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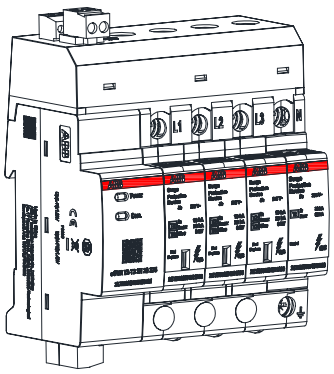
Warning! Installation by person with electrotechnical expertise only.
警告! 只能由具有电气技术专业知识的人安装。

QR Code for online User Manual.
扫描二维码获取在线用户手册。



Digital SPD eOVR INSTALLATION MANUAL

智能电涌保护器 安装说明书

2TAN907000P0001-2025-06-24

1. Package Content

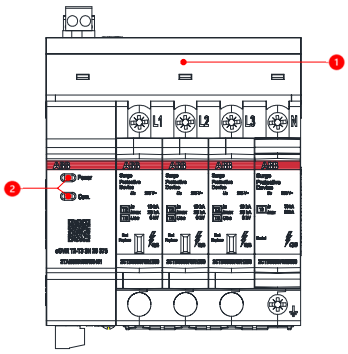
- Digital SPD eOVR
- Installation Manual
- Installation accessories (removable terminals)

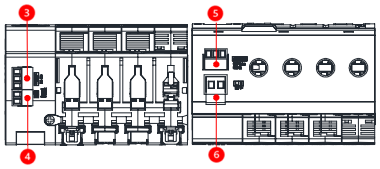
1. 包装清单

- 智能电涌保护器
- 安装说明书
- 安装配件（可插拔端子）

2. Product overview

2.1 Port and component description



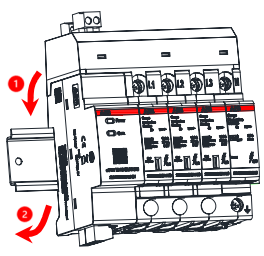


	Description
1	Digital SPD eOVR /智能电涌保护器
2	LED indicators /LED 指示灯
3	RS-485 port /RS-485 端口
4	Groud Check port /接地检测端口
5	SSD Status Check port /后备保护器状态监测端口
6	Power supply port /电源端口

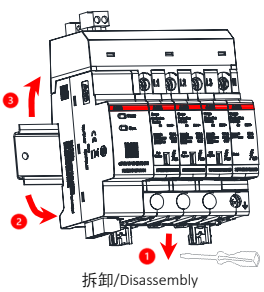
2.2 LED instruction

Power on 上电时	COM		On for 0.1s and then off 点亮 0.1s 后熄灭
	Power		On after the COM is off and remains on 在 COM 灯熄灭后点亮，并保持
Communication 通信	COM		Cycle, on 0.2s, off 0.2s, on 0.2s, off 0.2s 亮 0.2s,灭 0.2s,亮 0.2s,灭 0.2s,循环
PE failure 接地故障	Power		Cycle, on 1.0s, off 1.0s, on 1.0s, off 1.0s 亮 1.0s,灭 1.0s,亮 1.0s,灭 1.0s,循环
SSD TS SSD 脱扣	Power		Cycle, on 0.1s, off 0.1s, on 0.1s, off 1.0s 亮 0.1s,灭 0.1s,亮 0.1s,灭 1.0s,循环
SPD TS / Life≤1% SPD 遥信/ 寿命≤1%	Power		Cycle, on 0.1s, off 0.1s, on 0.1s, off 0.1s 亮 0.1s,灭 0.1s,亮 0.1s,灭 0.1s,循环

3. Assembly and disassembly



安装/Assenmbly

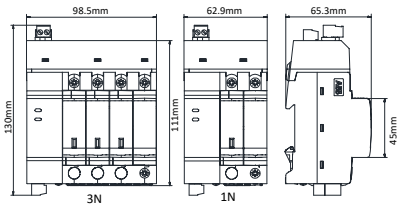


拆卸/Disassembly

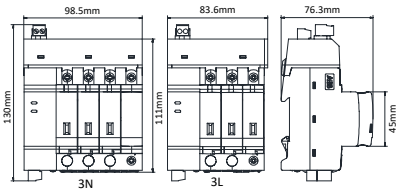
4. Size and wiring

4.1 Product Size

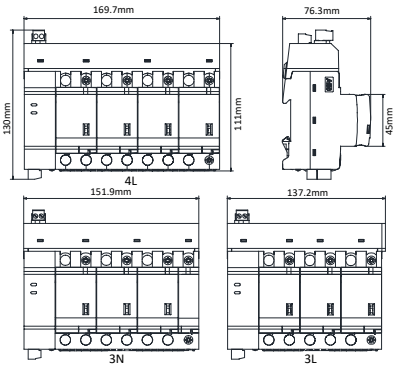
eOVR T2-T3 1N 20-275
eOVR T2 1N 40-350
eOVR T2-T3 3N 20-275
eOVR T2 3N 40-350



eOVR T2 3L 40-275s
eOVR T2 3N 80-440s
eOVR T1-T2 3N 12.5-275s



eOVR T1-T2 3L 12.5-440s
eOVR T1-T2 3N 12.5-440s
eOVR T1-T2 4L 12.5-440s



4. 尺寸与接线

4.1 产品尺寸

2. 产品示意

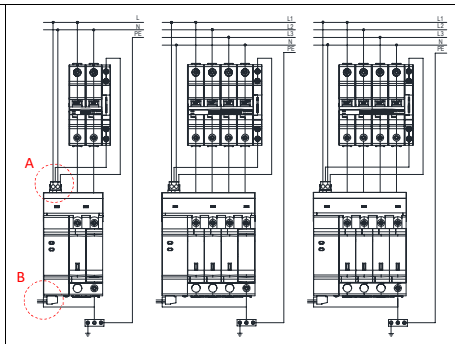
2.1 端口及组件说明

2.2 LED 指示说明

3. 安装与拆卸

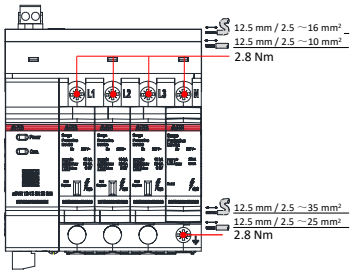
4. 尺寸与接线

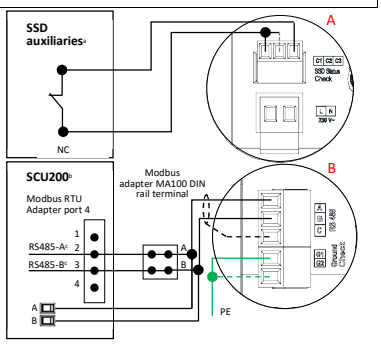
4.2 Wiring diagram

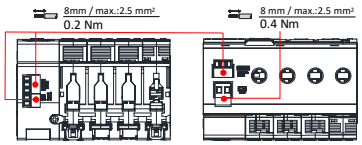


230/400V +/-20%	eOVR...1N XX-275	eOVR...3N XX-275 eOVR...3N XX-275s	/	230/400V +/-20%	eOVR...3L XX-275s
230/400V +/-50%	eOVR...1N XX-350	eOVR...3N XX-350 eOVR...3N XX-440s	eOVR...4L XX-440s	230/400V +/-50%	eOVR...3L XX-440s

Comments/备注:
- The wiring diagram here is a typical example using SSDs as upstream back-up protective devices to protect SPDs from overcurrent caused by unexpected degradation. This does not mean other overcurrent protective devices, i.e., MCB, MCCBs or fuses, cannot be used. Recommended external disconnectors are listed in the parameter table in page 2.
- 这里是接线图的一种典型示例，使用 SSD 作为上游后备保护器，以保护 SPD 免受劣化引起的过电流。这并不意味着不能使用其他过流保护装置，如 MCB、MCCB 或熔断器。第 2 页参数表中列出了推荐的外部隔离开关。
- SSD stands for SPD specific disconnector. It can trigger at a very low power-frequency current (3A) and withstands very high surge currents (Imax=120A, Iimp=25kA). Its rated short-circuit capacity can reach as high as 100kA.
- SSD 代表 SPD 专用断路器。它可以在非常低的工频电流（3A）下触发，并承受非常高的浪涌电流（Imax=120A, Iimp=25kA）。其额定短路电流高达 100kA。



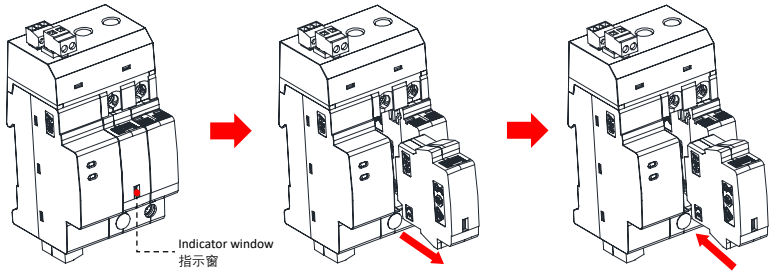




a: Remote signal of other external disconnectors can be connected to the eOVR, in addition to SSDs auxiliaries.
a: 除了 SSD 附件，其他外部断路器的远程信号也可以连接到 eOVR 上。
b: When SCU200 is used, please ensure the FW update is at least 1.2. In addition, SCU100 can be used.
b: 当使用 SCU200 时，请确认固件版本不低于 1.2。此外，还可以使用 SCU100。
c: Don't invert A and B terminals as this will prevent communication. In addition, shielded twisted pair cable is recommended for communication.
c: 不要将 A 与 B 通信端子接反了，否则会妨碍通信。此外，通信线建议使用屏蔽双绞线。

5. Replace the cartridge

5.更换芯体



- When the life of SPD is 1%, it is recommended to pull out the seriously degraded cartridge and replace it with a new one of the same model.
- 当 SPD 剩余寿命为 1%时，建议拔出劣化严重的芯体更换同型号的新芯体。
- When SPD remote signal is 1 / life =0% / pluggable cartridge indicator window turns red, the failed cartridge must be removed and replaced with a new one of the same model.
- 当 SPD 遥信为 1 / 剩余寿命=0% / 可插拔芯体指示窗变红时，必须拔出失效的芯体更换同型号的新芯体。

6.Communication commissioning

6.通信配置

Modbus communication parameters /通信参数:

- Default ID /默认地址：1
- ID range / 地址范围：1 ~ 247[a]
- Baud rate /波特率：9600, 19200, 38400, 57600, 115200[b]
- Byte format /字节格式：8N1

QR Code for Modbus Communication instruction.

Modbus 通信说明的二维码。

a: If the Digital SPD eOVR is connected to SCU200, the device ID range 32 ~ 48 could be set.
a: 如果 Digital SPD eOVR 与 SCU200 连接，则可设置的地址范围是 32 ~ 48。
b: Products with firmware version earlier than V1.0.11 only support the configuration of 9600bps baud rate.
b: 固件版本早于 V1.0.11 的产品只支持配置波特率 9600bps。

7. Technical data

7.技术数据

	Power Supply /供电电源
Voltage /电压	230VAC
Frequency /频率	50/60Hz
Power consumption /功耗	5W max
	Surge current detection /浪涌电流测量
Surge current range /浪涌电流峰值范围	1kA ~ 80kA
Deviation /误差	≤±(Standard value *15%+0.8kA)
Surge level to trigger event counter /浪涌事件记录触发值	1kA
	Leakage current measurement /泄漏电流测量
Resitive leakage current range /泄漏电流范围	10μA ~ 500μA
Deviation /误差	≤±(Standard value *10%+2μA)[a]
	Mechanical properties /机械特性
IP degree /IP 防护等级	IP 20
	Climate condition /环境
Installation position /安装位置	Indoor/户内
Operating temperature /工作温度	-25℃ ~ 70℃
Storage temperature /贮藏温度	-40℃ ~ 85℃
Humidity /湿度	5% ~ 95%
Maximal altitude /海拔	2000m
	Communication /通信
Protocol /通信协议	Modbus RTU
Hardware port /硬件接口	RS485
	Standard /标准
Product standard /产品标准	NB/T 10284-2019 GB/T 18802-2020
EMC /电磁兼容性	IEC 61000-6-2 IEC 61000-6-3

a: Tested at standard experimental temperature at 15℃ ~ 35℃/在标准实验温度 15℃ ~ 35℃下测得

8. eOVR electrical parameters / eOVR电气参数

			eOVR T1-T2 3N 12.5-275s	eOVR T1-T2 3N 12.5-440s	eOVR T1-T2 3L 12.5-440s	eOVR T1-T2 4L 12.5-440s	eOVR T2 3N 80-440s	eOVR T2 3L 40-275s	eOVR T2 1N 40-350	eOVR T2 3N 40-350	eOVR T2-T3 1N 20-275	eOVR T2-T3 3N 20-275
System network			TT/TN-S	TT/TN-S	TN-C	TT/TN-S	TT/TN-S	TN-C	TT/TN-S	TT/TN-S	TT/TN-S	TT/TN-S
Nominal voltage		V	230/400	230/400	230/400	230/400	230/400	230/400	230/400	230/400	230/400	230/400
Type of current / frequency		Hz	47 - 63	47 - 63	47 - 63	47 - 63	47 - 63	47 - 63	47 - 63	47 - 63	47 - 63	47 - 63
Test class			I-II/T1-T2	I-II/T1-T2	I-II/T1-T2	I-II/T1-T2	II/T2	II/T2	II/T2	II/T2	II-III/T2-T3	II-III/T2-T3
Protection mode			L-N/N-PE	L-N/N-PE	L-PEN	L-PE/N-PE	L-N/N-PE	L-PEN	L-N/N-PE	L-N/N-PE	L-N/N-PE	L-N/N-PE
Configuration			3P+N	3P+N	3P	4P	3P+N	3P	1P+N	3P+N	1P+N	3P+N
Maximal continuous operating voltage	U_c	V	275/255	440/440	440	440/440	440/255	275	350/255	350/255	275/255	275/255
Nominal discharge current	I_n (8/20μs)	kA	20/50	20/50	20	20/20	20/30	20	20/30	20/30	10/30	10/30
Maximal discharge current	I_{max} (8/20μs)	kA	80/100	80/100	80	80/80	80/80	40	40/80	40/80	20/80	20/80
Type 1 impulse current	I_{imp} (10/350μs)	kA	12.5/50	12.5/50	12.5	12.5/12.5	-	-	-	-	-	-
Voltage protection level at In	Up	kV	1.4/1.4	1.8/1.9	1.8	1.8/1.8	2.1/1.4	1.4	1.5/1.4	1.5/1.4	1.0/1.4	1.0/1.4
Short circuit withstand	I_{SCCR}	kA	100	100	100	100	100	100	100	100	100	100
Total current	I_{Total}	kA	80	80	80	80	80	60	80	80	80	80
Follow current interrupted	I_{fi}	kA	-/0.1	-/0.1	-	-/0.1	-/0.1	-	-/0.1	-/0.1	-/0.1	-/0.1
Residual current	I_{PE}	mA	<0.01	<0.01	<0.6	<0.6	<0.01	<0.6	<0.01	<0.01	<0.01	<0.01
TOV withstand (L-N:5s/N-PE:200ms)		V	337/1200	337/1200	337	337/-	337/1200	337	337/1200	337/1200	337/1200	337/1200
Back-up protection rating			SSD[1] MCCB: ≥100A FUSE: ≥160A gG	SSD MCCB: ≥100A FUSE: ≥160A gG	SSD MCCB: ≥100A FUSE: ≥160A gG	SSD MCCB: ≥100A FUSE: ≥160A gG	SSD MCCB: ≥100A FUSE: ≥125A gG	SSD MCB: ≥63A FUSE: ≥80A gG	SSD MCB: ≥63A FUSE: ≥80A gG	SSD MCB: ≥63A FUSE: ≥80A gG	SSD MCB: ≥63A FUSE: ≥80A gG	SSD MCB: ≥63A FUSE: ≥80A gG
Response time		ns	<25/<100	<25/<100	<25	<25/<25	<25/<100	<25	<25/<100	<25/<100	<25/<100	<25/<100
Pluggable cartridge			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
End of life indicator			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fire resistance according to UL 94			V0	V0	V0	V0	V0	V0	V0	V0	V0	V0
Replacement cartridges [2]												
Phase / Product ID			2CTB815710R2600	2CTB815710R5500	2CTB815710R5500	2CTB815710R5500	2CTB815708R5500	2CTB815710R2600	2CTB803886R1000	2CTB803886R1000	2CTB803876R1200	2CTB803876R1200
Neutral / Product ID			2CTB815710R2700	2CTB815710R5600	2CTB815710R5600	-	2CTB815708R5700	2CTB815710R2700	2CTB803886R0000	2CTB803886R0000	2CTB803876R0000	2CTB803876R0000

(1) SSD represents SPD specific disconnectors, which is specifically designed to protect SPDs

(2) Cartridges produced in Bulgaria for replacement could have different declared values but can be used for replacement.

9. Cyber Security Disclaimer

Digital SPD eOVR's communication interface is designed to transmit information and data. The communication interface should be connected to a secured communication network. It is your sole responsibility to provide and continuously ensure a secured connection between the product and your network or any other network (as it may be) and establish and maintain appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of antivirus programs,etc.) to protect the Digital SPD eOVR product, the network, its system and interfaces against any kind of security breaches, unauthorized access, interference, intrusion leakage and/or theft of data or information. ABB LV Installation Materials CO., Ltd. Beijing and its affiliates are not liable for damages and/or losses related to such security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

Although ABB LV Installation Materials CO., Ltd. Beijing provides functionality testing on the products and updates that we release, you should institute your own testing program for any product updates or other major system updates (to include but not limited to code changes, configuration file changes, third party software updates or patches, hardware change out, etc.) to ensure that the security measures that you have implemented have not been compromised and system functionality in your environment is as expected.

9. 网络安全免责声明

Digital SPD eOVR 的设计的通信接口用于传递信息和数据，该通信接口应连接到安全的通信网络。您有责任提供并持续确保产品与您的通信网络或任何其他网络（视情况而定）之间的安全连接，并建立和维护适当的措施（例如但不限于安装防火墙、应用认证措施、数据加密、安装防病毒程序等），以保护 Digital SPD eOVR 产品、网络、系统和接口免受任何类型的安全漏洞、未经授权的访问、干扰、入侵、泄漏和／或数据或信息被盗。对由上述安全漏洞、未经授权的访问、干扰、入侵、泄露和/数据或信息被盗引起的损坏和/或损失，北京 ABB 低压电器有限公司及其附属公司概不负责。

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(EN)English

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Warning – Working with high voltage is potentially lethal. Persons subjected to high voltage may suffer cardiac arrest, burn injuries, or other severe injuries. To avoid such injuries, make sure to disconnect the power supply before you start the installation. Electrical equipment should only be installed, accessed, serviced and maintained by qualified electrical personnel.

Warning – For safety reasons it is recommended that the equipment is installed in a way that makes it impossible to reach or touch the terminal blocks by accident.The best way to make a safe installation is to install the unit in an enclosure. Further, access to the equipment should be limited through use of lock and key, controlled by qualified electrical personnel.

Warning – The digital SPD eOVR must always be protected by fuses or breakers on the incoming side. It is recommended that there should be a short circuit breaker installed near the digital SPD eOVR. Do not operate the equipment outside the specified technical data.

Service and Maintenance
The digital SPD eOVR contains no parts that can be repaired or exchanged except the pluggable cartridge. A broken eOVR must be replaced.

Caution – Be careful that no liquid gets into the digital SPD eOVR since it may damage the equipment.

(ZH) 简体中文

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警告 – 为安全起见，建议采用如下安装方式，即端子不会被无意中碰到或接触到。最安全的安装方式是将该装置安装在配电箱中。此外只有通过使用由合格电气人员掌管的锁和钥匙才能接触到智能电涌保护器。

警告 – 必须始终在输入端连接保险丝或断路器来为智能电涌保护器提供保护。建议在智能电涌保护器旁安装一个断路器。禁止在超出规定的技术数据范围的情况下使用智能电涌保护器。

维修与维护
此智能电涌保护器除电涌保护器可插拔的芯体外的其他部件均无法修理或更换。一经损坏，必须更换。

小心 – 注意不要让任何液体进入智能电涌保护器，因为这会使电涌保护器遭到损坏。