

Features

- High energy MOV technology with Advanced Thermal Disconnecter (TD+)
- Status indicator
- Replaceable modular design
- For Common Mode and Differential Mode protection
- Remote signaling capability
- IEC/EN 61643-31 compliant Class I + Class II / T1+T2 SPD
- With 50 kA I_{max} (8/20 μ s) and 7.5 kA I_{imp} (10/350 μ s) current capability
- RoHS compliant*

1440 Series – IEC Class II DC Surge Protective Device

General Information

The Bourns® Model 1440 Series is an IEC Class I + Class II DC Surge Protective Device (SPD) designed to protect power systems from damage due to lightning, transients and power surges, up to rated limits.

The Model 1440 Series is a Din-Rail mountable SPD designed to protect DC power systems operating up to 1500 VDC.

Additional Information

Click these links for more information:



Electrical Characteristics

Characteristic	Model No.				
	1440-PV-48-P 1440-PV-48-D	1440-PV-60-P 1440-PV-60-D	1440-PV-100-P 1440-PV-100-D 1440-PV-100-Y	1440-PV-150-P 1440-PV-150-D	1440-PV-200-P 1440-PV-200-D 1440-PV-200-Y
Network Voltage (U_n) DC	48 VDC	60 VDC	100 VDC	150 VDC	200 VDC
Compliance	IEC/EN 61643-31 Class I + Class II / T1 + T2				
Product Technologies	High energy MOV Technology Advanced Thermal Disconnecter (TD+)				
Protection Mode	Single CM ¹		Single CM CM/DM ¹	Single CM ¹	Single CM CM/DM ¹
Max. Operating Voltage (U_c) DC	85 VDC	100 VDC	125 VDC 170 VDC (Y config.)	170 VDC	225 VDC 250 VDC (Y config.)
Nominal Discharge Current (I_n) 8/20 μ s	20 kA				
Max. Discharge Current (I_{max}) 1 Impulse 8/20 μ s	50 kA				
Impulse Discharge Current (I_{imp}) 10/350 μ s	7.5 kA				
Protection Level (U_p)	≤ 0.6 kV ≤ 0.6 kV	≤ 0.6 kV ≤ 0.6 kV	≤ 0.7 kV ≤ 0.7 kV ≤ 1.0 kV	≤ 0.8 kV ≤ 0.8 kV	≤ 1.0 kV ≤ 1.0 kV ≤ 1.2 kV
Short Circuit Current Rating (I_{scpv})	25 kA				
Leakage Current at U_c	< 100 μ A				
Follow Current (I_f)	None				

Note 1. CM = Common Mode (+/PE or -/PE) and CM/DM = Common Mode and Differential Mode (\pm).

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*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

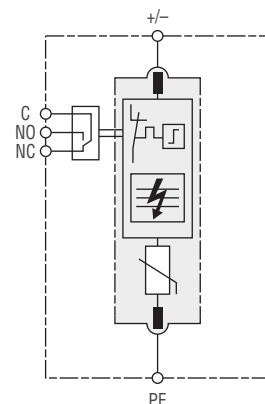
Actual product may differ from image shown.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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Electrical Diagram



Applications

- DC power systems
- Photovoltaic systems
- EV charging stations

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Electrical Characteristics (continued)

Characteristic	Model No.				
	1440-PV-300-P 1440-PV-300-D 1440-PV-300-Y	1440-PV-400-P 1440-PV-400-D 1440-PV-400-Y	1440-PV-500-P 1440-PV-500-D	1440-PV-600-P 1440-PV-600-D 1440-PV-600-Y	1440-PV-750-P
Network Voltage (U_n) DC	300 VDC	400 VDC	500 VDC	600 VDC	750 VDC
Compliance	IEC/EN 61643-31 Class I + Class II / T1 + T2				
Product Technologies	High energy MOV Technology Advanced Thermal Disconnect (TD+)				
Protection Mode	Single CM CM/DM ¹		Single CM ¹	Single CM CM/DM ¹	Single
Max. Operating Voltage (U_c) DC	350 VDC 340 VDC (Y config.)	460 VDC 450 VDC (Y config.)	560 VDC	670 VDC 700 VDC (Y config.)	800 VDC
Nominal Discharge Current (I_n) 8/20 μ s	20 kA				
Max. Discharge Current (I_{max}) 1 Impulse 8/20 μ s	50 kA				
Impulse Discharge Current (I_{imp}) 10/350 μ s	7.5 kA		6 kA	4.5 kA / 7.5 kA (Y config.)	
Protection Level (U_p)	≤ 1.2 kV ≤ 1.2 kV ≤ 1.5 kV	≤ 1.5 kV ≤ 1.5 kV ≤ 2.0 kV	≤ 2.0 kV ≤ 2.0 kV	≤ 2.2 kV	≤ 2.5 kV
Short Circuit Current Rating (I_{scpv})	25 kA				
Leakage Current at U_c	< 100 μ A				
Follow Current (I_f)	None				

Characteristic	Model No.			
	1440-PV-800-Y	1440-PV-1000-Y	1440-PV-1200-Y	1440-PV-1500-Y
Network Voltage (U_n) DC	800 VDC	1000 VDC	1200 VDC	1500 VDC
Compliance	IEC/EN 61643-31 Class I + Class II / T1 + T2			
Product Technologies	High energy MOV Technology Advanced Thermal Disconnect (TD+)			
Protection Mode	CM/DM ¹			
Max. Operating Voltage (U_c) DC	920 VDC	1120 VDC	1340 VDC	1500 VDC
Nominal Discharge Current (I_n) 8/20 μ s	20 kA			
Max. Discharge Current (I_{max}) 1 Impulse 8/20 μ s	50 kA			
Impulse Discharge Current (I_{imp}) 10/350 μ s	7.5 kA	6 kA	4.5 kA	
Protection Level (U_p)	≤ 2.8 kV	≤ 3.5 kV	≤ 4.0 kV	≤ 4.5 kV
Short Circuit Current Rating (I_{scpv})	25 kA			
Leakage Current at U_c	< 100 μ A			
Follow Current (I_f)	None			

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General Characteristics

Characteristic	1440-PV-xxx-x
Thermal Disconnecter	Internal green – normal; red - failure
Dimensions	See Product Dimensions
Connection	By Screw Terminal: Single-strand #2 AWG or 35 mm ² ; multi-strand #4 AWG or 25 mm ²
Disconnection Indicator	1 Mechanical Indicator
Mounting	Din-Rail, 35 mm Symmetrical
Remote Signaling	250 V / 0.5 A (AC) 125 V / 0.2 A (DC)
Enclosure Material	Thermoplastic UL 94V0

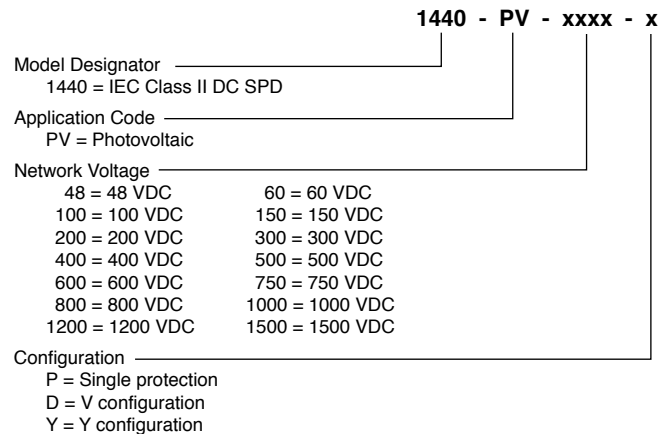
Environmental Characteristics

Characteristic	1440-PV-xxx-x
Operating Temperature	-40 °C to +85 °C
Operating Altitude	≤4000 m
Environmental Rating	IP 20

Standards Compliance

IEC/EN 61643-31 Class I + Class II, T1 + T2
 RoHS RoHS Directive 2015/863, Mar 31, 2015 and Annex

How to Order

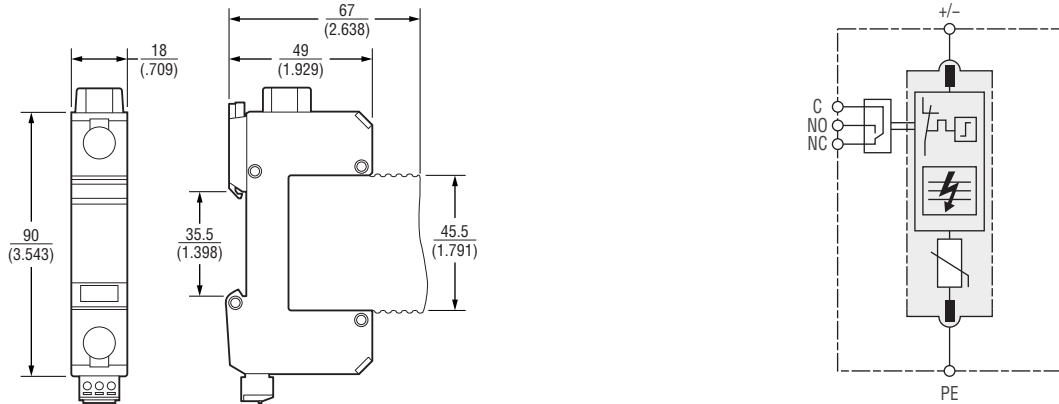


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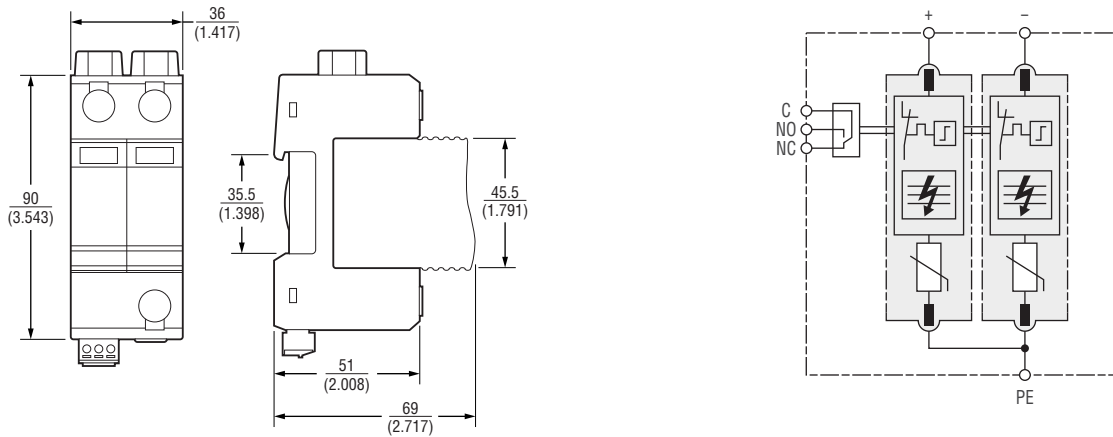
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Product Dimensions and Schematics

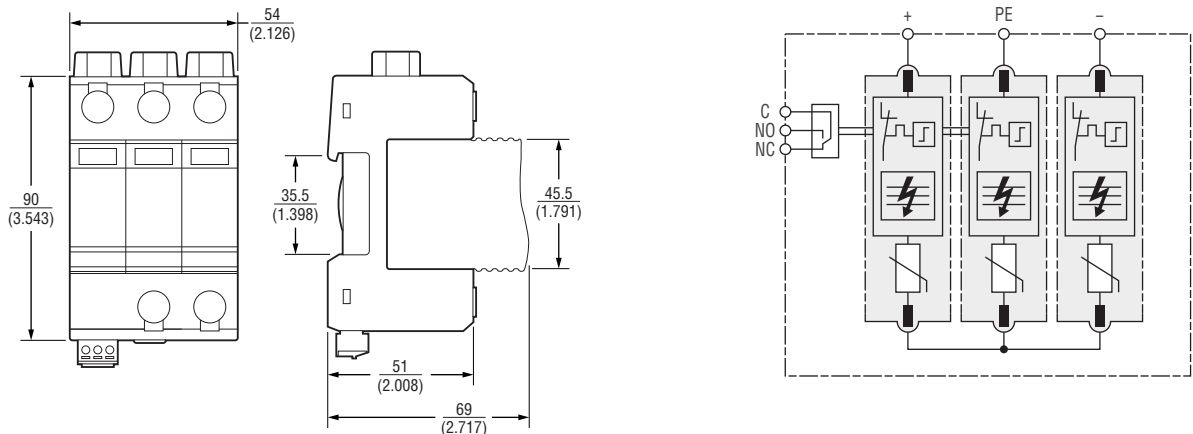
Single Protection



V Configuration



Y Configuration



REV. 08/24

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