

Equalizer 2 surge protective device— Innovative Technology



Contents

Description	Page
Introduction	2
Applications	2
Features	2
Standards and certifications	2
Configurable design	3
Tri-colored LED protection status indicators	3
Enclosure ratings, options, dimensions, and weights	3
VPR performance data	6
Specifications	7
Voltage configuration per enclosure size	8
Catalog number selection	8
Technical support information	8



Powering Business Worldwide

Introduction

Eaton's Innovative Technology Equalizer 2 surge protective devices are listed to UL® 1449 4th Edition and are part of the Innovative Technology System Shield™ protection solution. Application of Equalizer 2 units throughout a facility will ensure equipment is protected with the safest and most reliable surge protective devices available. The compact design and NEMA® 4X enclosure of the Equalizer 2 allows for installation in a variety of environments.

Applications

Equalizer 2 units are available in all common voltages and configurations, and in a variety of peak surge current capacity ratings from 50 through 200 kA per phase. Several feature package options, including Active Tracking Network® (ATN), audible alarm, and Form C contacts, are available to choose from. A range of configurable options is available to customize the Equalizer 2 features for most commercial and industrial applications, including service entrances, distribution panelboards, and point-of-use applications. Eaton's Innovative Technology Equalizer 2 Series surge protective devices are a key component to your System Shield protection strategy.



Equalizer 2 surge protective device



Panelboard with Equalizer 2 surge protective device

Features

- UL 1449 4th Edition-listed cULus
- 50 through 200 kA per phase peak surge current capacity ratings
- Thermally protected metal oxide varistor (MOV) technology
- Tri-colored LED protection status indicators
- 20 kA nominal discharge current (I_n) rating
- Eight available custom feature combinations
- Corrosion-resistant NEMA 4X enclosure with mounting feet
- 200 kA short-circuit current rating (SCCR)
- Factory prewired with 35 inches of 10 AWG wire
- No user-serviceable parts or items requiring periodic maintenance
- 10-year warranty can be extended to 15 years with product registration at Eaton.com/itvss

Standards and certifications

- UL 1449 4th Edition Type 1 and Type 2
- UL 1283 6th Edition (feature packages 2, 6, 7, and 8)
- Canadian Standards Association (CSA®) Type 1 and Type 2
- CSA C22.2 No. 269.1-14 for Type 1 SPD, CSA C22.2 No. 269.2-13 for Type 2 SPD, CSA C22.2 no. 8-13 for EMI filter



Configurable design

The Equalizer 2 Series allows for selecting and combining the options shown in **Table 1**. There are three individual features: Active Tracking Network (ATN), audible alarm, and Form C relay contacts. The Equalizer 2 offers maximum flexibility through its configurable design.

Table 1. Configurable features

Feature	Standard	Available option
Surge protection using thermally protected MOV technology	■	
Tri-colored LED protection status indicators for each phase	■	
Tri-colored LED protection status indicators for the neutral-ground protection mode	■	
Audible alarm		■
Form C relay contact		■
Active Tracking Network (ATN), providing up to 40 dB of noise attenuation from 10 kHz to 100 MHz ①		■

① Available on Type 2 SPD units only.

Tri-colored LED protection status indicators

Tri-colored protection status indicators show results of continuous self-diagnostic testing, including neutral-ground mode. The LED protection status indicators on the device have three LED color states, as shown in photos:

- Green—Fully protected
- Yellow—Loss of neutral-to-ground protection
- Red—Loss of protection



LED protection status indicators showing full protection and phase faults

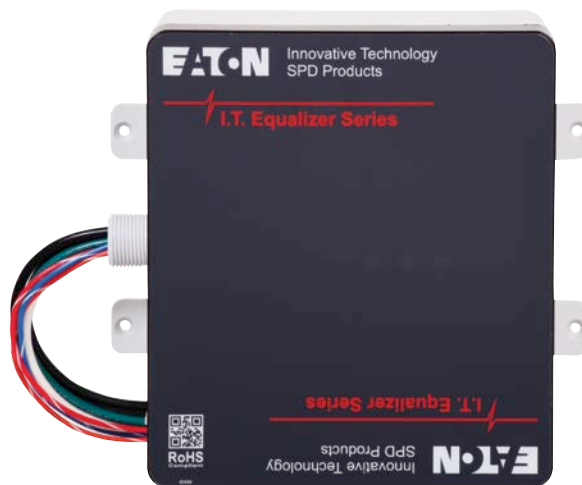
Enclosure ratings, options, dimensions, and weights

The Equalizer 2 enclosure is rated NEMA 4X with the supplied mounting feet, which lends itself to installation in a variety of environments. There are two enclosure sizes, P1 and P2, dependent on the voltage code and surge rating configuration. See **Table 5** to determine enclosure usage and dimensions.

Table 2. Available optional equipment ①

Available option	Catalog number
Flush mount plate for P1 enclosure	FLUSHMNTPLATE13-IT
Flush mount plate for P2 enclosure	FLUSHMNTPLATE14-IT

① Flush mount plates must be ordered separately.



Equalizer 2 with mounting feet

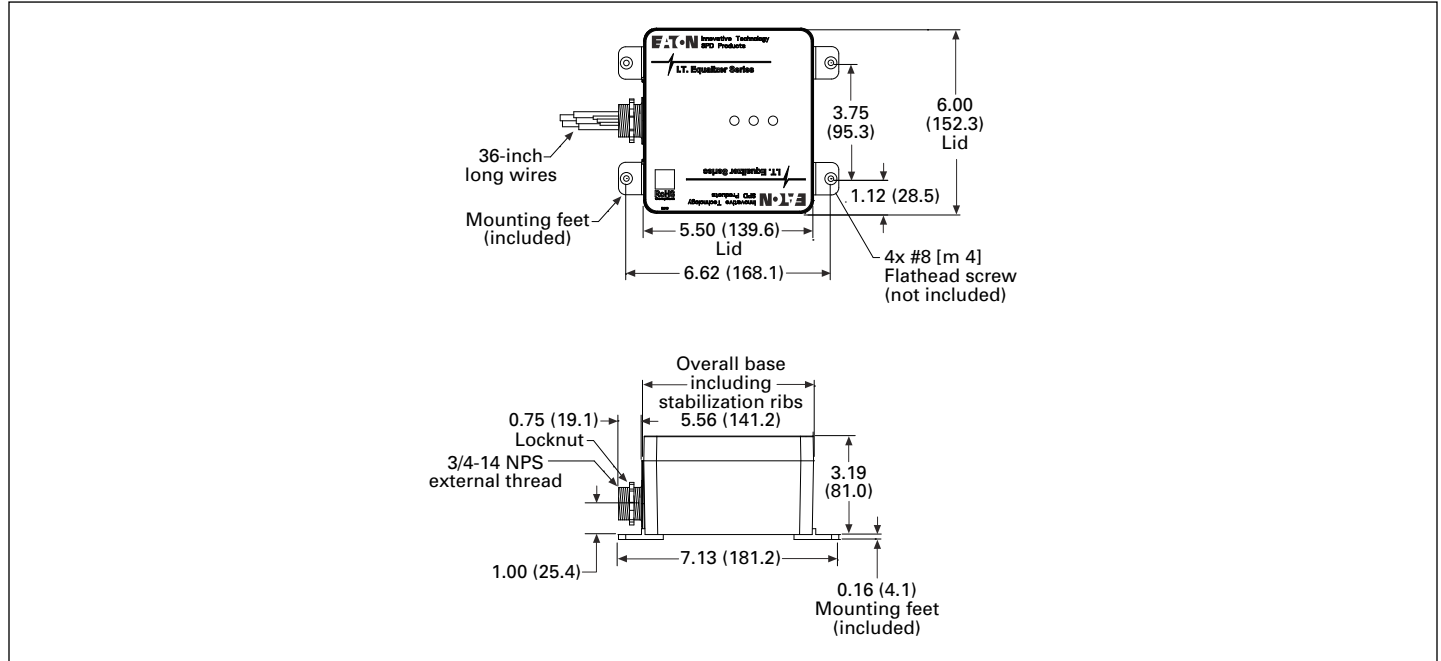


Figure 1. P1 enclosure, NEMA 4X with mounting feet dimensions, weight = 2.5 lb

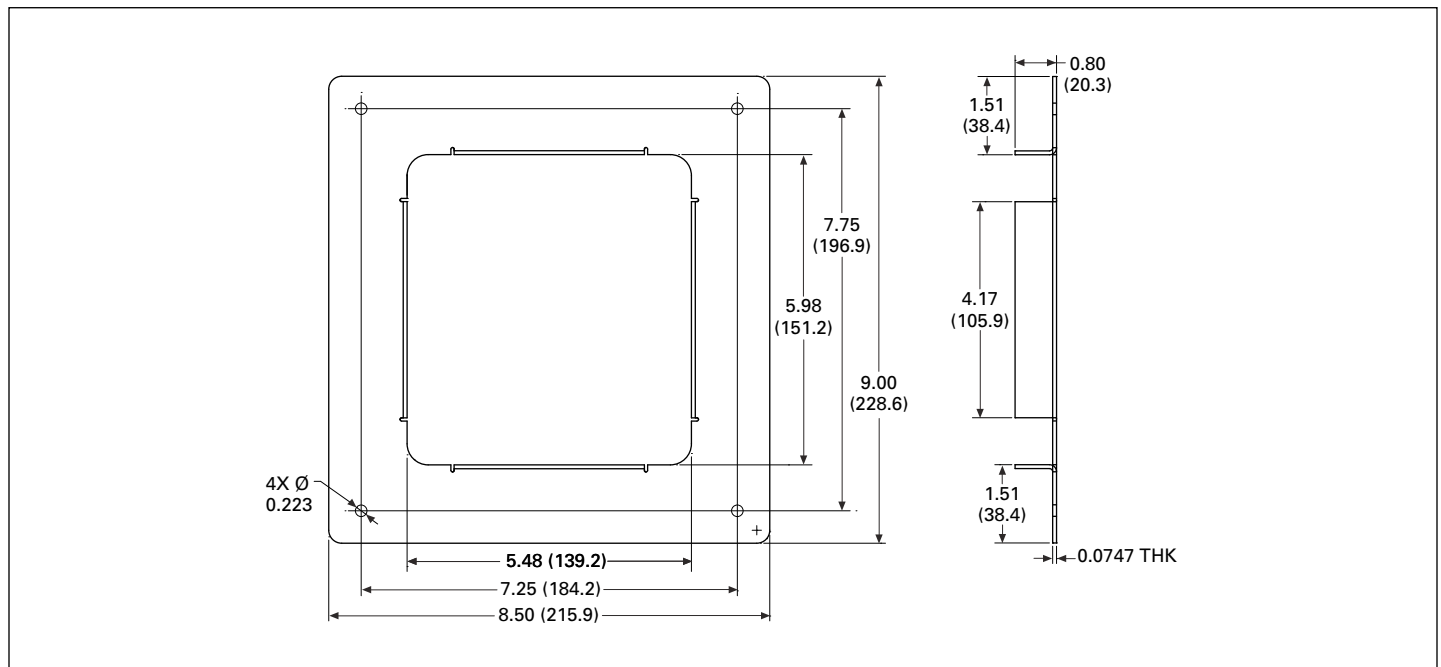


Figure 2. Optional flush mount plate for P1 enclosure (catalog number FLUSHMNTPLATE13-IT)

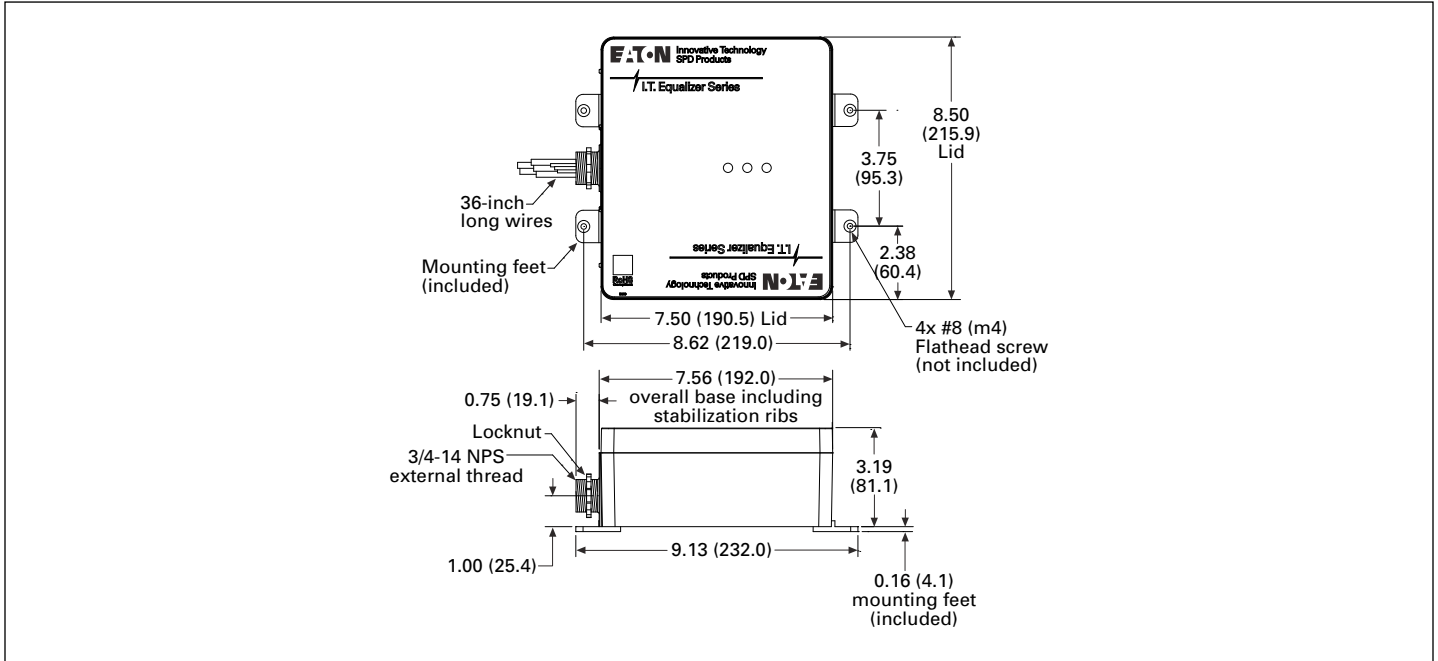


Figure 3. P2 enclosure, NEMA 4X with mounting feet dimensions, weight = 4 lb

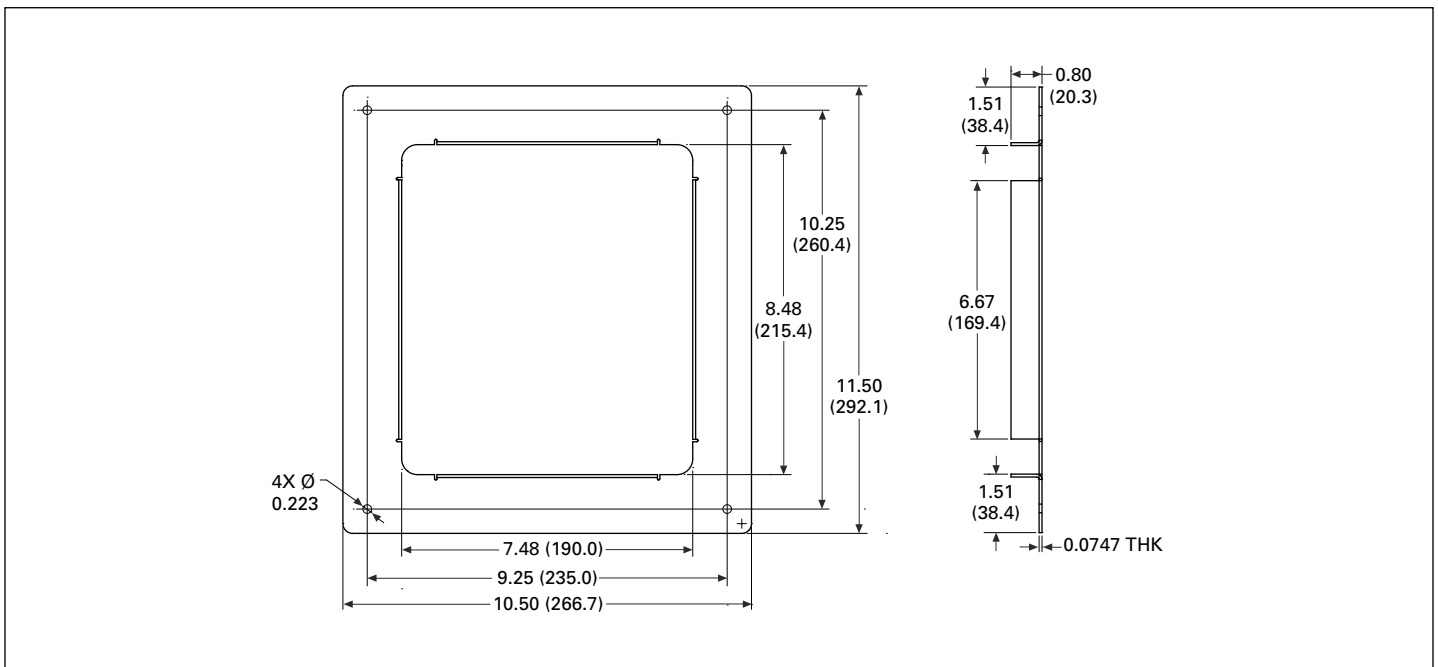


Figure 4. Optional flush mount plate for P2 enclosure (catalog number FLUSHMNTPLATE14-IT)

VPR performance data

Table 3. ANSI/UL 1449 4th edition voltage protection ratings (VPR)

Voltage code	Protection mode			
	L-N	L-G	N-G	L-L
120-200 kA unit VPR				
120N	700	700	700	N/A
240N	1000	1200	1000	N/A
277N	1200	1200	1200	N/A
480N	1800	1800	1800	N/A
240S	700	700	700	1200
208Y	700	700	700	1200
415Y	1200	1200	1200	2000
480Y	1200	1200	1200	2000
600Y	1500	1500	1500	2500
240D	N/A	1000	N/A	1000
480D	N/A	1800	N/A	2000
600D	N/A	2500	N/A	2500
240H ①	700	700	700	1200
80-100 kA unit VPR				
120N	600	600	600	N/A
240N	1200	1200	1200	N/A
277N	1200	1200	1200	N/A
480N	1800	1800	1800	N/A
240S	600	600	600	1000
208Y	600	600	600	1000
415Y	1200	1200	1200	2000
480Y	1200	1200	1200	2000
600Y	1500	1500	1500	2500
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500
600D	N/A	2500	N/A	2500
240H ①	600	600	600	1000
50 kA unit VPR				
120N	700	1200	700	N/A
240N	1200	2000	1500	N/A
277N	1200	2000	1500	N/A
480N	1800	1800	1800	N/A
240S	700	1200	700	1200
208Y	700	1200	700	1200
415Y	1200	2000	1500	2000
480Y	1200	2000	1500	2000
600Y	1500	1500	1500	2500
240D	N/A	1000	N/A	1000
480D	N/A	2000	N/A	2500
600D	N/A	2500	N/A	2500
240H ②	700	1200	700	1200

① Additional 240H VPRs: 2000 H-L, 1200 H-N, 1200 H-G

② Additional 240H VPRs: 2000 H-L, 1200 H-N, 2000 H-G



Equalizer 2 device mounted to a panelboard

Specifications

Table 4. Equalizer 2 Series specifications

Description	Specification
Peak surge current capacity ratings available	50, 80, 100, 120,150, 160, 200 kA per phase
Agency certification/listing	UL 1449 4th Edition, UL 1283 6th Edition, CSA C22.2 No. 269.1-14 for Type 1 SPD, CSA C22.2 No. 269.2-13 for Type 2 SPD, CSA C22.2 No. 8-13 for EMI filter
Surge protective device type	UL 1449 4th Edition and CSA Type 1 and Type 2 (dependent on feature options)
Durability repetitive strike test	12,000 strikes to ANSI/IEEE C62.41 (20 kV, 10 kA) Category C combination waveform
Single-phase voltages available (2W+G)	120, 240, 277, 480
Split-phase voltages available (3W+G)	120/240
Three-phase wye system voltages available (4W+G)	120/280, 240/415, 277/480, 347/600
Three-phase delta system voltages available (3W+G)	240, 480, 600
Three-phase high leg delta system voltage available (4W+G)	240
Input power frequency	50/60 Hz
Short-circuit current rating (SCCR)	200 kA
Nominal discharge current rating (I_n)	20 kA
Protection modes	Single-phase L–N, N–G, L–G Split-phase L–N, N–G, L–G, L–L Wye L–N, N–G, L–G, L–L Delta L–G, L–L
Maximum continuous operating voltage (MCOV):	
120N	150 L–N, 150 L–G, 150 N–G
240N, 277N	320 L–N, 320 L–G, 320 N–G
480N	550 L–N, 550 L–G, 550 N–G
240S, 208Y	150 L–N, 150 L–G, 150 N–G, 300 L–L
240H	150 L–N, 150 L–G, 150 N–G, 300 L–L, 470 H–L, 320 H–N, 320 H–G
415Y, 480Y	320 L–N, 320 L–G, 320 N–G, 640 L–L
600Y	420 L–N, 420 L–G, 420 N–G, 840 L–L
240D	320 L–G, 300 L–L
480D	550 L–G, 640 L–L
600D	840 L–G, 840 L–L
Active Tracking Network (ATN)	Up to 40 dB from 10 kHz to 100 MHz
Form C relay contact ratings	2 A at 30 Vdc or 250 Vac
Form C relay contact logic	Power ON, normal state—NO contact = open, NC contact = closed Power OFF or fault state—NO contact = closed, NC contact = open
Operating temperature	–40 °F to +140 °F (–40 °C to +60 °C)
Storage temperature	–40 °F to +140 °F (–40 °C to +60 °C)
Operating humidity	5% through 95%, noncondensing
Operating altitude	Up to 2000 m (6561 ft)
Ports	1
Enclosure rating	NEMA 4X enclosure ①
Enclosure dimensions and weights	Refer to Figure 1 and Figure 3 for enclosure dimensions and weights
RoHS compliant	Yes
Warranty	10 years standard, 15 years with product registration at Eaton.com/itvss

① Mounting feet required to achieve NEMA 4X rating.

