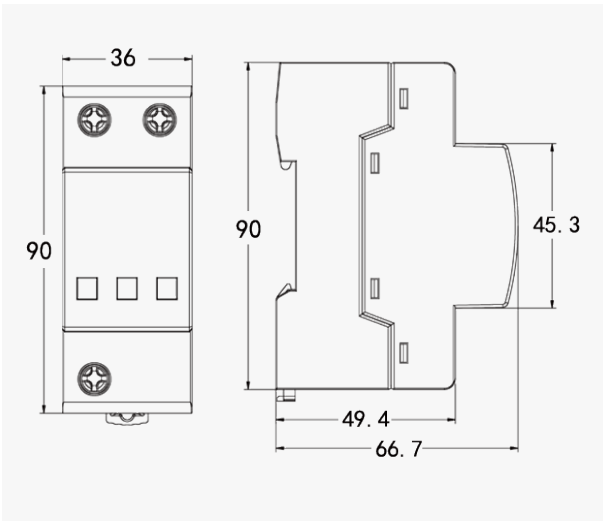


Single-phase (TT) System
PHL-TA-100/385/1P+N



Three-phase four-wire(TT system)
PHL-TA-100/385/3P+N

Dimension drawings





Product overview

The three-phase power surge protector used in type II adopts the common-mode protection mode of phase-to-ground wire (PEN), which is suitable for installation at the junction of LPZ1 and LPZ2.

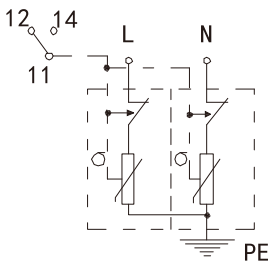
Main feature

- (1) Module self-locking function to avoid the loss of loose surface protection;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.
- (3) The base is with pre-connected wiring, easy to wire.

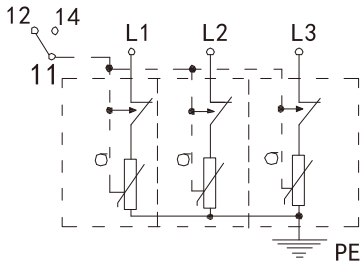
Technical data

Rated operating voltage Un	230/400VAC			230/400VAC			230/400VAC		
Maximum operating voltage Uc	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<2.4kV	Up<2.8kV	Up<3kV	Up<2.4kV	Up<2.8kV	Up<3kV	Up<2.4kV	Up<2.8kV	Up<3kV
Nominal discharge current In (8 / 20μs)	100kA			100kA			100kA		
Maximum discharge current Imax (8 / 20μs)	160kA			160kA			160kA		
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire			1.5mm²~25mm² Flexible wire			1.5mm²~25mm² Flexible wire		
Response time	<100ns			<100ns			<100ns		
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20			IP 20			IP 20		
Housing material/flammability rating	UL94-V0			UL94-V0			UL94-V0		
Test standard	GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11			GB/T 18802.11/IEC 61643-11		
Applied power system	Single phase two wire			Three-phase four-wire (TN-C system) Three-phase three-wire (IT system)			Three-phase five-wire (TN-S system)		
Fuse or circuit breaker selection(A)	125、160			125、160			125、160		
Aging thermal separation function	Yes			Yes			Yes		
Remote signaling function	Optional			Optional			Optional		
RS485 communication	Optional			Optional			Optional		
Working temperature range	-40℃~+80℃			-40℃~+80℃			-40℃~+80℃		
Installation method	DIN35mm rail			DIN35mm rail			DIN35mm rail		

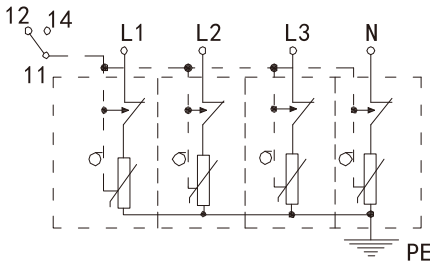
PHL-TA-160/385/2P



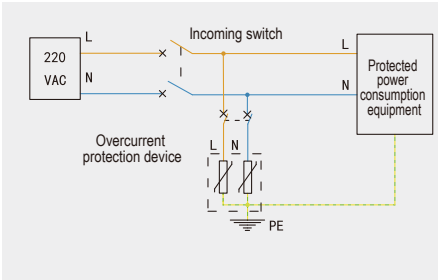
PHL-TA-160/385/3P



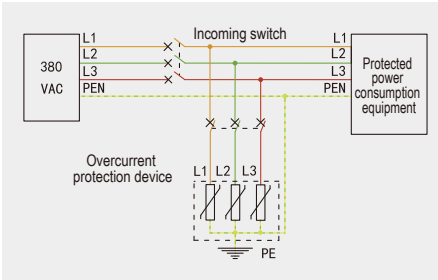
PHL-TA-160/385/4P



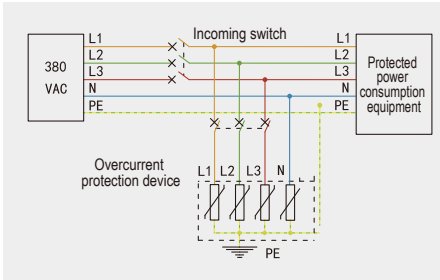
Schematic diagram



Single-phase 2-wire(TT) System
PHL-TA-160/385/2P

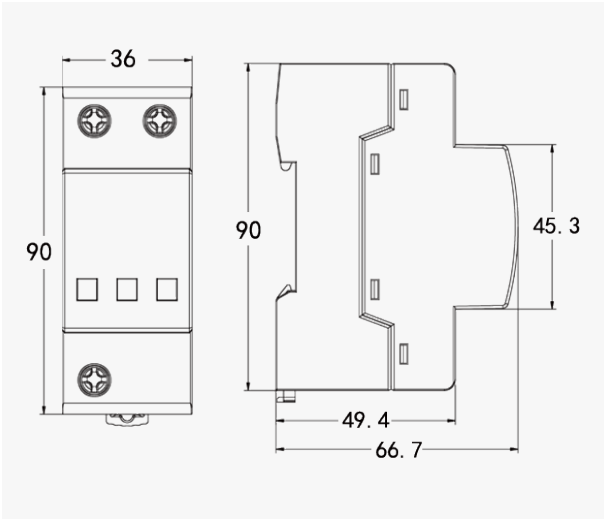


3-phase 4-wire(TN-C) System
PHL-TA-160/385/3P



3-phase 5-wire(TN-S) System
PHL-TA-160/385/4P

Dimension drawings



AC Power SPD (160kA)



Product overview

The three-phase power surge protector used in type II adopts the common differential mode protection mode of phase line to zero line and zero line to ground, which is suitable to be installed in the shunt distribution cabinet of TT power supply system and at the junction of other LPZ1 areas and LPZ2 areas and subsequent partitions.

Main feature

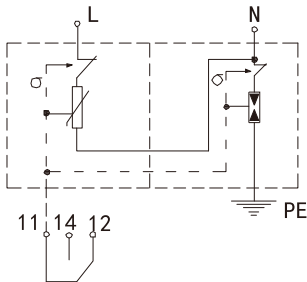
- (1) The discharge current is large. Meet T1 test requirements;
- (2) Zinc oxide ceramic material is used, which has stable performance and is not affected by environmental changes.

Technical data

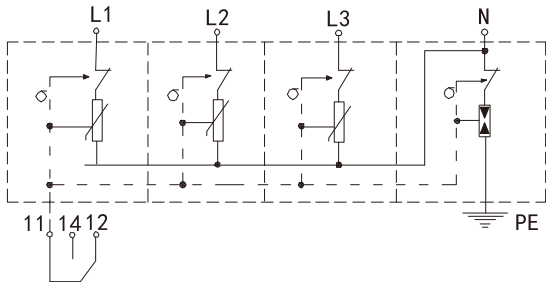
	N-PE	L-N	L-N	L-N	N-PE	L-N	L-N	L-N
Rated operating voltage Un	230/400VAC				230/400VAC			
Maximum operating voltage Uc	255VAC	275VAC	385VAC	440VAC	255VAC	275VAC	385VAC	440VAC
Protection voltage Up (under In)	Up<2.2kV	Up<2.4kV	Up<2.8kV	Up<3.0kV	Up<2.2kV	Up<2.4kV	Up<2.8kV	Up<3.0kV
Nominal discharge current In (8 / 20μs)	100kA				100kA			
Maximum discharge current Imax (8 / 20μs)	160kA				160kA			
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire				1.5mm²~25mm² Flexible wire			
Response time	<100ns				<100ns			
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20				IP 20			
Housing material/flammability rating	UL94-V0				UL94-V0			
Test standard	GB/T 18802.11/IEC 61643-11				GB/T 18802.11/IEC 61643-11			
Applied power system	Single phase(TT system)				Three-phase four-wire(TT system)			
Aging indicator function	Yes(Indicator window turns from green to red)				Yes(Indicator window turns from green to red)			
Fuse or circuit breaker selection(A)	125、160				125、160			
Aging thermal separation function	Yes				Yes			
Remote signaling function	Optional				Optional			
RS485 communication	Optional				Optional			
Working temperature range	-40℃~+80℃				-40℃~+80℃			
Installation method	DIN35mm rail				DIN35mm rail			

AC Power SPD (160kA)

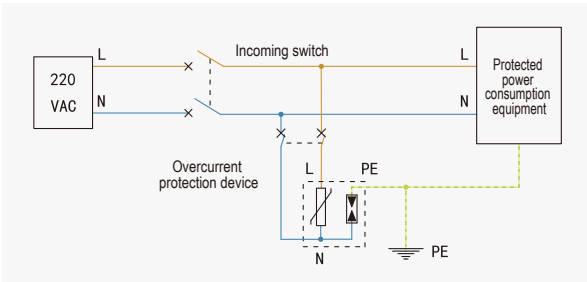
PHL-TA-160/385/1P+N



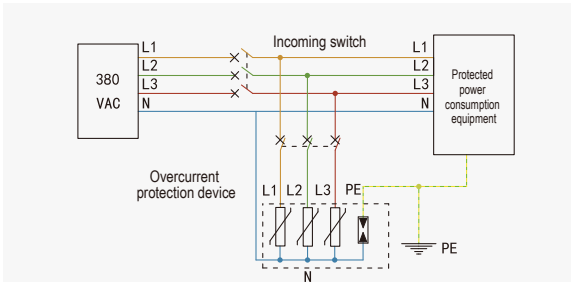
PHL-TA-160/385/3P+N



Schematic diagram

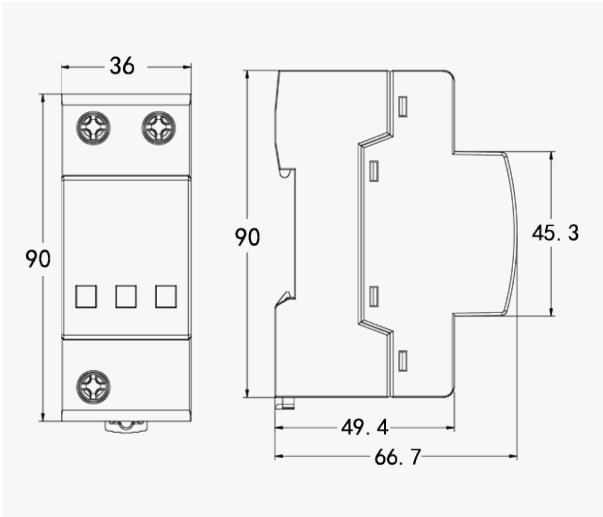


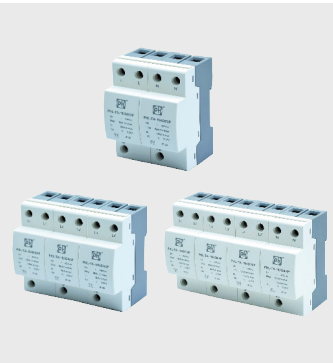
Single-phase (TT) System
PHL-TA-160/385/1P+N



Three-phase four-wire(TT system)
PHL-TA-160/385/3P+N

Dimension drawings





Product overview

It is used for the first-class power surge protector with lightning protection level of A and below, and is suitable for installation in areas with high lightning incidence, places where overhead lines directly enter the home, and other junctions between LPZ0A area and LPZ1 area.

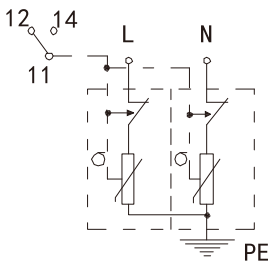
Main feature

- (1) Module self-locking function, to avoid losing protection due to looseness;
- (2)The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

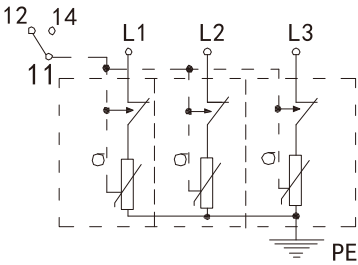
Technical data

Rated operating voltage Un	230/400VAC	230/400VAC	230/400VAC
Maximum operating voltage Uc	420VAC	420VAC	420VAC
Lightning surge current Iimp (10 / 350μs)	15kA	15kA	15kA
Protection voltage Up (under In)	Up< 2.2kV	Up< 2.2kV	Up< 2.2kV
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire	1.5mm²~25mm² Flexible wire	1.5mm²~25mm² Flexible wire
Response time	< 25ns	< 25ns	< 25ns
Leakage current	< 10μA	< 10μA	< 10μA
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material/flammability rating	UL94-V0	UL94-V0	UL94-V0
Test standard	GB/T 18802.11/IEC 61643-11	GB/T 18802.11/IEC 61643-11	GB/T 18802.11/IEC 61643-11
Applied power system	Single phase two wire	Three-phase four-wire (TN-C system) Three-phase three-wire (IT system)	Three-phase five-wire (TN-S system)
Fuse or circuit breaker selection(A)	125、 160	125、 160	125、 160
Aging thermal separation function	Yes	Yes	Yes
Remote signaling function	Optional	Optional	Optional
RS485 communication	Optional	Optional	Optional
Working temperature range	-40℃ ~+80℃	-40℃ ~+80℃	-40℃ ~+80℃
Installation method	DIN35mm rail	DIN35mm rail	DIN35mm rail

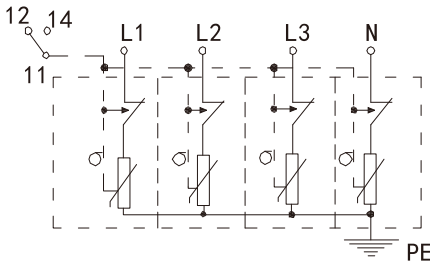
PHL-TA-15/420/2P



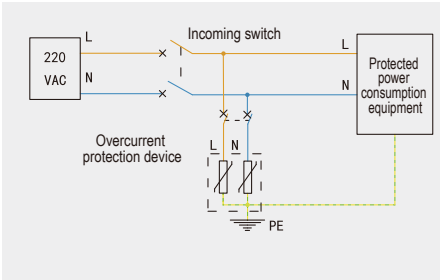
PHL-TA-15/420/3P



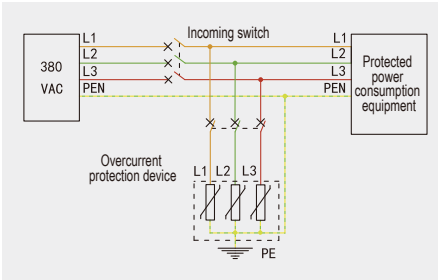
PHL-TA-15/420/4P



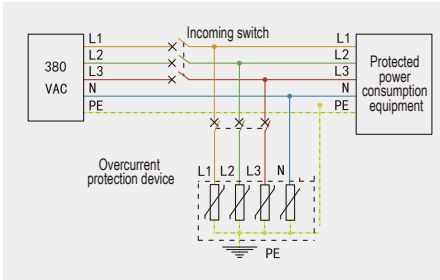
Schematic diagram



Single-phase 2-wire(TT) System
PHL-TA-15/420/2P

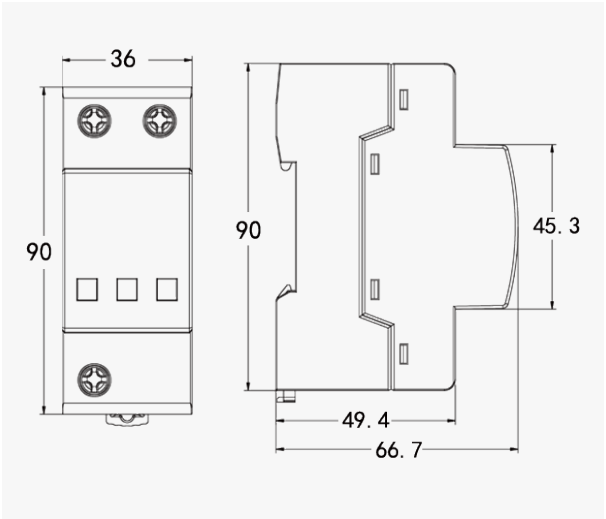


3-phase 4-wire(TN-C) System
PHL-TA-15/420/3P

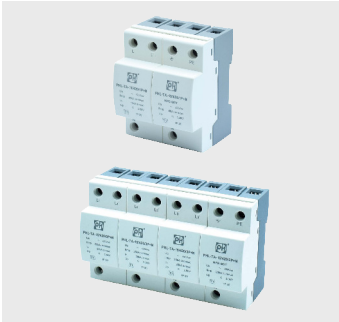


3-phase 5-wire(TN-S) System
PHL-TA-15/420/4P

Dimension drawings



AC Power SPD (15kA)



Product overview

It is used for the first-class power surge protector with lightning protection level of A and below, and is suitable for installation in areas with high lightning incidence, places where overhead lines directly enter the home, and other junctions between LPZ0A area and LPZ1 area.

Main feature

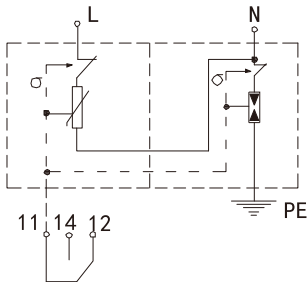
- (1) The base is pre-connected to facilitate wiring.
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

Technical data

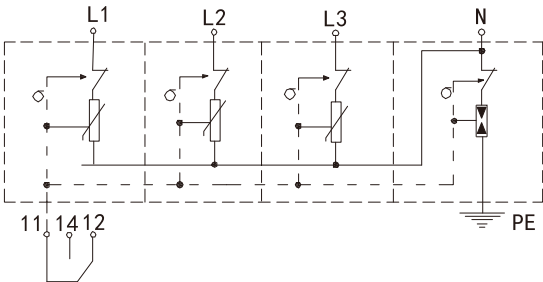
	N-PE	L-N	N-PE	L-N
Rated operating voltage Un	230/400VAC		230/400VAC	
Maximum operating voltage Uc	255VAC	420VAC	255VAC	420VAC
The maximum discharge current (8 / 20μs)	Up< 1.5kV	Up< 2.2kV	Up< 1.5kV	Up< 2.2kV
Lightning surge current Iimp (10 / 350μs)	15kA		15kA	
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire		1.5mm²~25mm² Flexible wire	
Response time	< 25ns		< 25ns	
Leakage current	< 10μA		< 10μA	
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20		IP 20	
Housing material/flammability rating	UL94-V0		UL94-V0	
Test standard	GB/T 18802.1/IEC 61643-11		GB/T 18802.1/IEC 61643-11	
Applied power system	Single phase(TT system)		Three-phase four-wire(TT system)	
Fuse or circuit breaker selection(A)	125、 160		125、 160	
Aging thermal separation function	Yes		Yes	
Remote signaling function	Optional		Optional	
RS485 communication	Optional		Optional	
Working temperature range	-40℃ ~ +80℃		-40℃ ~ +80℃	
Installation method	DIN35mm rail		DIN35mm rail	

AC Power SPD (15kA)

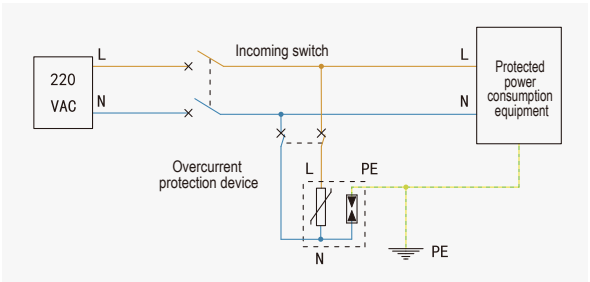
PHL-TA-15/420/1P+N



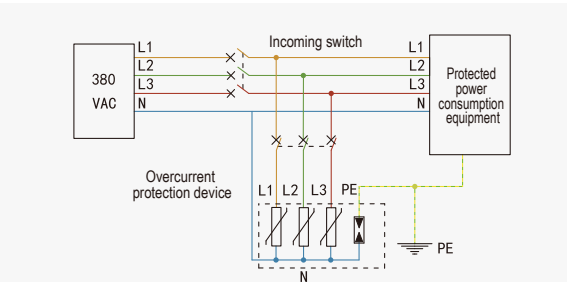
PHL-TA-15/420/3P+N



Schematic diagram

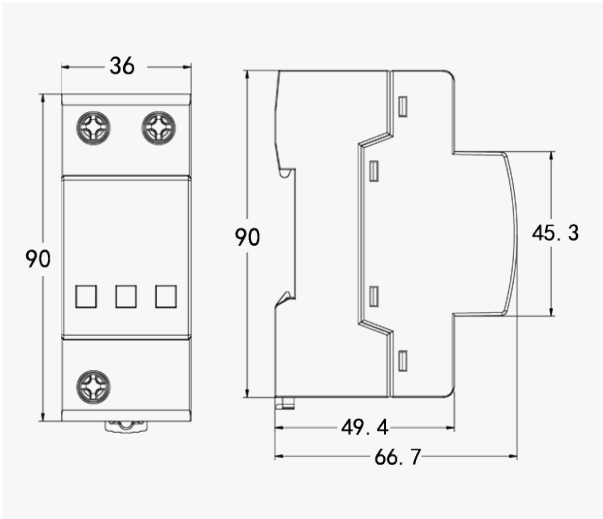


Single-phase (TT) System
PHL-TA-15/420/1P+N



Three-phase four-wire(TT system)
PHL-TA-15/420/3P+N

Dimension drawings



AC Power SPD (25kA)



Product overview

It is used for the first-class power surge protector with lightning protection level of A and below, and is suitable for installation in areas with high lightning incidence, places where overhead lines directly enter the home, and other junctions between LPZ0A area and LPZ1 area.

Main feature

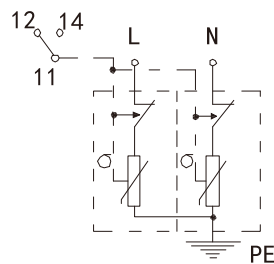
- (1) Module self-locking function, to avoid losing protection due to looseness;
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

Technical data

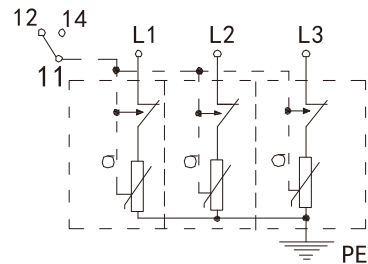
Rated operating voltage Un	230/400VAC	230/400VAC	230/400VAC
Maximum operating voltage Uc	420VAC	420VAC	420VAC
Lightning surge current Iimp (10 / 350μs)	25kA	25kA	25kA
Protection voltage Up (under In)	Up < 2.5kV	Up < 2.5kV	Up < 2.5kV
Cross-sectional area of connecting wire	1.5mm ² ~25mm ² Flexible wire	1.5mm ² ~25mm ² Flexible wire	1.5mm ² ~25mm ² Flexible wire
Response time	< 25ns	< 25ns	< 25ns
Leakage current	< 10μA	< 10μA	< 10μA
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20	IP 20
Housing material/flammability rating	UL94-V0	UL94-V0	UL94-V0
Test standard	GB/T 18802.11/IEC 61643-11	GB/T 18802.11/IEC 61643-11	GB/T 18802.11/IEC 61643-11
Applied power system	Single phase two wire	Three-phase four-wire (TN-C system) Three-phase three-wire (IT system)	Three-phase five-wire (TN-S system)
Fuse or circuit breaker selection(A)	160、250	160、250	160、250
Aging thermal separation function	Yes	Yes	Yes
Remote signaling function	Optional	Optional	Optional
RS485 communication	Optional	Optional	Optional
Working temperature range	-40℃ ~+80℃	-40℃ ~+80℃	-40℃ ~+80℃
Installation method	DIN35mm rail	DIN35mm rail	DIN35mm rail

AC Power SPD (25kA)

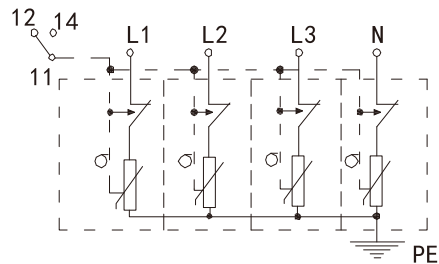
PHL-TA-25/420/2P



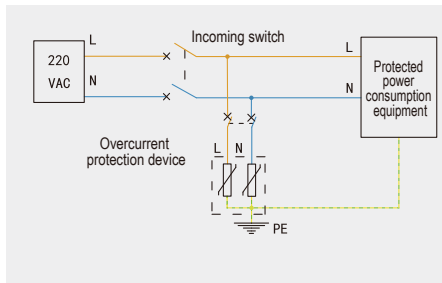
PHL-TA-25/420/3P



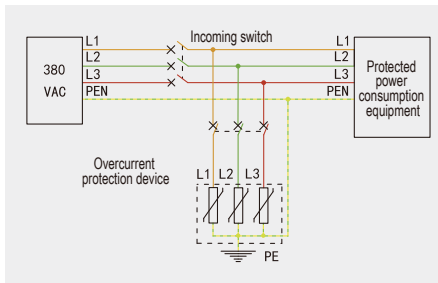
PHL-TA-25/420/4P



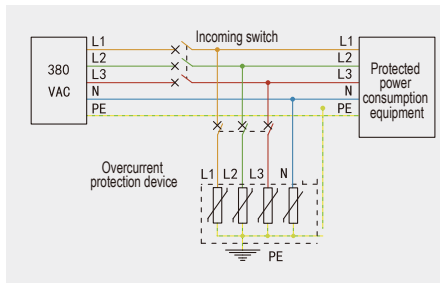
Schematic diagram



Single-phase 2-wire(TT) System
PHL-TA-25/420/2P

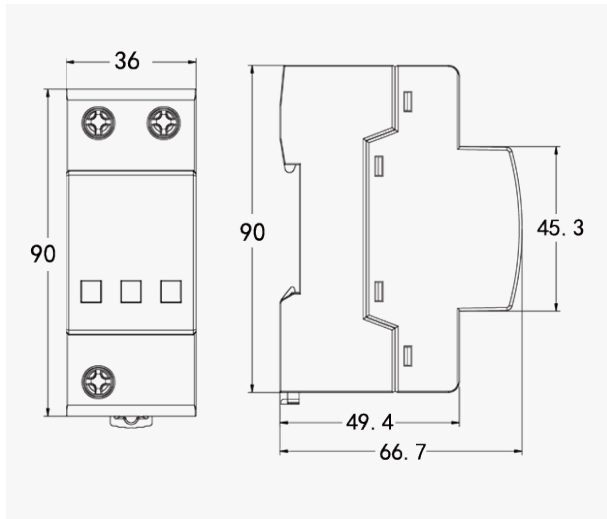


3-Phase 4-wire(TN-C) System
PHL-TA-25/420/3P



3-Phase 5-wire(TN-S) System
PHL-TA-25/420/4P

Dimension drawings



AC Power SPD (25kA)



Product overview

It is used for the first-class power surge protector with lightning protection level of A and below, and is suitable for installation in areas with high lightning incidence, places where overhead lines directly enter the home, and other junctions between LPZ0A area and LPZ1 area.

Main feature

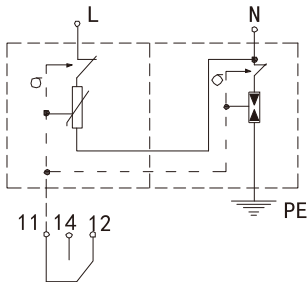
- (1) The base is pre-connected to facilitate wiring.
- (2) The "light press" function of the module allows for easy insertion and removal of the module, making it easy to replace.

Technical data

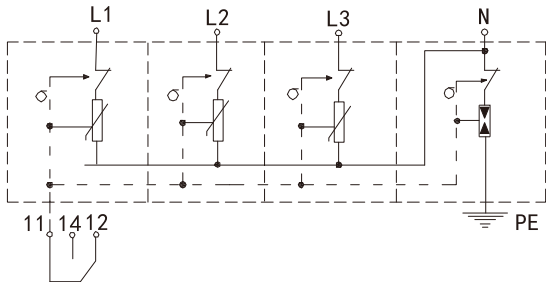
Rated operating voltage Un	230/400VAC	230/400VAC
Maximum operating voltage Uc	420VAC	420VAC
Lightning surge current Iimp (10 / 350μs)	25kA	25kA
The maximum discharge current (8 / 20μs)	Up<2.5kV	Up<2.5kV
Cross-sectional area of connecting wire	1.5mm²~25mm² Flexible wire	1.5mm²~25mm² Flexible wire
Response time	< 25ns	< 25ns
Leakage current	< 10μA	< 10μA
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20	IP 20
Housing material/flammability rating	UL94-V0	UL94-V0
Test standard	GB/T 18802.1/IEC 61643-11	GB/T 18802.1/IEC 61643-11
Applied power system	Single phase(TT system)	Three-phase four-wire(TT system)
Fuse or circuit breaker selection(A)	160、250	160、250
Aging thermal separation function	Yes	Yes
Remote signaling function	Optional	Optional
RS485 communication	Optional	Optional
Working temperature range	-40℃ ~ +80℃	-40℃ ~ +80℃
Installation method	DIN35mm rail	DIN35mm rail

AC Power SPD (25kA)

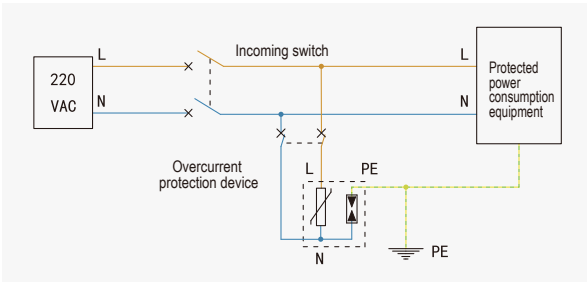
PHL-TA-25/420/1P+N



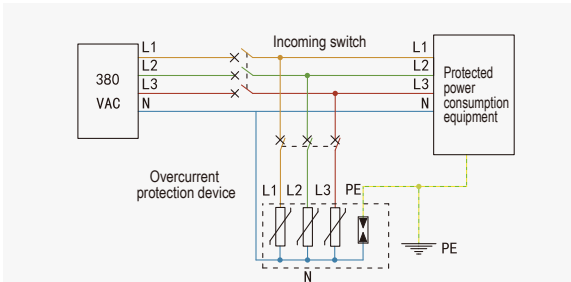
PHL-TA-25/420/3P+N



Schematic diagram

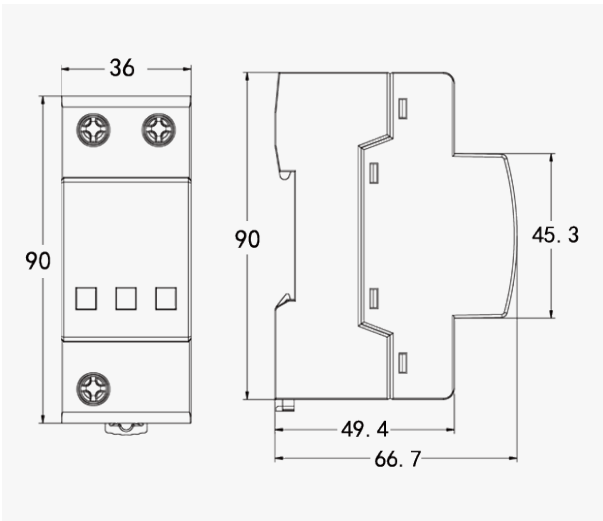


Single-phase (TT) System
PHL-TA-25/420/1P+N



Three-phase four-wire(TT system)
PHL-TA-25/420/3P+N

Dimension drawings



Backup protection device SCB



Product overview

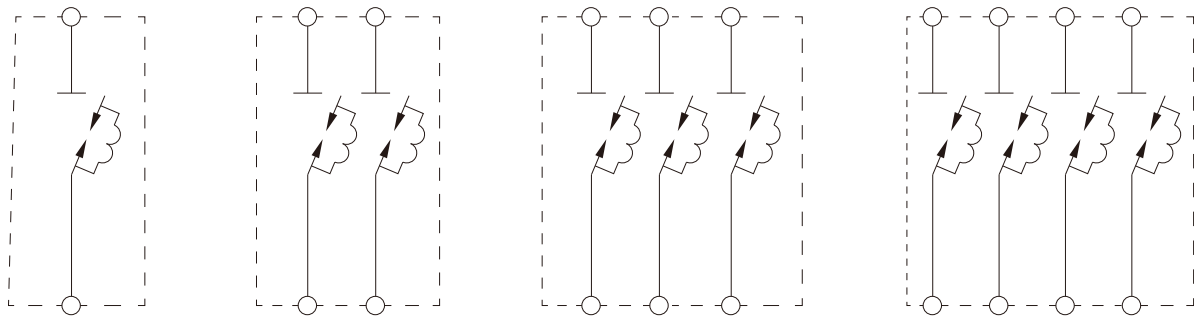
The SCB series is a backup protection device specially designed for surge protectors. It can be directly integrated with surge protectors for seamless compatibility and can withstand corresponding lightning test currents, meeting the requirements of NBIT 42150-2018.

- Product function
- 1.Surge protector aging failure protection
 - 2.Short-circuit failure protection of surge protectors

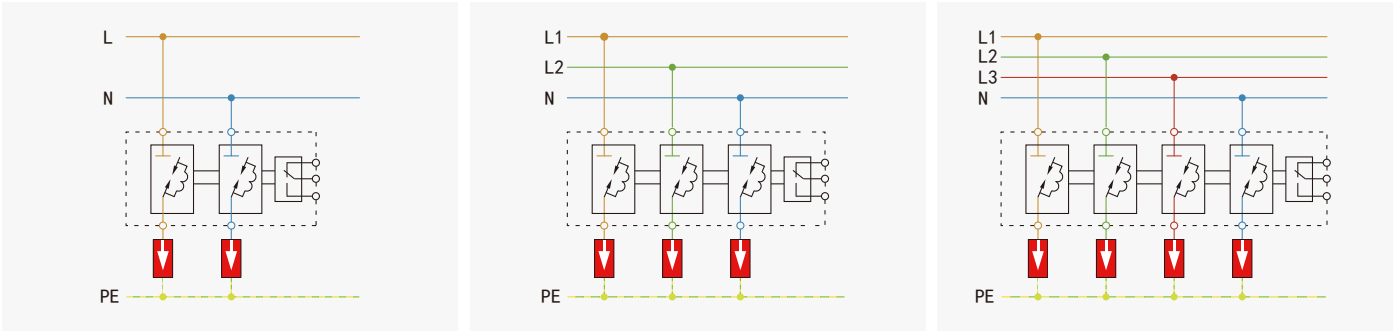
Technical data

Protection category corresponding to SPD	Class II		
Compliant standards	NB/T 42150-2018		
Rated operating voltage	230/400 VAC		
Operating frequency	50/60Hz		
Maximum impulse current Limp	-		
Maximum discharge current Imax	20kA	40kA	80kA
Nominal discharge current In	10kA	20kA	40kA
Rated short circuit capability Icn	25kA	50kA	50kA
Minimum delay action current Id	3A		
Number of poles	1P/2P/3P/4P		
IP Protection grades	IP40 Front panel: IP40 Terminals: IP20		
Remote indication function	Can install iOF accessories to realize		
Rated torque	3.5N· m		
Wiring ability	Flexible wire:2.5-25mm² Hard wire:25-35mm²		
Recommended wiring	≥4mm²		
Connection mode	"Top-in, bottom-out" or "bottom-in, top-out"		
Remote signaling function	Optional		
Working temperature range	-40 ℃ ~ +80 ℃		
Mechanical life	15000 times		
Electrical life	10000 times		

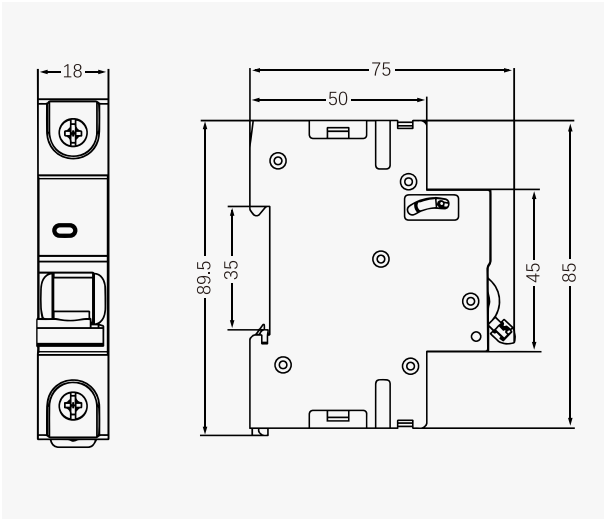
Backup protection device SCB



Schematic diagram



Dimension drawings



Backup protection device SCB



Product overview

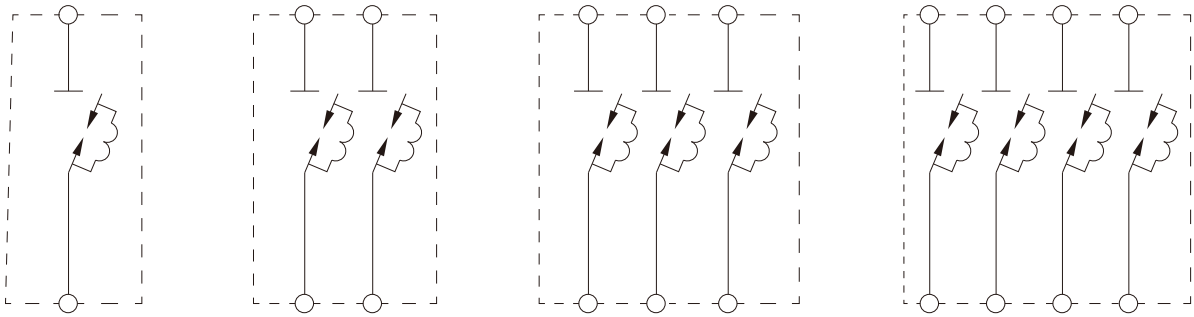
The SCB series is a backup protection device specially designed for surge protectors. It can be directly integrated with surge protectors for seamless compatibility and can withstand corresponding lightning test currents, meeting the requirements of NBIT 42150-2018.

- Product function
- 1.Surge protector aging failure protection
 - 2.Short-circuit failure protection of surge protectors

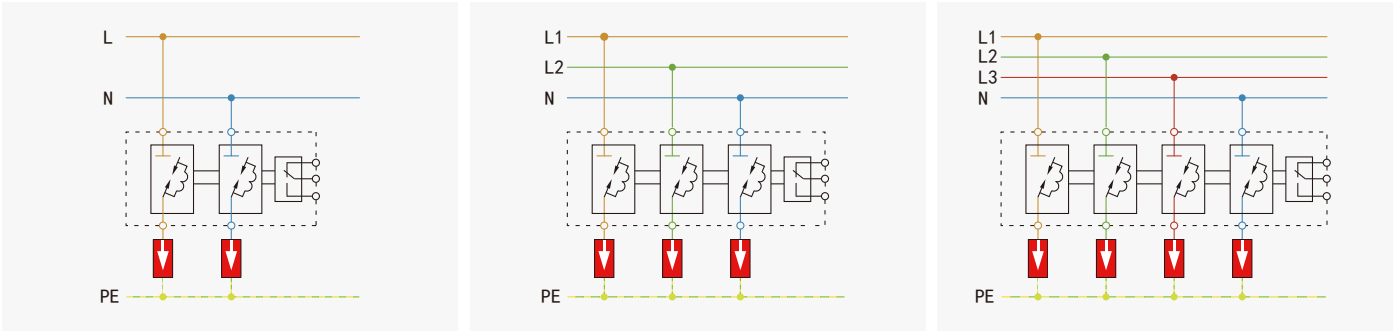
Technical data

Protection category corresponding to SPD	Class II	
Compliant standards	NB/T 42150-2018	
Rated operating voltage	230/400 VAC	
Operating frequency	50/60Hz	
Maximum impulse current Limp	-	
Maximum discharge current I _{max}	100kA	160kA
Nominal discharge current I _n	50kA	80kA
Rated short circuit capability I _{cn}	100kA	160kA
Minimum delay action current I _d	3A	
Number of poles	1P/2P/3P/4P	
IP Protection grades	IP40 Front panel: IP40 Terminals: IP20	
Remote indication function	Can install iOF accessories to realize	
Rated torque	3.5N· m	
Wiring ability	Flexible wire:2.5-25mm ² Hard wire:25-35mm ²	
Recommended wiring	≥6mm ²	
Connection mode	"Top-in, bottom-out" or "bottom-in, top-out"	
Remote signaling function	Optional	
Working temperature range	-40 ℃ ~ +80 ℃	
Mechanical life	15000 times	
Electrical life	10000 times	

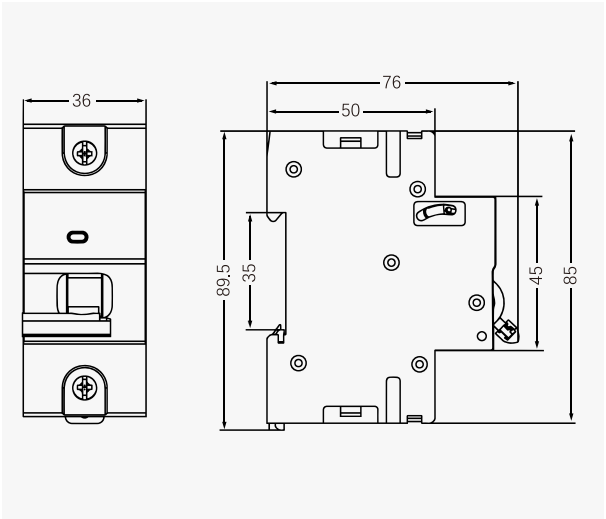
Backup protection device SCB



Schematic diagram



Dimension drawings



Backup protection device SCB



Product overview

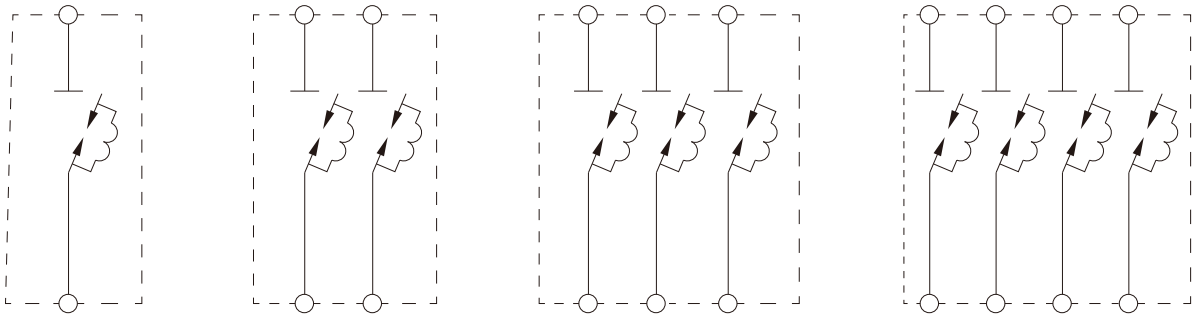
The SCB series is a backup protection device specially designed for surge protectors. It can be directly integrated with surge protectors for seamless compatibility and can withstand corresponding lightning test currents, meeting the requirements of NB/T 42150-2018.

- Product function
- 1.Surge protector aging failure protection
 - 2.Short-circuit failure protection of surge protectors

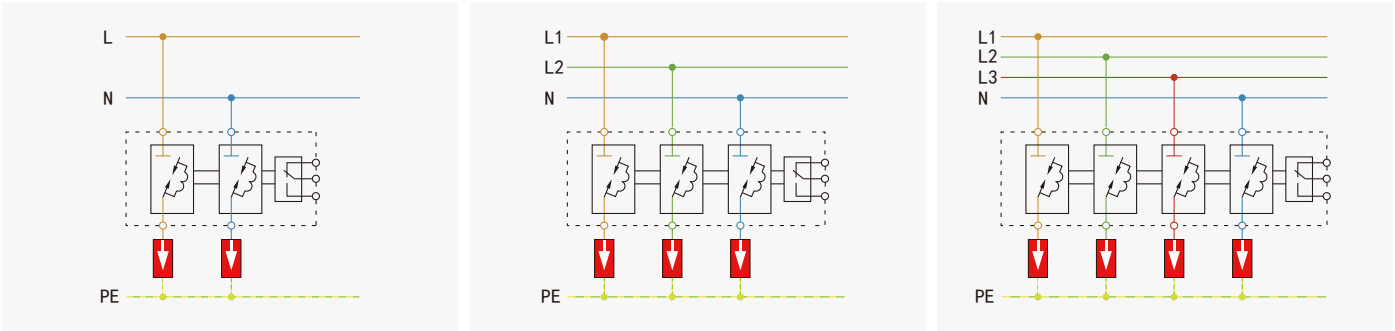
Technical data

Protection category corresponding to SPD	Class I	
Compliant standards	NB/T 42150-2018	
Rated operating voltage	230/400 VAC	
Operating frequency	50/60Hz	
Maximum impulse current I_{imp}	15kA	25kA
Maximum discharge current I_{max}	-	
Nominal discharge current I_n	80kA	
Rated short circuit capability I_{cn}	100kA	
Minimum delay action current I_d	3A	
Number of poles	1P/2P/3P/4P	
IP Protection grades	IP40 Front panel: IP40 Terminals: IP20	
Remote indication function	Can install iOF accessories to realize	
Rated torque	3.5N·m	
Wiring ability	Flexible wire:2.5-25mm ² Hard wire:25-35mm ²	
Recommended wiring	≥16mm ²	
Connection mode	"Top-in, bottom-out" or "bottom-in, top-out"	
Remote signaling function	Optional	
Working temperature range	-40℃ ~ +80℃	
Mechanical life	15000 times	
Electrical life	10000 times	

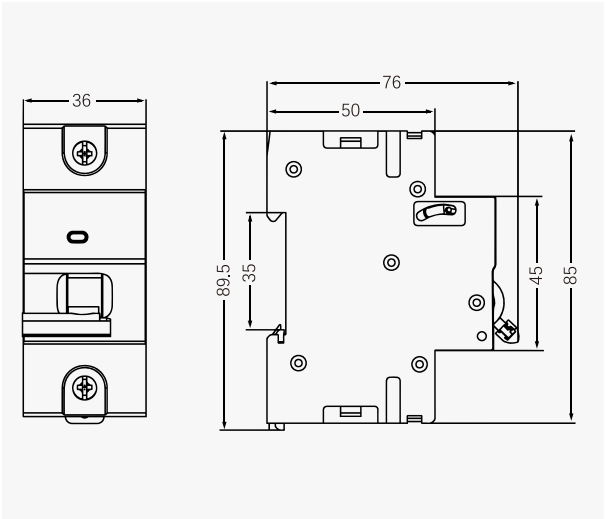
Backup protection device SCB



Schematic diagram



Dimension drawings



Product overview

Intelligent monitoring terminal of surge protector (hereinafter referred to as SPD), the working power supply is AC power supply, and the pulse current is induced by external transformer coil: 3-bit and 8-segment digital display; Built-in nonvolatile storage, which can save data when power is off; Provide 485 bus communication interface. It has the functions of monitoring SPD power loss, SPD failure, lightning action counting and lightning peak monitoring, and has remote control or fault remote signal dry contact output (one of the two functions is optional), which can actively control related equipment on site or access fault information to other equipment at the remote end.

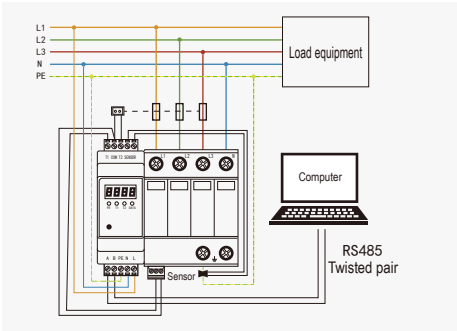
Main features

- 1. Small size: this product is a rail-mounted instrument, which can be easily integrated into lightning protection box, lightning protection cabinet, distribution box, power distribution cabinet and network cabinet.
- 2. Convenient installation: all interfaces are plug-in terminals, which can realize quick installation and maintenance;
- 3. Interface type: it has the functions of remote communication acquisition, NTC temperature acquisition, PE access status acquisition, lightning strike counting, etc.
- 4. Communication mode: the product comes standard with RS485 interface, so that data can be uploaded and expanded in cascade;
- 5. Strong anti-interference ability: the serial port is equipped with surge protection circuit, and the collection port is designed with photoelectric isolation circuit to ensure that the product is not interfered by surge and electromagnetic waves.

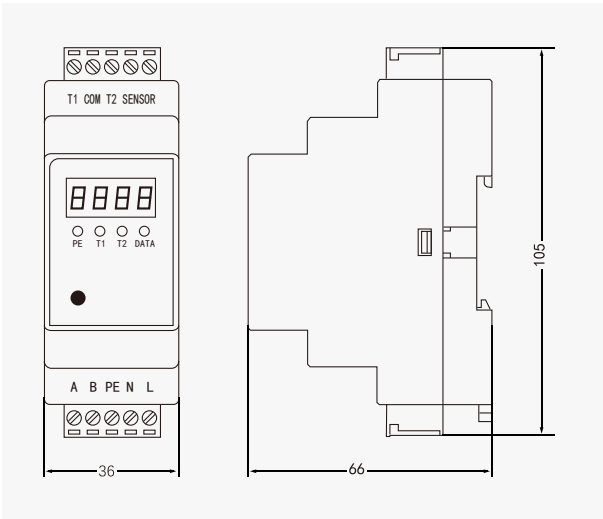


Model		PHL-JI-01A			
Power supply parameters		22VAC±10%			
Equipment power consumption		2W			
Communication interface	RS485	Terminal, standard MODBUS RTU protocol			
		Baud rate of 1200/2400/4800/9600/19200 is optional, and the default is 9600; Check bit n; Data bit 8; Stop bit 1			
		The device address 1-255 is optional, and the default is 1.			
Collection port	T01 multiplexing	Temperature collection (optional)	Terminal , NTC sensor; anti-shake function to prevent false alarms or frequent alarms	Used to measure the surface temperature of lightning arresters; measurementrange: -30°C to 160°C; high/low temperature alarm function: when the NTC temperature exceeds the high-temperature limit or falls below the low-temperature limit, the T1 port triggers an alarm, and the LED indicator light illuminates simultaneously; high/low temperature limits are adjustable; can record up to 65,535 alarm occurrences; can log the date, time, and alarm status data for the most recent 10 alarms, along with the extreme high/low temperature values at the time of the alarm.	
		Digital collection (default)			
	T02 single use	Digital collection	Terminal ,photoelectric isolation, passive dry contact connection; anti-shake function to prevent false alarms or frequent alarms.	Used to collect remote signaling signals from lightning arresters or status signals from backup protectors(or switches); closed for alarm, open for normal; LED indicator lights up when in alarm status; can record 65,535 alarm occurrences, and can record the port number, date, and time data for the most recent 10 alarms.	
	PE line status	Used to detect whether the PE line is connected to ground. The ground connection indicator light is on when connected to ground, and off when not connected to ground.			
Temperature and humidity collection		Temperature	-40 ~ 85 ℃		
		Humidity	0 ~ 100%RH		
Lightning surge collection		Counting function	Can record up to 650 million times; can record the date and time of the last 9,999 surge occurrences.		
		Trigger current	200A ~ 100kA		
		Surge type	T1/T2/T3		
		Sensor	Inductive coil		
Power-off retention		Alarm data is permanently maintained when power is off, The clock data is kept off for more than half a year.			
Firmware upgrade		Remote firmware upgrade via serial port			
Housing material		PC+ABS, white (custom colors available for orders of 500 pieces or more), flame retardant V0			
Installation method		Standard 35mm rail			
Working environment		-40 ~ 85 ℃ , 0 ~ 95%RH			

Schematic diagram



Dimension drawings



Product overview

Intelligent monitoring terminal of surge protector (hereinafter referred to as SPD), the working power supply is AC power supply, and the pulse current is induced by external transformer coil: 3-bit and 8-segment digital display; Built-in nonvolatile storage, which can save data when power is off; Provide 485 bus communication interface. It has the functions of monitoring SPD power loss, SPD failure, lightning action counting and lightning peak monitoring, and has remote control or fault remote signal dry contact output (one of the two functions is optional), which can actively control related equipment on site or access fault information to other equipment at the remote end.

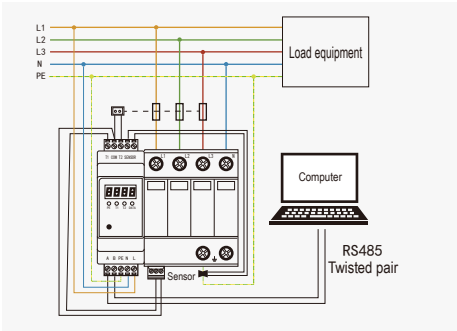
Main features

1. Small size: this product is a rail-mounted instrument, which can be easily integrated into lightning protection box, lightning protection cabinet, distribution box, power distribution cabinet and network cabinet.
2. Convenient installation: all interfaces are plug-in terminals, which can realize quick installation and maintenance;
3. Interface type: it has the functions of remote communication acquisition, NTC temperature acquisition, PE access status acquisition, lightning strike counting, etc.
4. Communication mode: the product comes standard with RS485 interface, so that data can be uploaded and expanded in cascade;
5. Strong anti-interference ability: the serial port is equipped with surge protection circuit, and the collection port is designed with photoelectric isolation circuit to ensure that the product is not interfered by surge and electromagnetic waves.

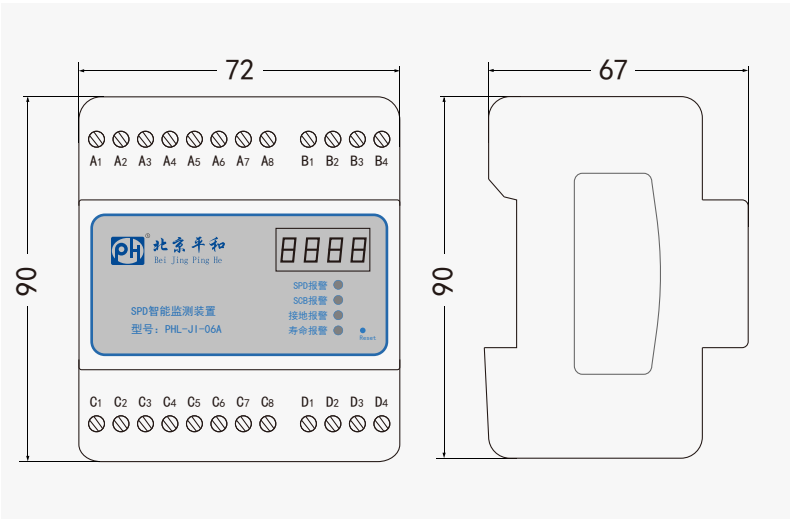


Model		PHL-JI-06A			
Power supply parameters		22VAC±10%			
Equipment power consumption		2W			
Communication interface	RS485	Terminal, standard MODBUS RTU protocol			
		Baud rate of 1200/2400/4800/9600/19200 is optional, and the default is 9600; Check bit n; Data bit 8; Stop bit 1			
		The device address 1-255 is optional, and the default is 1.			
Collection port	T01 multiplexing	Temperature collection (optional)	Terminal , NTC sensor; anti-shake function to prevent false alarms or frequent alarms	Used to measure the surface temperature of lightning arresters; measurementrange: -30℃ to 160℃; high/low temperature alarm function: when the NTC temperature exceeds the high-temperature limit or falls below the low-temperature limit, the T1 port triggers an alarm, and the LED indicator light illuminates simultaneously; high/low temperature limits are adjustable; can record up to 65,535 alarm occurrences; can log the date, time, and alarm status data for the most recent 10 alarms, along with the extreme high/low temperature values at the time of the alarm.	
		Digital collection (default)			
	T02 single use	Digital collection	Terminal ,photoelectric isolation, passive dry contact connection; anti-shake function to prevent false alarms or frequent alarms.	Used to collect remote signaling signals from lightning arresters or status signals from backup protectors(or switches); closed for alarm, open for normal; LED indicator lights up when in alarm status; can record 65,535 alarm occurrences, and can record the port number, date, and time data for the most recent 10 alarms.	
	PE line status	Used to detect whether the PE line is connected to ground. The ground connection indicator light is on when connected to ground, and off when not connected to ground.			
Temperature and humidity collection		Temperature	-40 ~ 85 ℃		
		Humidity	0 ~ 100%RH		
Lightning surge collection		Counting function	Can record up to 650 million times; can record the date and time of the last 9,999 surge occurrences.		
		Trigger current	200A ~ 100kA		
		Surge type	T1/T2/T3		
		Sensor	Inductive coil		
Power-off retention		Alarm data is permanently maintained when power is off, The clock data is kept off for more than half a year.			
Firmware upgrade		Remote firmware upgrade via serial port			
Housing material		PC+ABS, white (custom colors available for orders of 500 pieces or more), flame retardant V0			
Installation method		Standard 35mm rail			
Working environment		-40 ~ 85 ℃ , 0 ~ 95%RH			

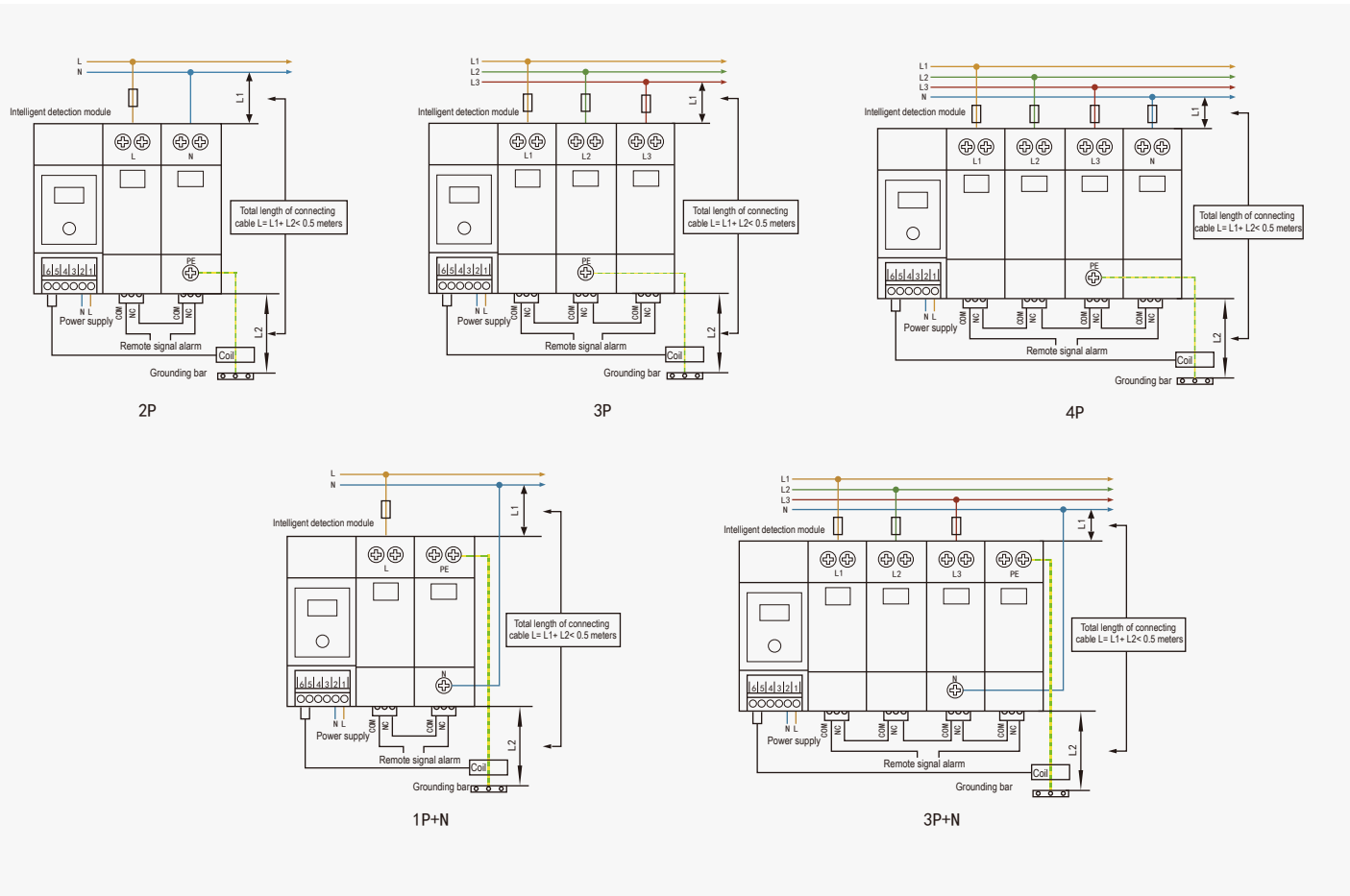
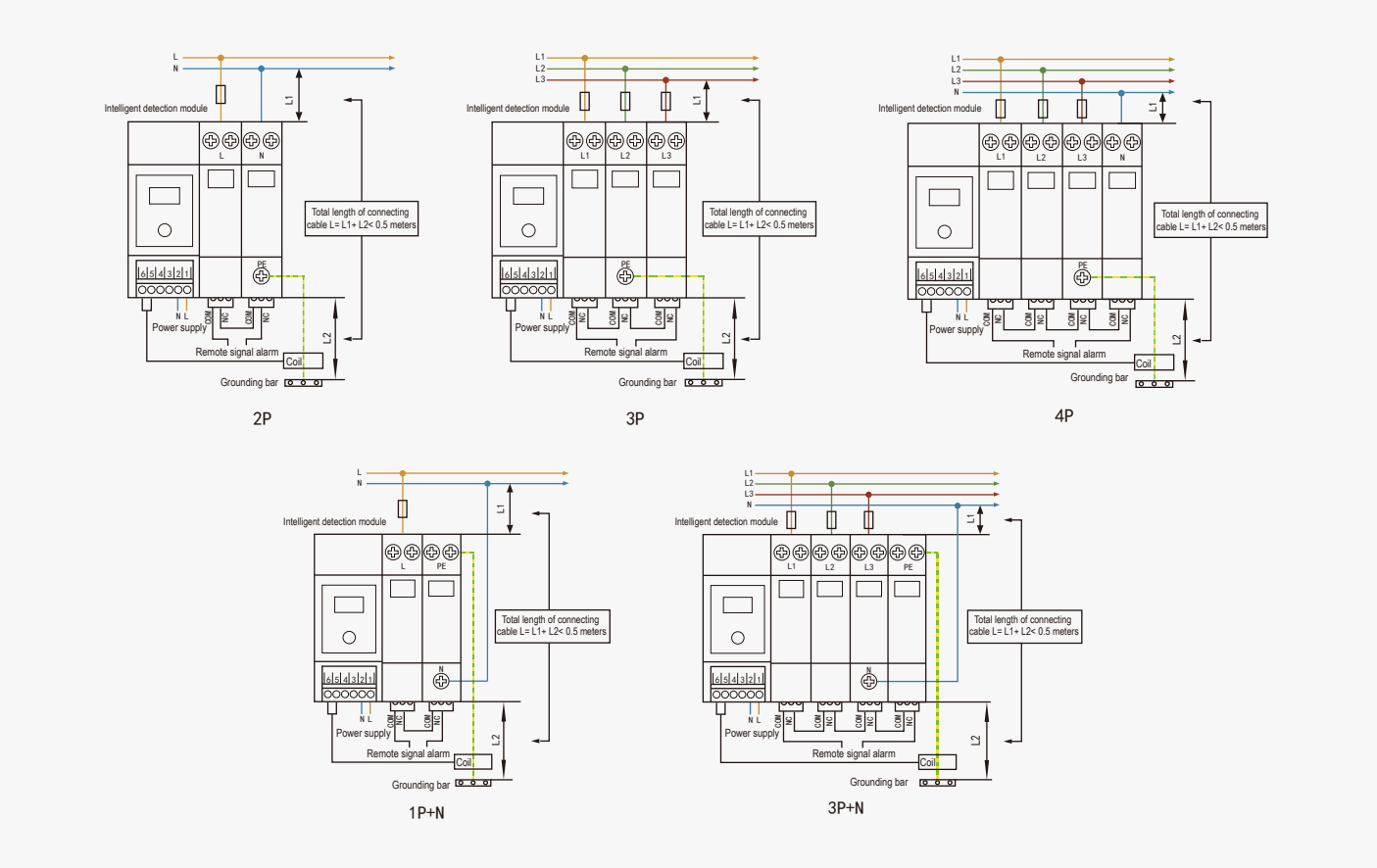
Schematic diagram



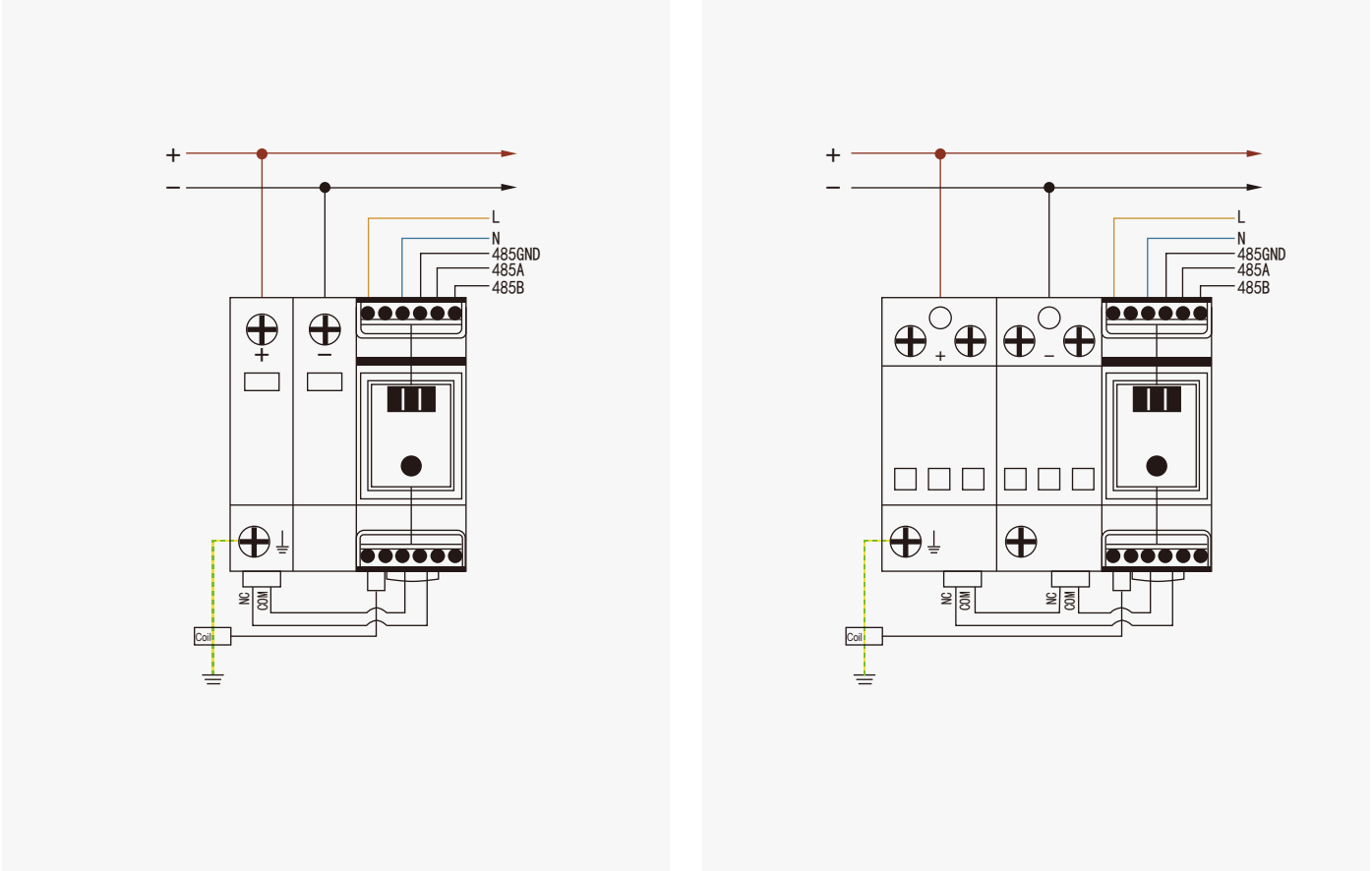
Dimension drawings



AC SPD Communication Wiring Diagram



DC SPD Communication Wiring Diagram



Communication lightning protection module



Power and network two-in-one monitoring special surge protective devices

RJ45/Crimp interface-5kA-5V

Product advantages

Integrated protection for camera power supply and network signal with little interference;

Large flow rate, low residual pressure;

Multi-level protection;

Small insertion loss, superior transmission performance, no leakage;

Easy to install with rigorous structure.

Product overview

The power network two-in-one monitoring special lightning protection device is a lightning protection product customized for digital network cameras. It protects the camera power supply and network lines from electromagnetic pulses of lightning, induced overvoltages, and operating overvoltages. It is widely used in public security, traffic monitoring and other fields. This series of products have the characteristics of high integration, low insertion loss, low residual voltage, convenient installation etc., have very good lightning protection effects.

Application scenario

It is mainly used for the protection of monitoring equipment (power supply, PTZ, camera) by the monitoring system; widely used in bank monitoring system, community security system; school, enterprise, road safety protection and other monitoring equipment.

Electrical parameters of the network

Model	PHL-12/D05J4	PHL-24/D05J4	PHL-220/D05J4
Operating voltage (UC)	5V		
Nominal discharge current In (8 / 20μs)	3kA(8/20μs)		
Maximum flow capacity Imax(8/20us)	5kA(8/20μs)		
Protection level Up	20V(10/700μs)		
Transmission rate Vs	100Mbps		
Response time (Ta)	1ns		
Insertion loss	0.5dB		
Joint form	RJ45		

Communication lightning protection module

Electrical parameters of the power supply

Model	PHL-12/D05J4	PHL-24/D05J4	PHL-220/D05J4
Nominal working voltage(Un)	12VDC	24VDC	220VAC
Nominal discharge current In (8 / 20μs)	5kA(8/20μs)		
Maximum flow capacity Imax(8/20μs)	10kA(8/20μs)		
When the voltage protection level Up is 1n	60V	100V	900V
Joint form	Crimp type		
Overall dimensions (excluding grounding wire)	105*57*28mm(slightly different sizes of joints)		
Protection level	IP20		
Working environment	Environmental temperature: -40~+85 ℃ Relative humidity≤95%		
Standards	IEC 61643-1、EN 60950、GB/T18802.21-2002、TB/T2311-2002、YD/1235.2		

Mechanical parameters

Model	PHL-12/D05J4	PHL-24/D05J4	PHL-220/D05J4
Installation method	The lightning arrester is connected in series between the protected equipment and the signal channel.		
Appearance size	112*60*25mm		
Shell material/color	Aluminum/blue		
Protection level (IEC EN 60529)	IP20		

Communication lightning protection module



Power and network three-in-one monitoring special surge protective devices

RJ45/Crimp interface·5kA·5V/12V
Product advantages
Comprehensive protection of camera power supply, pan-tilt control signal and video signaland network signal with little interference;
Large flow rate, low residual pressure;
Multi-level protection;
Small insertion loss, superior transmission performance, no leakage;
Easy to install with rigorous structure.

Product overview

The power network three-in-one monitoring special lightning protection device is a lightning protection product customized for digital network cameras and other control equipment with pan-tilt control. It protects the camera power supply and video and control circuit from electromagnetic pulses of lightning, induced overvoltages, and operating overvoltages. It is widely used in public security, traffic monitoring and other fields. This series of products have the characteristics of high integration, low insertion loss, low residual voltage, convenient installation etc., have very good lightning protection effects.

Application scenario

It is mainly used for the protection of monitoring equipment (power supply, PTZ, camera) by the monitoring system; widely used in bank monitoring system, community security system; school, enterprise, road safety protection and other monitoring equipment.

Electrical parameters of the network

Model	PHL-220/D05J4/D12Y2
Lightning protection zone	2
Demand grade	
According to IDN VDE6075 Part6 (Draft 11.89) A1, A2	D
According to IEC61643	II
Maximum continuous operating voltage (UC)	Network: 5V control: 12V
Nominal discharge current In (8 / 20μs)	3kA
Maximum flow capacity Imax(8/20μs)	5kA
Limit voltage(10 / 700μs)	Network: 20V control: ≤40V
Response time (Ta)	1ns
Transmission rate Vs	Network: 100Mbps control: 10Mbps
Insertion loss	≤0.5dB
Operating humidity range (TU)	Environmental temperature: -40~+85℃ Relative humidity≤95%
Joint form	Network: RJ45 control: crimp type
Standards	IEC 61643-1、 EN 60950、 GB/T 18802.21-2002、 TB/T 2311-2002、 YD/T 1235.1、 YD/T 1235.2、 YD/T 1542

Communication lightning protection module

Electrical parameters of the power supply

Model	PHL-220/D05J4/D12Y2
Nominal working voltage(Un)	220VAC
Maximum continuous operating voltage Uc	275VAC
Nominal discharge current In(8/20μs)	5KA
Maximum flow capacity Imax(8/20μs)	10KA
Load current	0.5A
When the voltage protection level Up is 1n	≤800V
Response time (Ta)	25ns
Working environment	Environmental temperature: -40~+85℃ Relative humidity≤95%
Joint form	Crimp type
Standards	IEC 61643-1、 EN 60950、 GB/T 18802.21-2002、 TB/T 2311-2002、 YD/T 1235.1、 YD/T 1235.2、 YD/T 1542

Mechanical parameters

Model	PHL-220/D05J4/D12Y2
Installation method	The lightning arrester is connected in series between the protected equipment and the signal channel.
Appearance size	118*82*45mm
Shell material/color	Aluminum/blue
Protection level (IEC EN 60529)	IP20

Network SPD (Telephone network)



Product overview

It is suitable for the lightning protection of telecommunication system.

Main feature

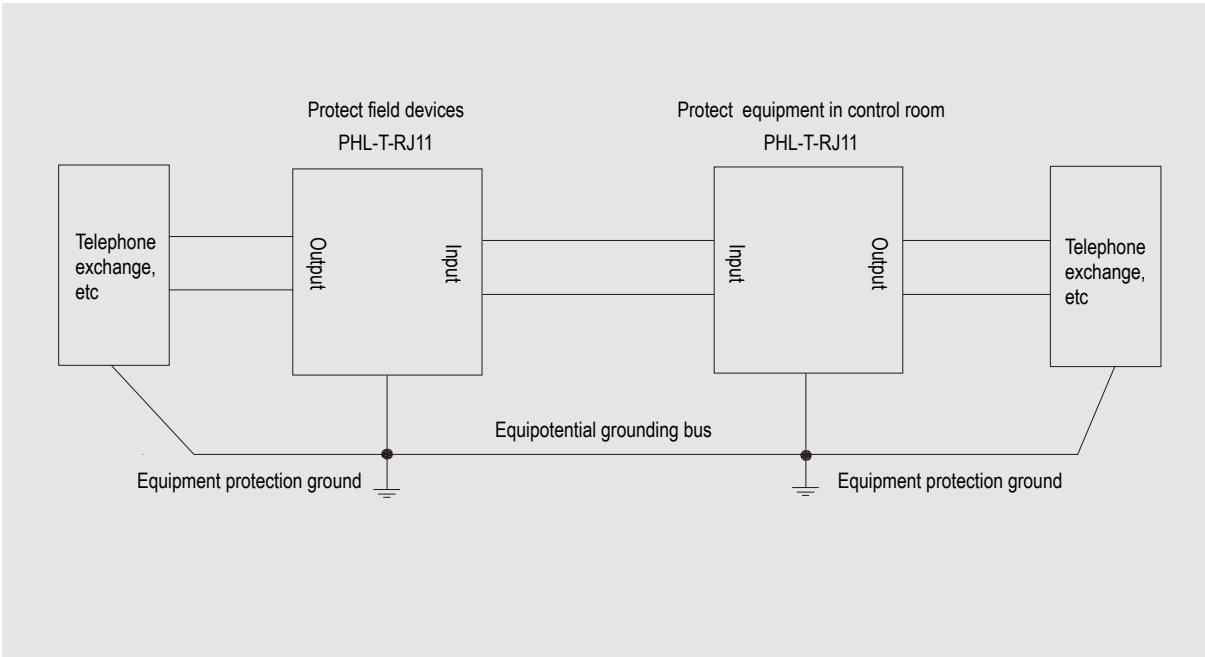
- 1. Input and output are 6P4C socket and RJ11 crystal head respectively. Easy installation, no need for additional accessories;
- 2. It can be used to protect LPZ0-LPZ2 and subsequent partition interfaces.

Technical data

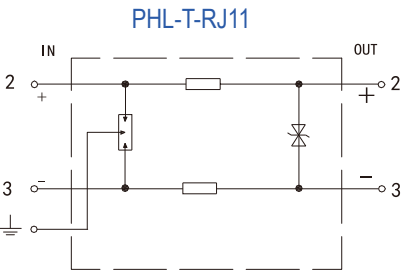
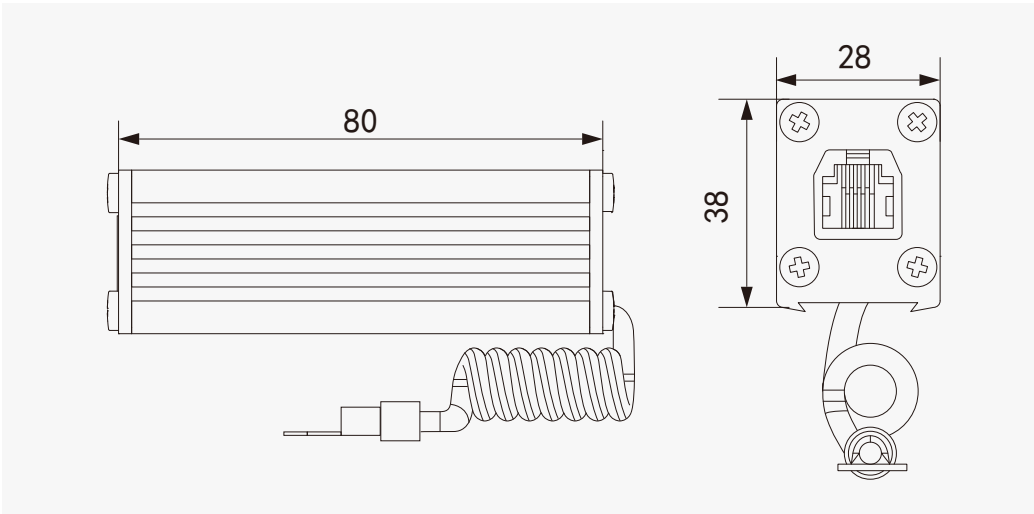
Rated operating voltage Un	110VAC
Maximum operating voltage Uc	132VAC
Nominal operating current IL	250mA
Nominal discharge current In (8 / 20μs)	2.5kA
The maximum discharge current (8 / 20μs)	5kA
Lightning surge current Iimp (10 / 350μs)	0.5kA
Protection voltage Up (under In) line to line	< 320V
Protection voltage Up (under In) line to ground	< 400V
Bandwidth	10MHz
Response time	< 1ns
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20
Housing material	Ferrous metal aluminum
Number of protection lines	2, 3
Interface type	RJ11
Working temperature range	-40 ℃ ~ 80 ℃
Installation method	Optional DIN35mm rail mounting clamp
Grounding method	1.5mm², length 2000mm grounding wire
Test standard	GB/T8802.21/IEC 61643-21

Network SPD (Telephone network)

Schematic diagram



Dimension drawings



Network SPD (100M Ethernet network)



Product overview

According to IEC standard design, the special RJ45 plug socket can limit the surge to a certain voltage protection level in the shortest time (ps level), reduce the potential difference between the wires, and protect the electronic circuit connected to the network communication port from lightning and transient high voltage surge. It can be used to protect LPZ0B-LPZ2 and subsequent partition interfaces.

Main feature

Standard RJ45 Ethernet port

Fully shielded design

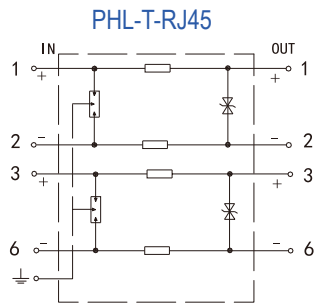
Wide frequency and small insertion loss

Protect the exchange switch, workstations and all kinds of network communication equipments.

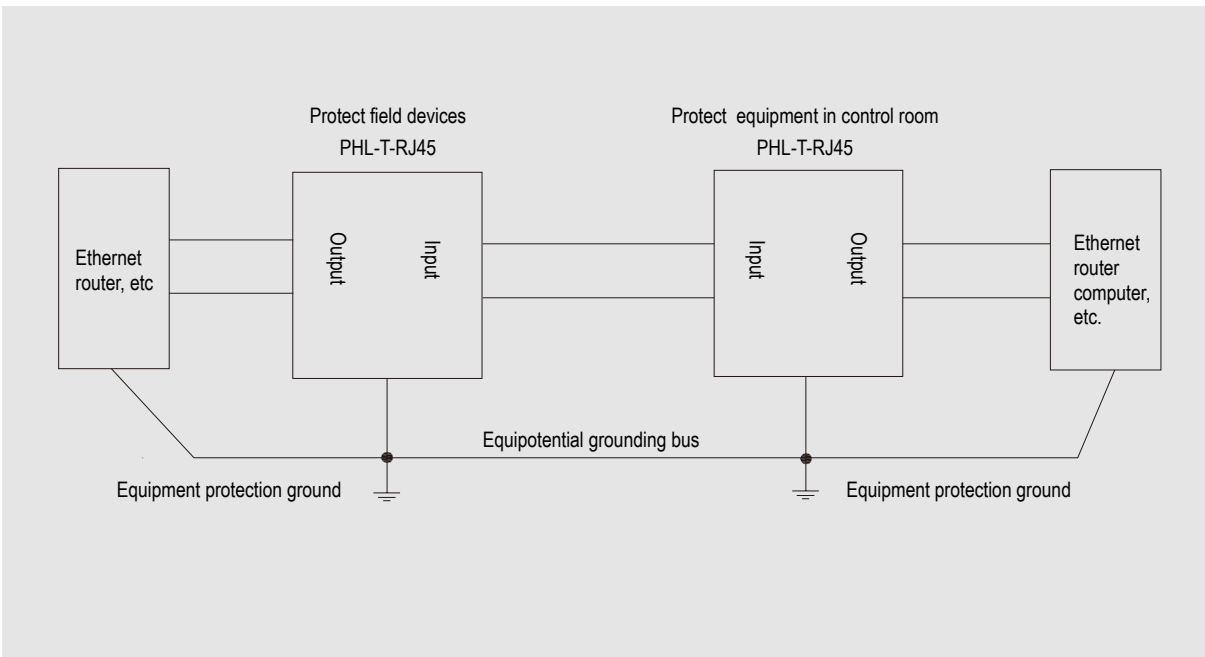
Technical data

Rated operating voltage U_n	5VDC
Maximum operating voltage U_c	6VDC
Nominal operating current I_L	100mA
Nominal discharge current I_n (8 / 20 μ s)	2.5kA
Total nominal discharge current I_{max} (8/20 μ s)	10kA
Lightning surge current I_{imp} (10 / 350 μ s)	0.5kA
Protection voltage U_p (under I_n) line to line	$\leq 35V$
Protection voltage U_p (under I_n) line to ground	$\leq 600V$
Interface type	Input and output: Female interface/Female interface
Bandwidth	100MHz
Insertion loss	$< -1.3dB$
Response time	$< 1ns$
Working temperature range	$-40^\circ C \sim +80^\circ C$
Installation method	Optional DIN35mm rail mounting clamp
Grounding method	1.5mm ² grounding wire
Housing material	Ferrous metal aluminum
Test standard	GB/T/8802.21/IEC 61643-21

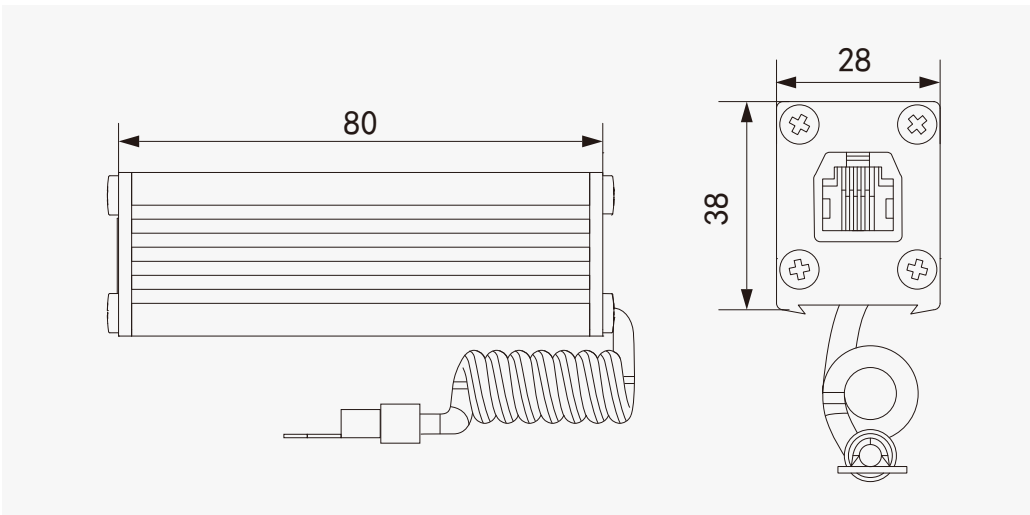
Network SPD (100M Ethernet network)



Schematic diagram



Dimension drawings





Product overview

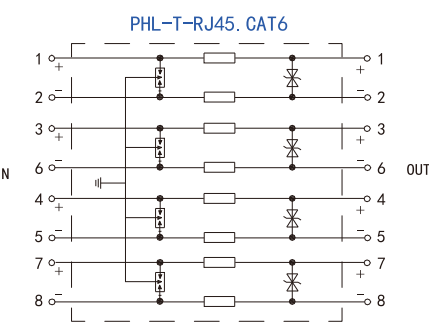
According to IEC standard design, special RJ45 plug socket is adopted, which can limit the surge to a certain voltage protection level in the shortest time (ps level), reduce the potential difference between wires, and protect the electronic circuit connected to the network communication port from lightning and transient high-voltage surge. It is used to protect the interface between LPZ0B area and LPZ2 area and subsequent areas.

Main feature

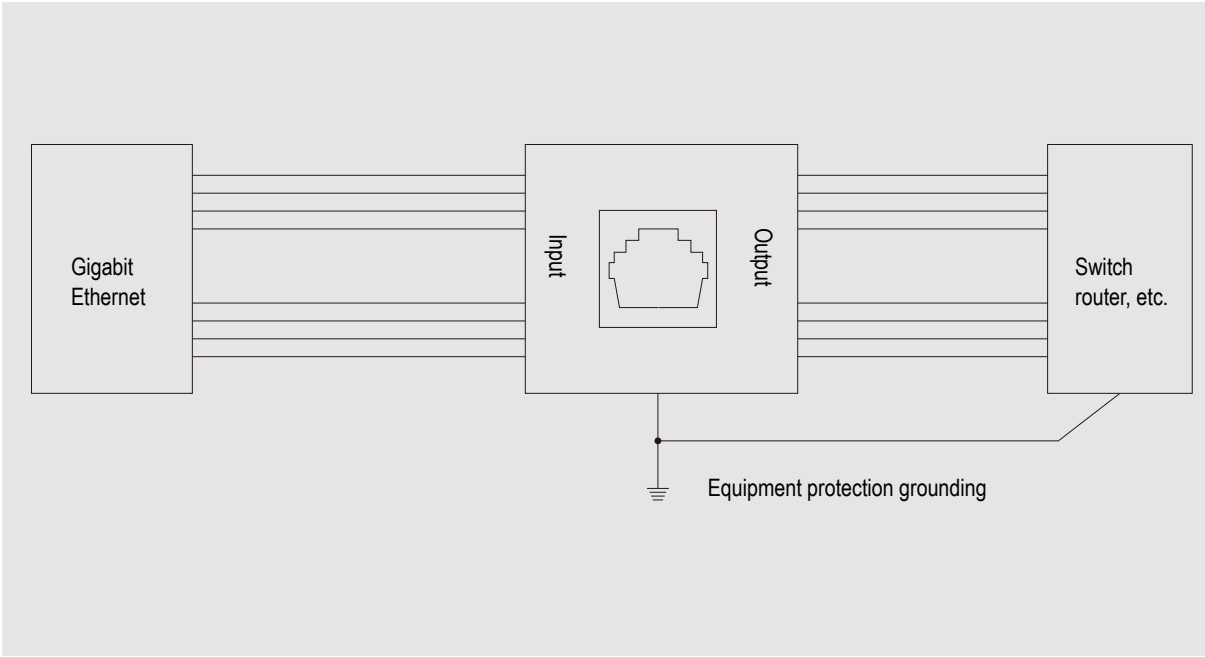
- Standard RJ45 Ethernet port
- Fully shielded design
- Wide frequency and small insertion loss
- Protect the exchange switch, workstations and all kinds of network communication equipments.

Technical data

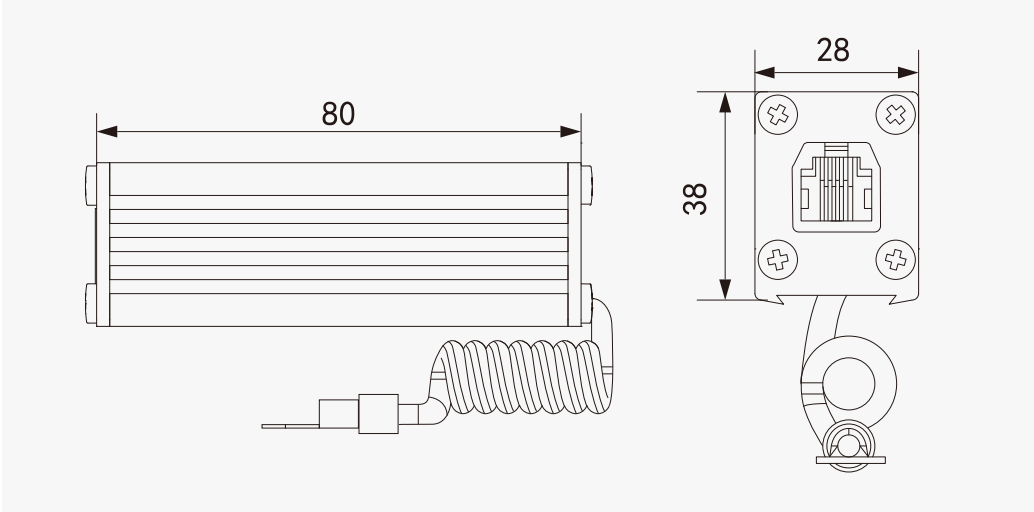
Rated operating voltage Un	5VDC
Maximum operating voltage Uc	6VDC
Nominal operating current IL	500mA
Nominal discharge current In (8 / 20μs)	2.5kA
Total nominal discharge current In (8/20μs)	20kA
Lightning surge current Iimp (10 / 350μs)	0.5kA
Protection voltage Up (under In) line to line	≤35V
Protection voltage Up (under In) line to ground	≤600V
Bandwidth	250MHz
Response time	< 1ns
Degrees of protection provided by enclosure (in line with IEC 60529)	IP 20
Housing material	Ferrous metal aluminum
Number of protection lines	1, 2, 3, 4, 5, 6, 7, 8
Interface type	RJ45
Working temperature range	-40 ℃ ~ 80 ℃
Installation method	Optional DIN35mm rail mounting clamp
Grounding method	1.5mm², length 2000mm grounding wire
Test standard	GB/T8802.21/IEC 61643-21



Schematic diagram



Dimension drawings



Network SPD (Active Ethernet network)



Product overview

According to IEC standard design, special RJ45 plug socket is adopted to meet the technical requirements of 10/100Mbps PoE protocol, which can limit the surge to a certain voltage protection level in the shortest time (ps level), reduce the potential difference between wires, and protect the electronic circuit connected to the network communication port from lightning and transient high-voltage surge. It is used to protect the interface between LPZ0B area and LPZ2 area and subsequent areas.

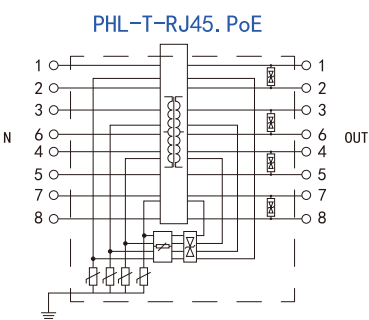
Main feature

- Standard RJ45 Ethernet port
- Fully shielded design
- Wide frequency and low residual voltage
- Installation of 35mm rail for signal network transmission equipment protection using PoE technology

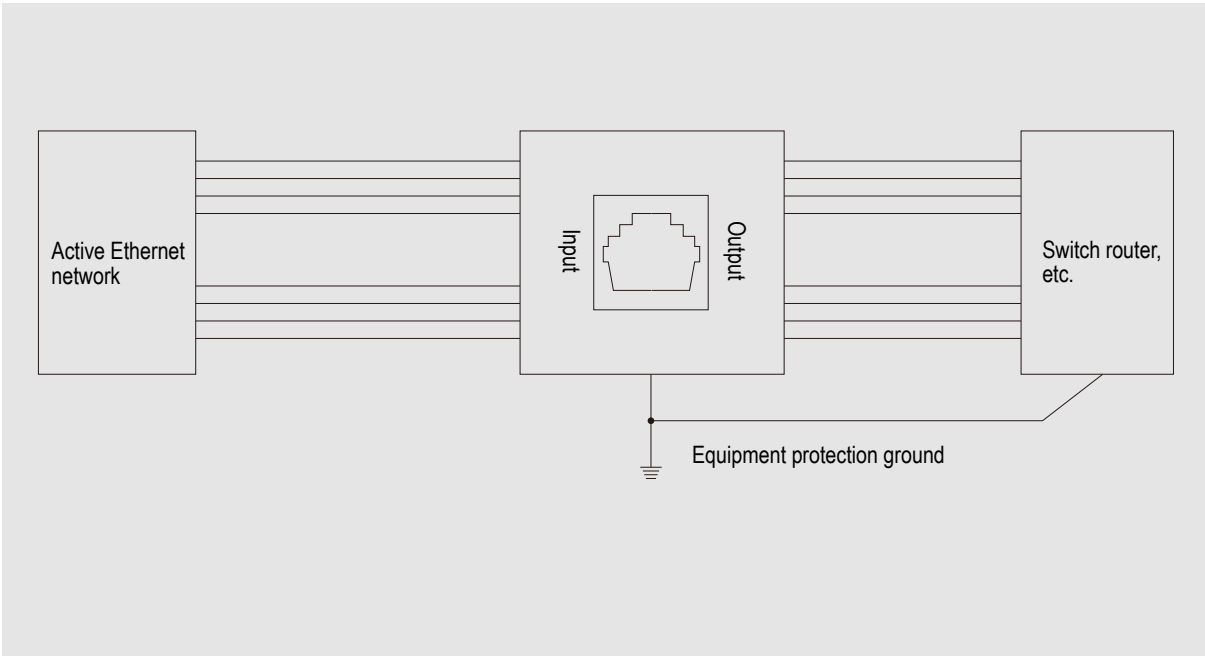
Technical data

Rated operating voltage U_n	5VDC
Maximum operating voltage U_c	6VDC
Nominal operating current I_L	100mA
Nominal discharge current I_n (8 / 20 μ s)	2.5kA
Total nominal discharge current I_{max} (8/20 μ s)	20kA
Lightning surge current I_{imp} (10 / 350 μ s)	0.5kA
Protection voltage U_p (under I_n) line to line	$\leq 75V$
Protection voltage U_p (under I_n) line to ground	$< 500V$
Interface type	Input and output: Female interface/Female interface
Bandwidth	100MHz
Insertion loss	$< -1.3dB$
Response time	$< 1ns$
Working temperature range	-40 $^{\circ}C$ ~ +80 $^{\circ}C$
Installation method	Optional DIN35mm rail mounting clamp
Grounding method	1.5mm ² grounding wire
Housing material	Ferrous metal aluminum
Test standard	GB/T8802.21/IEC 61643-21

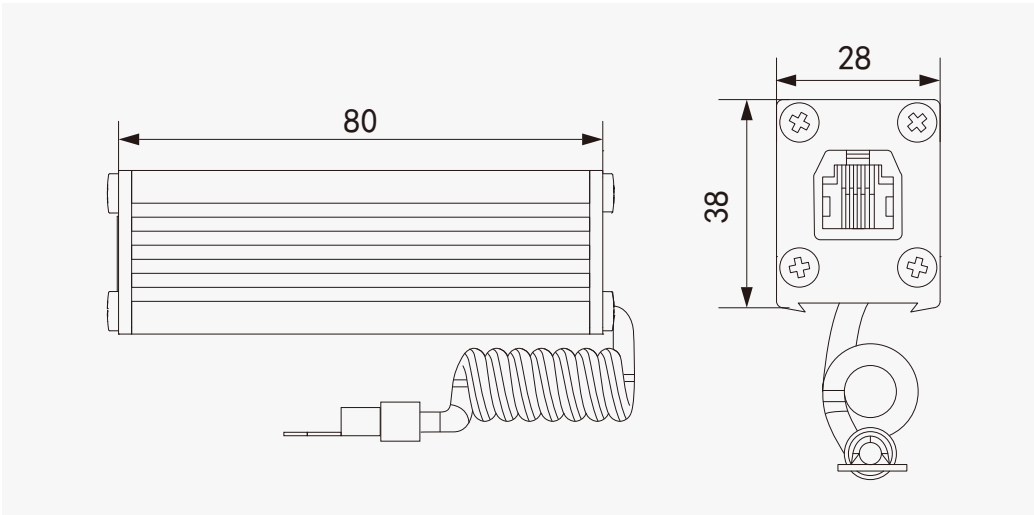
Network SPD (100M Ethernet network)



Schematic diagram



Dimension drawings





Product overview

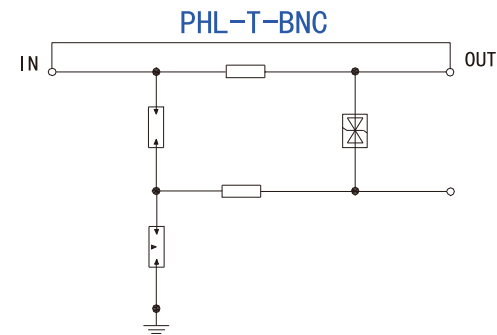
Standard BNC coaxial interface is used for lightning protection of SD coaxial video surveillance system.

Main feature

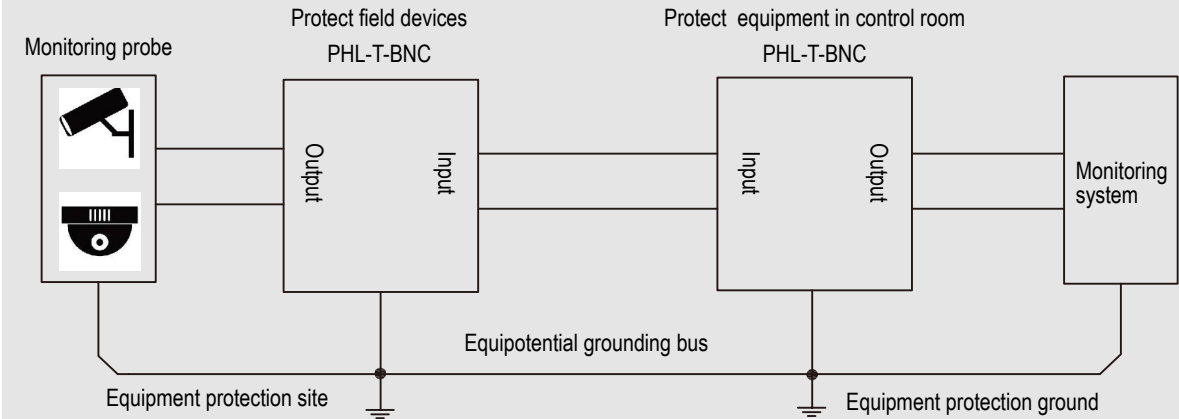
It can be used to protect LPZ0-LPZ2 and subsequent partition interfaces.

Technical data

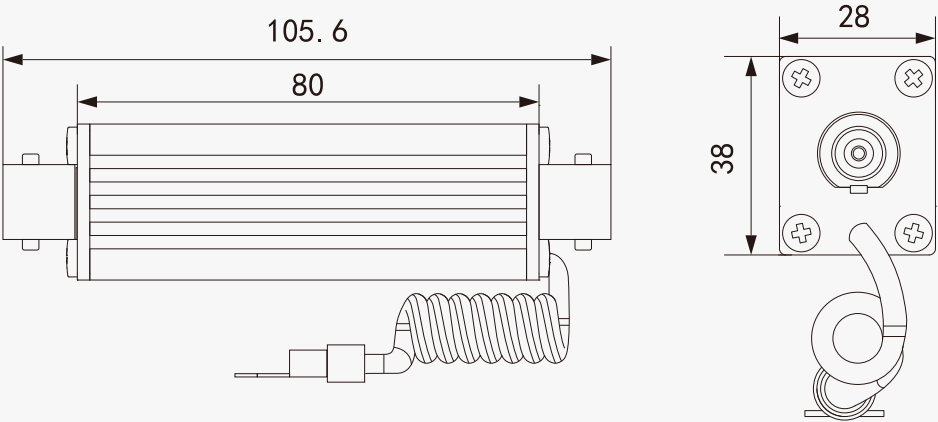
Rated operating voltage U_n	5VDC
Maximum operating voltage U_c	6VDC
Nominal operating current I_L	500mA
Nominal discharge current I_n (8 / 20 μ s)	10kA
The maximum discharge current (8 / 20 μ s)	20kA
Lightning surge current I_{imp} (10 / 350 μ s)	2.5kA
Protection voltage U_p (under I_n) line to line	< 45V
Protection voltage U_p (under I_n) line to ground	< 600V
Bandwidth	30MHz
Insertion loss	< -0.5dB
Response time	< 1ns
Housing material	Ferrous metal aluminum
Working temperature range	-40 C ~ +80 C
Installation method	DIN35mm
Grounding method	1.5mm ² Grounding wire, length 200mm
Test standard	GB/T/8802.21/IEC 61643-21



Schematic diagram



Dimension drawings



Product overview

Lightning and other strong interference can cause severe damage to communication systems, power secondary equipment, and other systems, with serious consequences. Lightning protection will become essential. Lightning consists of high-energy low-frequency components and highly penetrative high-frequency components. It primarily causes damage through two forms: one is direct conduction of lightning through metal pipelines or ground wires to damage equipment, and the other is lightning electromagnetic pulses from lightning channels and discharge channels inducing surges through various coupling mechanisms to metal pipelines or ground wires, thereby damaging equipment. The vast majority of lightning-related damage is caused by this induction. For electronic information equipment, the primary hazard stems from the coupled energy of lightning electromagnetic pulses, which generates transient surges through the following three channels: metal pipeline channels(such as water pipes, power lines, antenna cables, signal lines, and aviation obstruction light leads,etc.), ground wire channels,ground potential counterattack, space channels and radiated electromagnetic interference energy.

The signal surge protector is a specialized product designed to protect network equipment and other devices from damage caused by transient disturbances such as induced lightning currents, surge voltages, static interference, radiation interference, and internal overvoltages. This product employs a two-stage protection scheme, with the first stage featuring a gas discharge tube capable of handling large discharge currents, and the second stage utilizing clamping transient voltage suppressor diodes. As a result, it offers advantages such as high discharge current capacity, low voltage limitation, high reliability, and a long service life.

Technical data

Model	PH1U/LAN-1000.24
Maximum continuous operating voltage Uc	8V
Nominal discharge current In	2.5kA(C2,8/20μs)
Total discharge current Itotal	10kA(C2,8/20μs)
Impulse current Iimp	0.5kA (D1,10/350μs)
Maximum transmission rate Vs	100/1000Mbps
Protection voltage Up	25V/600V
ta	1ns/100ns
Temperature range	-40℃~80℃
Atmospheric pressure	80kPa~160kPa(-500m~2000m)
Relative humidity	30%~95%

Installation Instructions

1. This product must be used indoors.
2. This product does not require calibration and is generally ready for use immediately after connection.
3. When installing, pay attention to the input and output directions. Connect the IN/Surge/Line end to the circuit and the OUT/Protected/Equip end to the protected equipment. The surge protector should be installed as close as possible to the protected equipment, with a maximum distance of 1 m.



Dimension drawings

