

# INSTALLATION INSTRUCTIONS

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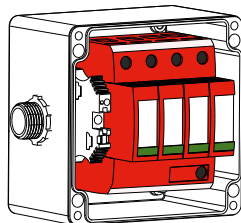
## DEHNguard EZ50-S

## Technical Data



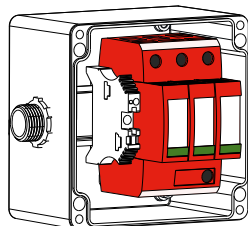
### **DANGER**

**Hazardous Voltage**  
Will cause severe injury or death.  
Working on or near energized circuits poses a serious risk of electrical shock. De-energize all circuits before installing or servicing this equipment and follow all prescribed safety procedures.



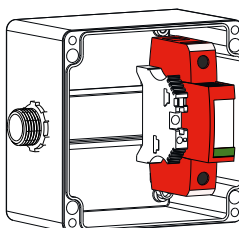
DG EZ50-S 120/208 V  
DG EZ50-S 277/480 V

Figure without obligation



DG EZ50-S 120/240 V  
DG EZ50-S 480 V  
DG EZ50-S 347/600 V

Figure without obligation

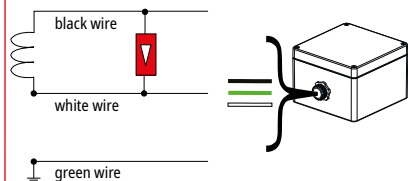


DG EZ50-S 120 V

Figure without obligation

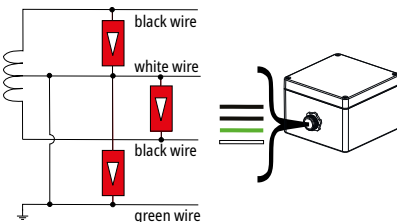
DEHNguard EZ50-S ...	... 120 V	... 120/240 V	... 120/208 V	... 277/480 V	... 480 V	... 347/600 V
Types (Part No.)	908 171	908 166	908 167	908 168	908 169	908 170
Nominal Voltage (Vac)	120 V	120 / 240 V	120 / 208 V	277 / 480 V	480 V	347 / 600 V
MCOV	230 V	180 V (L-N, N-G), 370 V (L-G, L-L)	180 V (L-N, N-G), 360 V (L-G, L-L)	385 V (L-N), 565 V (L-G), 770 V (L-L), 180 V (N-G)	550 V (L-G), 1100 V (L-L)	510 V (L-G), 1020 V (L-L)
VPR	800 V	700 V (L-N, N-G), 1200 V (L-G, L-L)	700 V (L-N, N-G), 1200 V (L-G, L-L)	1200 V (L-N), 2500 V (L-L), 1800 V (L-G), 700 V (N-G)	1800 V (L-G), 3000 V (L-L)	1800 V (L-G), 3000 V (L-L)
Phase	Single Phase	Split Phase	3 Phase Wye	3 Phase Wye	3 Phase Delta	3 Phase Wye
Number of Poles	1	3	4	4	3	3
Number of Wires	3	4	5	5	4	4
Circuit	Single Phase 2 W+G	Split Phase 3 W+G	3 Phase Wye 4 W+G	3 Phase Wye 4 W+G	3 Phase Delta 3 W+G	3 Phase Wye 3 W+G
Replacement plug-in module Type (Part No.)	<b>DGU PLU 230</b> 908 012	<b>DG PLU 180</b> 908 011	<b>DG PLU 180</b> 908 011	<b>DG PLU 385</b> 908 014 <b>DG PLU 180</b> 908 011 (N)	<b>DG PLU 550</b> 908 015	<b>DGU PLU 510</b> 908 013
Weight	425 g	616 g	698 g	735 g	685 g	675 g
I <sub>max</sub>	50 kA					
I <sub>n</sub>	20 kA					
SCCR	200 kA					
Frequency	50/60 Hz					
Environmental Protection	NEMA 4X, IP66, UL50E Type 4X Outdoor					
Operating Temperature	- 40° C ... +85° C					
Dimensions	H: 4.72" (120 mm), W: 4.80" (122 mm), D: 3.35" (85 mm)					
Enclosure material	Polycarbonate V0 Enclosure					
Mounting method	1/2" NPT or Flush mounting with external brackets					
Application	UL Type 1 SPD					
Approval Standard	UL 1449 5th Edition, UL50E, UL 508A					
Conductor	36" Long (914 mm), 10 AWG stranded					

**DG EZ50-S 120 V**  
**2 W+G**  
Part No. 908 171



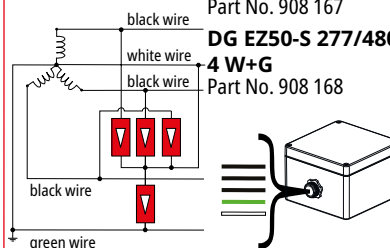
**Single Phase 2 Wire + G**

**DG EZ50-S 120/240 V**  
**3 W+G**  
Part No. 908 166



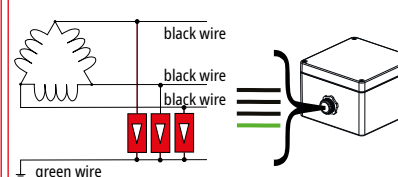
**Split Phase 3 Wire + G**

**DG EZ50-S 120/208 V**  
**4 W+G**  
Part No. 908 167  
**DG EZ50-S 277/480 V**  
**4 W+G**  
Part No. 908 168



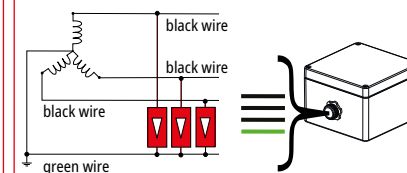
**3 Phase Wye 4 Wire + G**

**DG EZ50-S 480 V**  
**3 W+G**  
Part No. 908 169



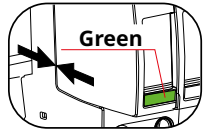
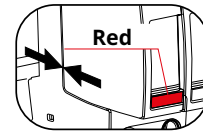
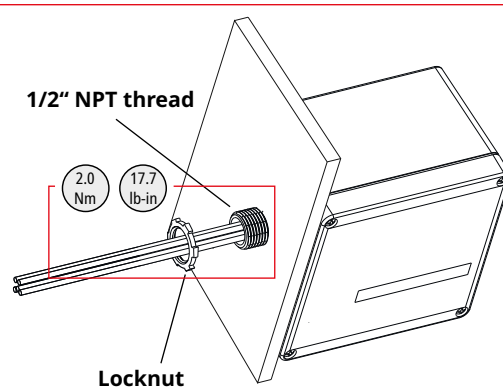
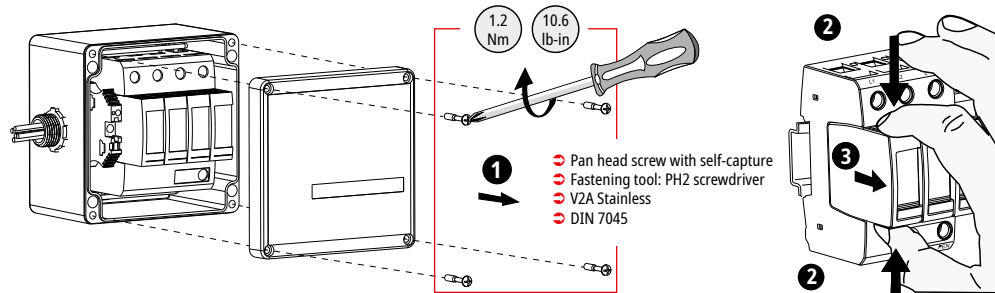
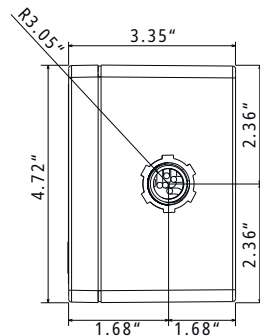
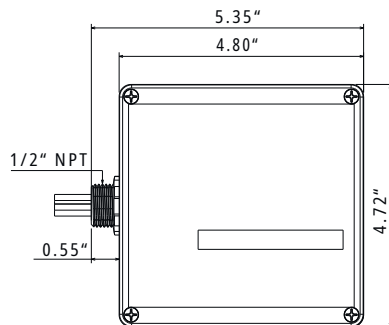
**3 Phase Delta 3 Wire + G**

**DG EZ50-S 347/600 V**  
**3 W+G**  
Part No. 908 170



**3 Phase Wye 3 Wire + G**

UL 1449

Type 1  
SPDType 4-1  
Component Assembly**DEHNguard EZ50-S****Green = OK****Red = Replace****Fault Indication****Mounting****Replacement of plug-in module in case of a Red visual indication****Dimensions**

**Surge Protection**  
**Lightning Protection / Earthing**  
**Safety Equipment**  
**DEHN protects.**

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**1. Safety Instructions**

Warning: Risk of Electric Shock - Disconnect power before servicing. Service to be performed by qualified personnel only. Suitable for use on a circuit capable of delivering not more than 200 kA rms symmetrical amperes.

The SPD is intended for Installation in NEMA 4X environments in accordance with the National Electrical Code, ANSI/NFPA 70.

- The DEHNguard EZ50-S series SPD is to be installed only by qualified personnel and to be done so in compliance with all local and National Electrical Code requirements.
- For proper system protection and safety, coordination with other SPDs within the facility must be considered. Contact our application engineer for assistance if in doubt.
- Installation and connection to service must be done only when the system is de-energized.
- The arrester's installation is to be compliant with its rating and therefore must not be installed in a more severe environment subjecting it to higher voltages, currents or energy levels than for which its technical specifications provide.
- Opening or tampering with the red thermoplastic enclosure inside the box may damage the effective operation of the SPD and is inadvisable and will void the warranty.

**2. General Installation Instructions**

Sections 250 and 285 of the NEC (NFPA 70) and the IEEE Green Book-Std. 142 should be consulted. Local electrical codes also have to be considered.

**System voltage:** Make sure that the SPD is correctly rated for the system where the SPD should be applied. The maximum continuous operating voltage (MCOV) must not be exceeded.

**Mounting:** Make sure that the SPD is installed as close as possible to the device to be protected. The conductor length for these connections must be kept as short and as straight as possible. The SPDs are to be mounted directly on breaker panels or control cabinets via the 1/2" NPT knockout. Alternatively, SPDs can be also be flush-mounted via its external mounting brackets.

**NEMA 4X Outdoor installation:** The DEHNguard EZ50-S is rated NEMA 4X as a box enclosure and NPT connection inside the EZ50 box. You must ensure that the external NPT pipe and wires inside the breaker panel are completely sealed and protected from the environment since water and debris can flow inside the NPT pipe and the EZ50-S box which is unacceptable and will void the warranty.

**Conductor Connections:** The provided 10 AWG wires will be used for the phase (black), ground (green) and neutral (white) connections to the SPD. If the SPDs are installed more than six conductor feet (two meters) from the neutral to ground bond point (usually service entrance) then an additional SPD should be installed between neutral and ground (at the service entrance). **Grounding:** Make sure that the grounding of the SPD is as short and straight as possible with the specified wire size according to the technical data. Use a local equipotential bonding bar if possible. For proper operation the SPD must be connected to a low impedance ground. Recommend using the largest diameter (high strand count) wire possible without exceeding the technical data for maximum wire size.

**Non-Fusing:** The DEHNguard EZ50-S is designed to be installed without fuses. Is is suitable for use on a circuit with maximal SCCR and Nominal Voltage according to Technical Data. This device features an internal protection that will disconnect the surge protective component at the end of its useful life but will maintain power to load - now unprotected. If this situation is undesirable for the application, the arrester plug-in module must be replaced.

**Problem Diagnostics:** If there should be any problem please contact your local DEHN representative.