Instruction Bulletin

8294-0090A 6/02

Titan DR
Surge Protective Device

INTRODUCTION

These Surge Protective Devices (SPD) provide surge protection for electrical and automation cabinets. They can be mounted on standard 35 mm rail near the incoming power source to isolate the cabinet from the outside environment. This product is ideal for manufacturers and electrical installers requiring designed-in power protection.

NOTE: Must be installed with the proper Merlin Gerin Supplementary Protector (MGSP).

PRECAUTIONS

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, BURN OR EXPLOSION

- This equipment must be installed and serviced only by qualified electrical personnel in accordance with National and Local Electrical Codes.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors, and covers before turning on power to this equipment.
- Do not apply petroleum-based products to non-metallic parts.

Failure to follow these instructions will result in death or serious injury.

CAUTION

HAZARD OF EQUIPMENT DAMAGE

- Megger® or hi-potential tests will damage this surge protective device. Turn off all power supplying the equipment and isolate the surge protective device before testing.
- Must be installed with the proper Merlin Gerin Supplementary Protector (MGSP).
- Not for use on ungrounded systems.

Failure to follow these precautions can result in equipment damage.

INSTALLATION

NOTE: Follow mounting steps for all 1 Pole, 2 Pole and 4 Pole modules.

1. Mount SPD as shown in Figure 1.
2. Confirm SPD is rated for your system by comparing the L-N voltage measurements to the Service Voltage (Un) on the product label.
3. Insure that C60N Merlin Gerin Supplementary Protectors (MGSP) of proper rating, matched to the wire size, are used according to Table 1.
4. Connect wires as shown in Figure 3 keeping lead lengths as short as possible, as shown in Figure 2.

NOTE: Keep conductor length as short as possible with no sharp bends. Do not loop or coil wires.

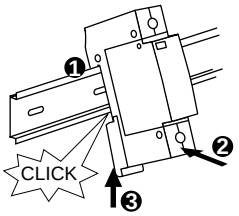
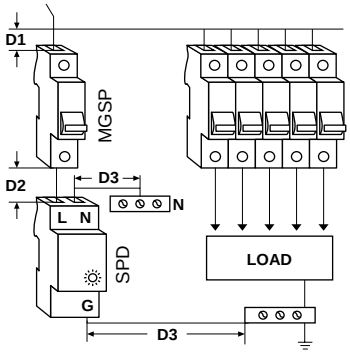
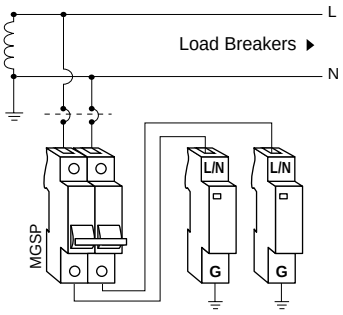


Figure 1: Mounting

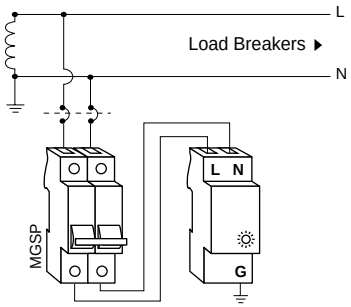


Distance D1 + D2 + D3 ≤ 20 in. (50 cm)

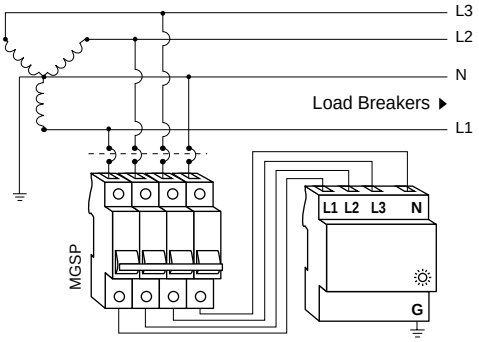
Figure 2: Lead Lengths



Single-phase, 2-wire 120 Vac or 230 Vac using a 1 Pole SPDs



Single-phase, 2-wire 120 Vac or 230 Vac using a 2 Pole SPD



Three phase, 4-wire 208Y/120 Vac or 400Y/230 Vac using a 4 Pole SPD

Figure 3: Wiring Diagrams

Table 1

Voltage Specifications					C60N MGSP				
Cat. No.	**Service Voltage, Un**	**Poles**	**Dry Contacts**	**Max Surge Current/ Phase, Imax**	**Rating**	**1 Pole**	**2 Pole**	**3 Pole**	**4 Pole**
DR1P20K120S	120 V	1	No	20 kA	10 A, Curve B	MG24116	MG24131	–	–
DR1P20K230S	230 V	1	No	20 kA	10 A, Curve B	MG24116	MG24131	–	–
DR1P20K400S	400 V	1	No	20 kA	10 A, Curve B	MG24116	MG24131	–	–
DR1P45K120S	120 V	1	No	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR1P45K120DC	120 V	1	Yes	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR1P45K230S	230 V	1	No	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR1P45K230DC	230 V	1	Yes	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR1P45K400S	400 V	1	No	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR1P45K400DC	400 V	1	Yes	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR1P65K120S	120 V	1	No	65 kA	25 A, Curve B	MG24120	MG24135	–	–
					20 A, Curve C	MG24435	MG24452	–	–
DR1P65K120DC	120 V	1	Yes	65 kA	25 A, Curve B	MG24120	MG24135	–	–
					20 A, Curve C	MG24435	MG24452	–	–
DR1P65K230S	230 V	1	No	65 kA	25 A, Curve B	MG24120	MG24135	–	–
					20 A, Curve C	MG24435	MG24452	–	–
DR1P65K230DC	230 V	1	Yes	65 kA	25 A, Curve B	MG24120	MG24135	–	–
					20 A, Curve C	MG24435	MG24452	–	–
DR1P65K400S	400 V	1	No	65 kA	25 A, Curve B	MG24120	MG24135	–	–
					20 A, Curve C	MG24435	MG24452	–	–
DR1P65K400DC	400 V	1	Yes	65 kA	25 A, Curve B	MG24120	MG24135	–	–
					20 A, Curve C	MG24435	MG24452	–	–
DR2P20K120S	120 V	2	No	20 kA	10 A, Curve B	MG24116	MG24131	–	–
DR2P20K230S	230 V	2	No	20 kA	10 A, Curve B	MG24116	MG24131	–	–
DR2P45K120S	120 V	2	No	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR2P45K230S	230 V	2	No	45 kA	20 A, Curve B	MG24119	MG24134	–	–
					10 A, Curve C	MG24432	MG24449	–	–
DR4P20K120S	208Y/120 V	4	No	20 kA	10 A, Curve B	–	–	MG24146	MG24161
DR4P20K120DC	208Y/120 V	4	Yes	20 kA	10 A, Curve B	–	–	MG24146	MG24161
DR4P20K400S	400Y/230 V	4	No	20 kA	10 A, Curve B	–	–	MG24146	MG24161
DR4P20K400DC	400Y/230 V	4	Yes	20 kA	10 A, Curve B	–	–	MG24146	MG24161
DR4P45K120S	208Y/120 V	4	No	45 kA	20 A, Curve B	–	–	MG24149	MG24164
					10 A, Curve C	–	–	MG24466	MG24483
DR4P45K120DC	208Y/120 V	4	Yes	45 kA	20 A, Curve B	–	–	MG24149	MG24164
					10 A, Curve C	–	–	MG24466	MG24483
DR4P45K400S	400Y/230 V	4	No	45 kA	20 A, Curve B	–	–	MG24149	MG24164
					10 A, Curve C	–	–	MG24466	MG24483
DR4P45K400DC	400Y/230 V	4	Yes	45 kA	20 A, Curve B	–	–	MG24149	MG24164
					10 A, Curve C	–	–	MG24466	MG24483
DR4P80K120S	208Y/120 V	4	No	80 kA	25 A, Curve C	–	–	MG24470	MG24487
DR4P80K120DC	208Y/120 V	4	Yes	80 kA	25 A, Curve C	–	–	MG24470	MG24487
DR4P80K400S	400Y/230 V	4	No	80 kA	25 A, Curve C	–	–	MG24470	MG24487
DR4P80K400DC	400Y/230 V	4	Yes	80 kA	25 A, Curve C	–	–	MG24470	MG24487

TROUBLESHOOTING

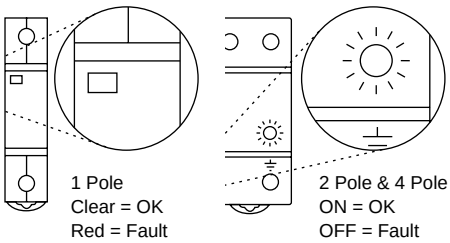


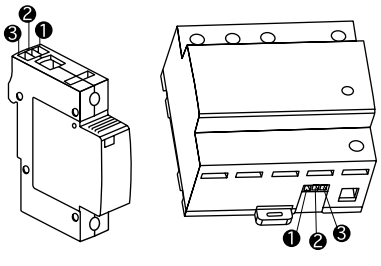
Figure 4: Indicator Diagnostics

Diagnostic Operation

- Clear (1 Pole), LED ON (2 & 4 Pole) = Normal Operation. (see Figure 4)
- Red Indicator (1 Pole), LED OFF
  (2 & 4 Pole) = Fault. Check line voltage, breakers and connections. If OK, replace unit.
- Remote Monitoring (Dry Contact option) (see Figure 5). A three-pin socket and plug are provided to allow the customer to wire one set of normally open (NO) and normally closed (NC) “Dry” Contacts to a remote monitoring indicator. The customer must provide power for this indicator, keeping within the specifications shown in Figure 5.

  In event of a fault within the 1 Pole SPD, the internal mechanical contacts change position.

NOTE: The supplied three-pin plug can accept up to #16 AWG (1.5mm^2) wire.



1 Pole: 20 mA @ 20 VAC or DC (0.4 VA max)
4 Pole: 0.3 A @125 VAC, 110 VDC
1.0 A @ 30 VDC

Figure 5: Remote Monitoring (optional)

General Specifications	
Max Surge Current	See Imax in Table 1
Housing	Type 1 (IP20)
Product Weight	1 Pole 0.22 lb. (100 g), 2 Pole 0.24 lb. (109 g), 4 Pole 0.56 lb. (255 g)
Connection Method	Parallel
Terminal Capacity	#12-#4 AWG (3-25mm²)
Terminal Torque	45 lb-in. (5 N·m)
Thermal Fusing	Yes
Operating Temperature	-22° – +160°F (-30° – +70°C)
Operating Frequency	50/60/400 Hz
Diagnostics	Red Indicator (1 Pole), Green Status LED (2 & 4 Pole)
Product Standards	c UL us to UL 1449-2nd Ed and to CSA C22.2 No. 0-M91, IEC 61643-1

1 POLE MODULE REPLACEMENT

⚠ DANGER

HAZARD OF ELECTRIC SHOCK

Turn off all power supplying this equipment before working on or inside equipment.

Failure to follow these instructions will result in death or serious injury.

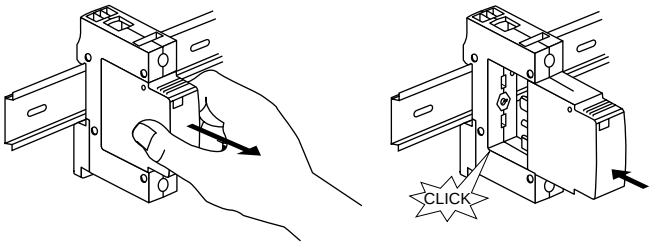
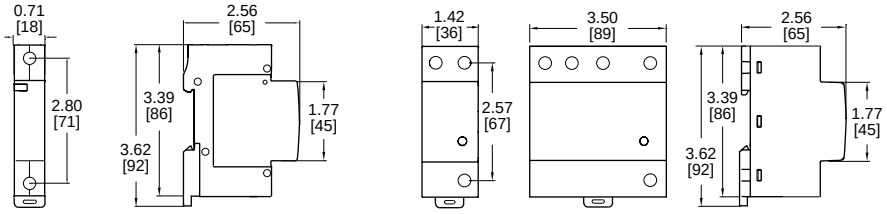


Figure 6: 1 Pole Module Replacement

DIMENSIONS



Dimensions: in. [mm]

Figure 7: Dimensions

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