



## Eaton® Innovative Technology® Protector™

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## Product Application

The Protector Surge Protective Device (SPD) protects electronic equipment from damaging transients. The Protector is suitable for high, medium and low exposure levels, and sensitive, mission-critical load applications including:

- Switchboards/main panels.
- Distribution panels.
- Branch panels.
- Critical load centers.
- Dedicated load protection.
- VFDs (Variable Frequency Drives).
- Motor protection.

## General Description

Since 1980, Eaton's Innovative Technology has been designing and producing SPDs that provide field-proven power quality solutions worldwide. The Protector is a rugged device that is easy to install adjacent or even internal to electrical equipment. Based on extensive proven field performance, Innovative Technology was the first to offer a 20-year full replacement warranty for the Protector. Electrical engineers around the world recognize Innovative Technology as a leader in the SPD industry. A leading research company in a survey of over 10,000 users rated Innovative Technology No. 1 in both product quality and service. Protector products are ULT 1449 Second Edition listed and UL 1283 complementary listed. All Eaton's Innovative Technology products are manufactured in an ISO®9001:2000 and ISO 14001 certified facility.



*Protector Models*



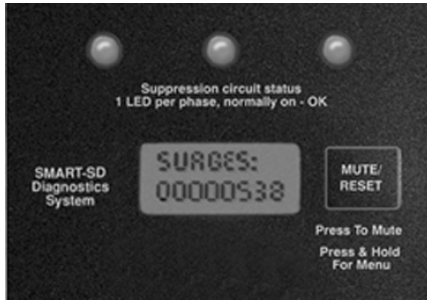
*Reliable Circuit Design*

## Features, Functions and Benefits

- Advanced surge path technology for high fault current capacity, low impedance, high frequency design.
- Encapsulation technology provides a high dielectric and ultimate protection from adverse environmental conditions.
- Rugged NEMA® Type 4 (IP66) powder coated steel enclosure.
- Large diameter MOVs (Metal Oxide Varistors) provide long life under high stress transient environments.
- Dry Form C contacts for remote status monitoring.
- LED monitoring on each phase.
- 20-year free replacement warranty.
- Wide range of voltage applications from 120 to 4160 Vac.

## Optional Features

- NEMA Type 4X stainless steel enclosure provides unparalleled corrosion protection and environmental strength for the most adverse installation conditions.
- Enhanced filtering, Active Tracking Network® (ATN) provides the best in transient protection against the continuous barrage of everyday transients; this filter is also UL 1283 listed as an EMI/RFI filter.
- Available integral disconnect switch and fusing for convenient installation and maintenance.
- Available integral fusing for installations requiring no external over-current protection.
- S.M.A.R.T. diagnostics provide state-of-the-art diagnostics in the form of a digital surge event counter and audible alarm in conjunction with the standard status indicator lamps.
- Available flush mount for recessed installations.



*S.M.A.R.T. Diagnostics Panel*

**S.M.A.R.T.™ Diagnostics**

- Comprehensive monitoring of critical system functions.
- Real-time audible and visual reporting of unit status, phase loss/protection loss and transient events (alarm with reset and mute).
- Records low, medium, and high surge events in approximate accordance with ANSI C62.41-1991, Type A, B, and C surge levels.
- Dual function surge counter provides non-volatile event history recording.

**Standards and Certifications**

- UL 1449 2nd Edition listed for surge suppression devices.
- UL 1283 complementary listed.
- cUL® listed.
- CE marked (PTX/E048, PTX/E065, PTX/E080, PTX160).
- All Eaton’s Innovative Technology Protector units have been tested as per NEMA LS-1 and ANSI/IEEE C62.45.

**Product Specifications**

**Table 1. Protector Series Specifications**

Description	Specification
kA per Phase	48, 65, 80, 160, 300, 400
kA per Mode	24 to 200
Protection Modes	Wye System: L-L, L-N, L-G & N-G / Delta System: L-L, L-G Split
Wye System Voltages ①	100/175, 110/190, <b>120/208</b> , 127/220, 220/380, 230/400, 240/415, <b>277/480</b> , 305/525, 347/600
Delta System Voltages ①	200, 208, <b>220</b> , 230, <b>240</b> , 380, 400, 415, 440, <b>480</b> , 525, 600
Split-Phase Voltages ①	100/200, 110/220, <b>120/240</b> , 127/254
Single-Phase Voltages ①	100, 110, <b>120</b> , 127, 200, 208, 220, 230, <b>240</b> , 277
Medium Voltage	1000, 1500, 2000, 2500, 3000, 3500, 4160

① U.S. voltages in bold.

**Table 2. Protector Let-Through Voltage Ratings**

Ratings ②	L-L	L-G	L-N	N-G	Delta System	
					L-L	L-G

**ANSI IEEE Cat A1**

120/240 V; 120/208 V Wye; 240 V Delta	90	100	60	60	70	590
277/480 V Wye; 480 V Delta	100	120	70	70	60	1100
347/600 V Wye; 600 V Delta	90	120	70	70	40	1100

**ANSI IEEE Cat C3**

120/240 V; 120/208 V Wye; 240 V Delta	1240	1000	830	890	1260	1420
277/480 V Wye; 480 V Delta	2060	1580	1370	1370	2120	2130
347/600 V Wye; 600 V Delta	2570	1880	1680	1700	2670	2640

**ANSI IEEE Cat B3/C1**

120/240 V; 120/208 V Wye; 240 V Delta	900	550	520	520	860	850
277/480 V Wye; 480 V Delta	1640	1050	980	940	1990	1840
347/600 V Wye; 600 V Delta	2110	1320	1250	1210	2090	2040

**UL 1449, 2nd Edition Suppressed Voltage Ratings**

120/240 V; 120/208 V Wye; 240 V Delta	700	400	400	400	800	800
277/480 V Wye; 480 V Delta	1500	800	800	800	1500	1500
347/600 V Wye; 600 V Delta	2000	1000	1000	1000	1800	1800

② Test environment: All tests performed with 6” lead length, positive polarity. Voltages are peak ±10%. Measurements are taken from the zero reference per NEMA LS-1.

**Note:** Let-through voltage figures shown are for selected models and vary per Protector model. See individual submittal specification sheets for specific let-through voltage measurements.

Standard Dimensions — Inches (mm)

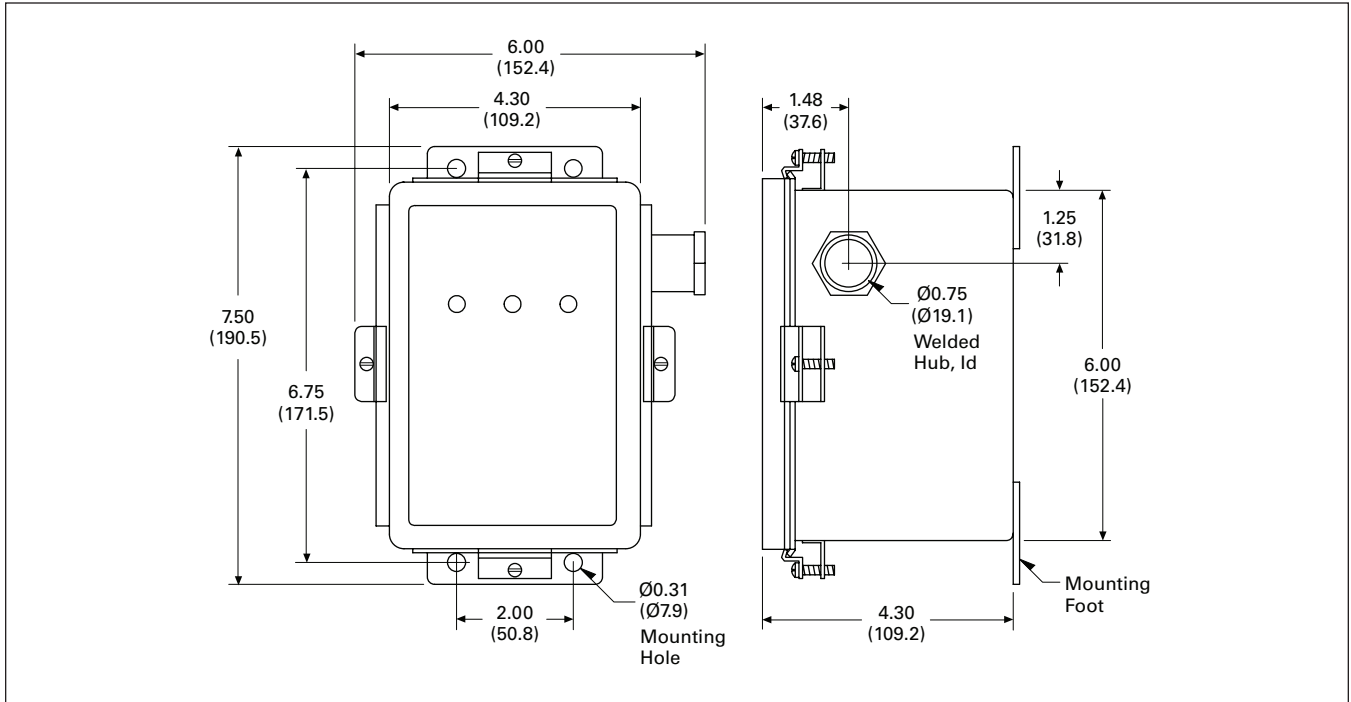


Figure 1. Protector Series for PTE048, 065, 080 Models 1P101, 1S101, 3Y101, 3D101 and PTX048, 065, 080 All Models

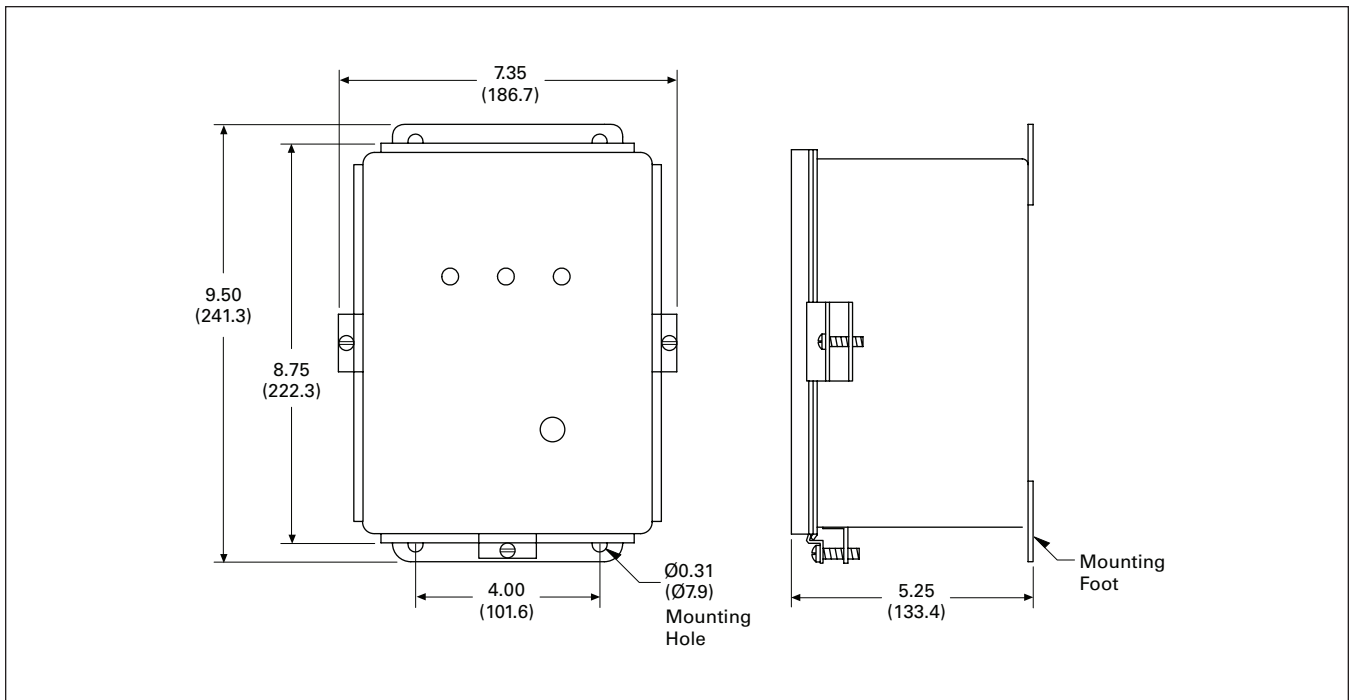
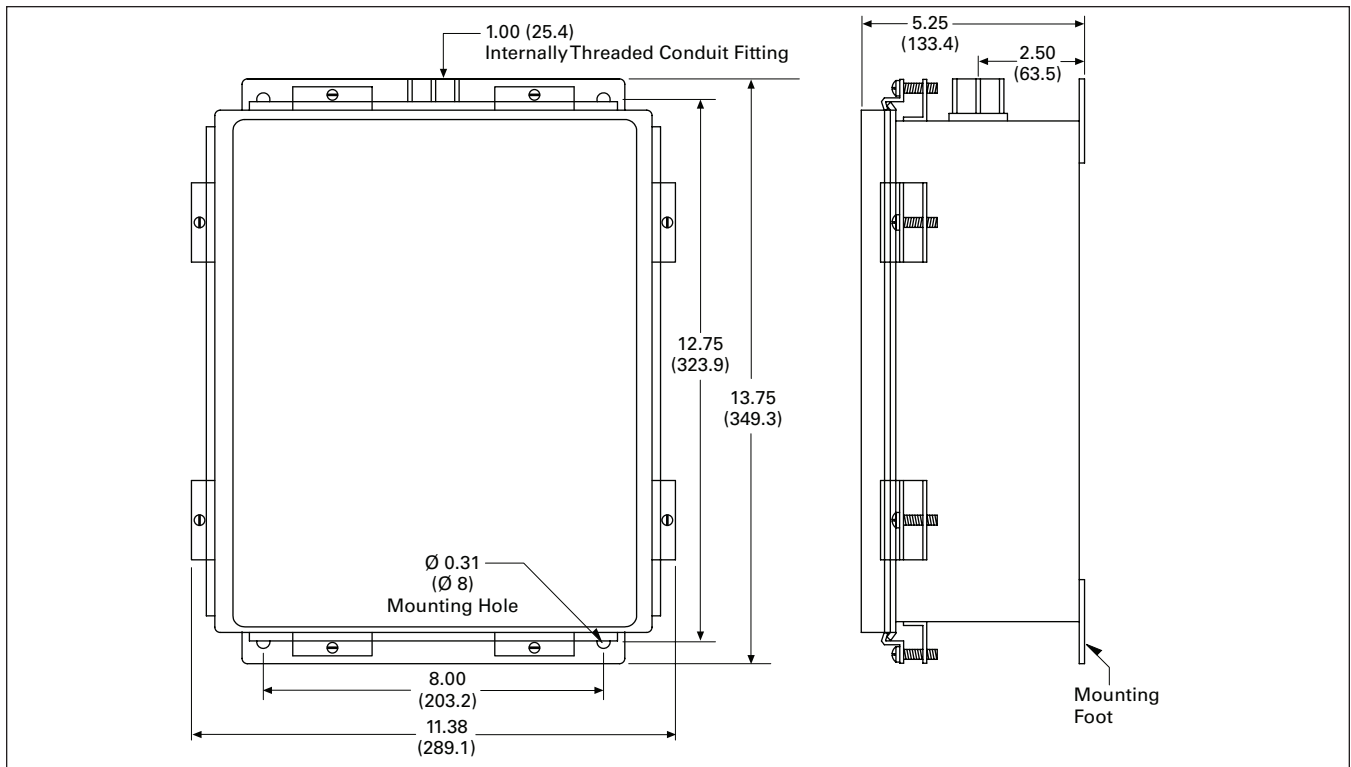
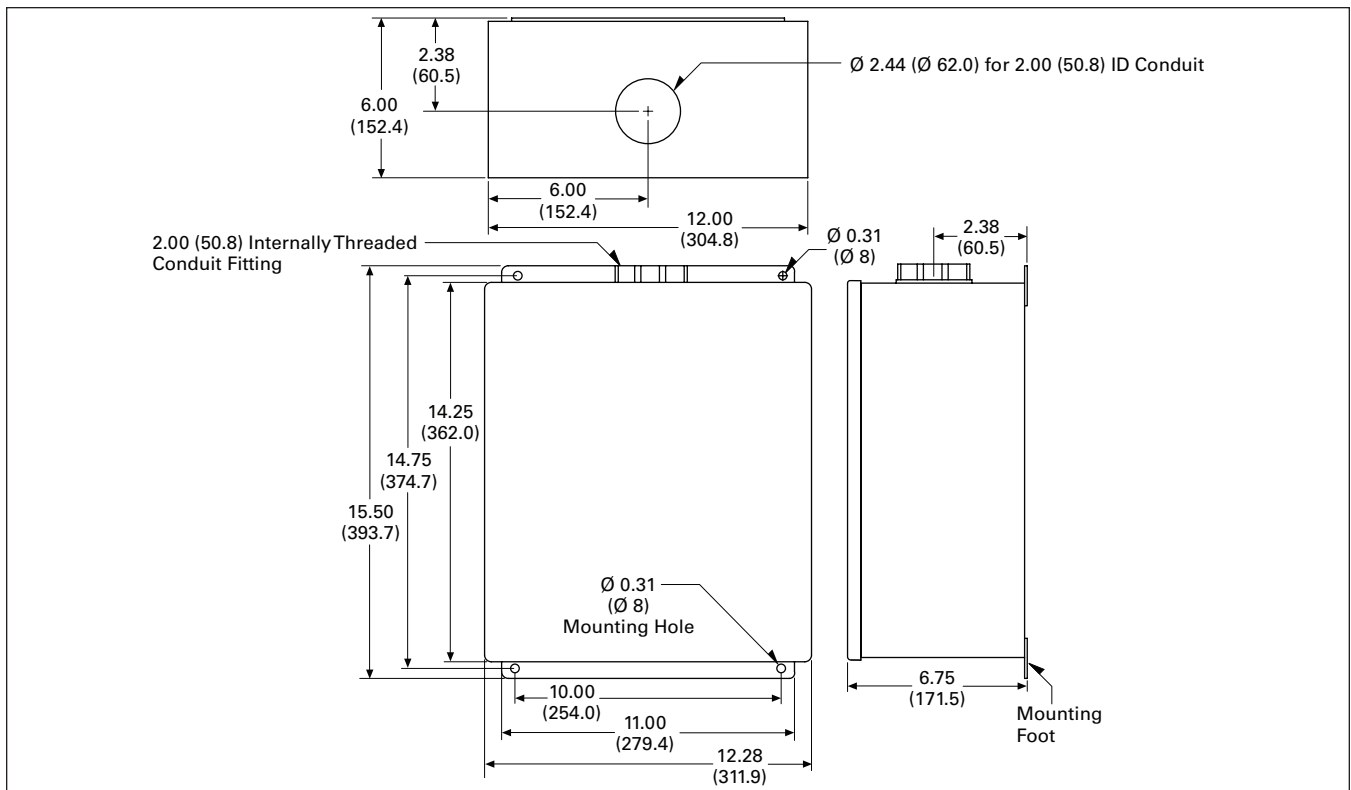


Figure 2. Protector Series for PTE048, 065, 080 Models 1P201, 3Y201, 3Y300, NN201, NN400, NN501 and PTE/PTX160 All Models



**Figure 3. Protector Series for PTX120 All Models**



**Figure 4. Protector Series for PTX240 All Models**

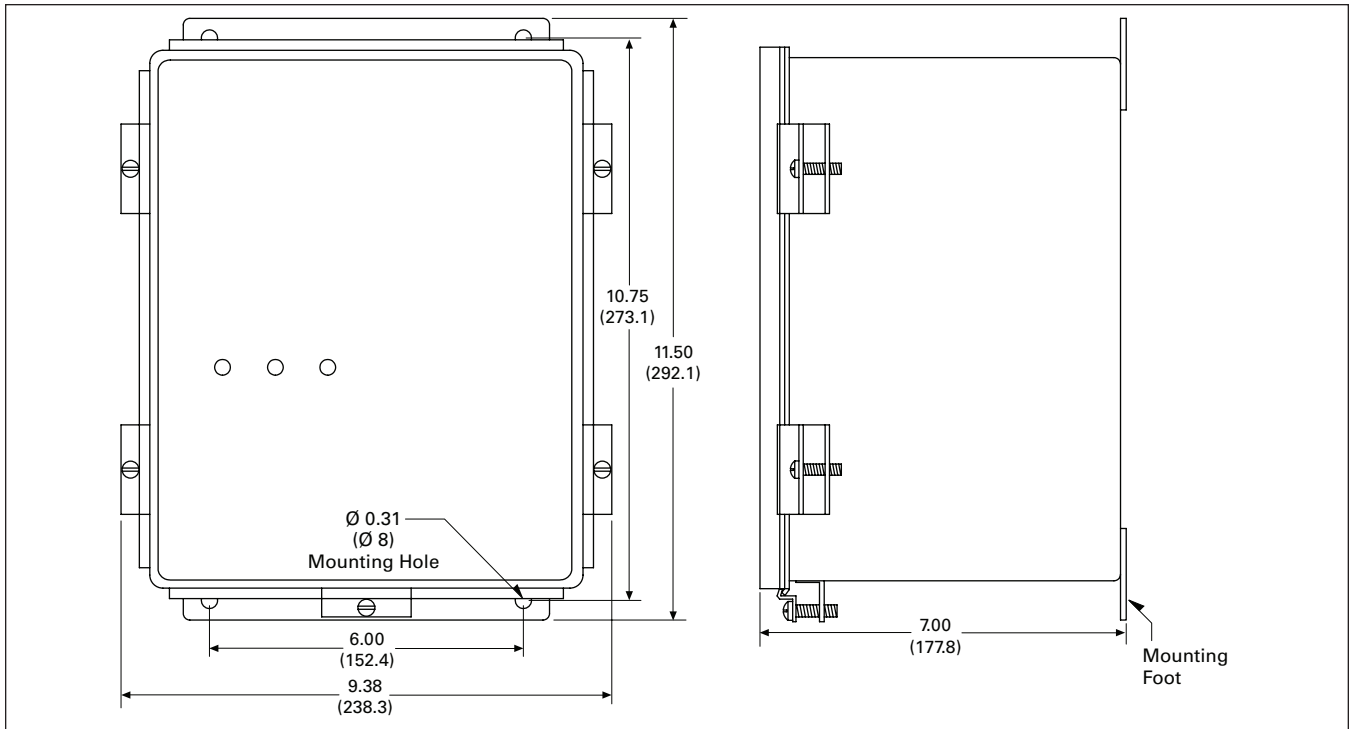


Figure 5. Protector Series for PTE/PTX300, 400 All Models

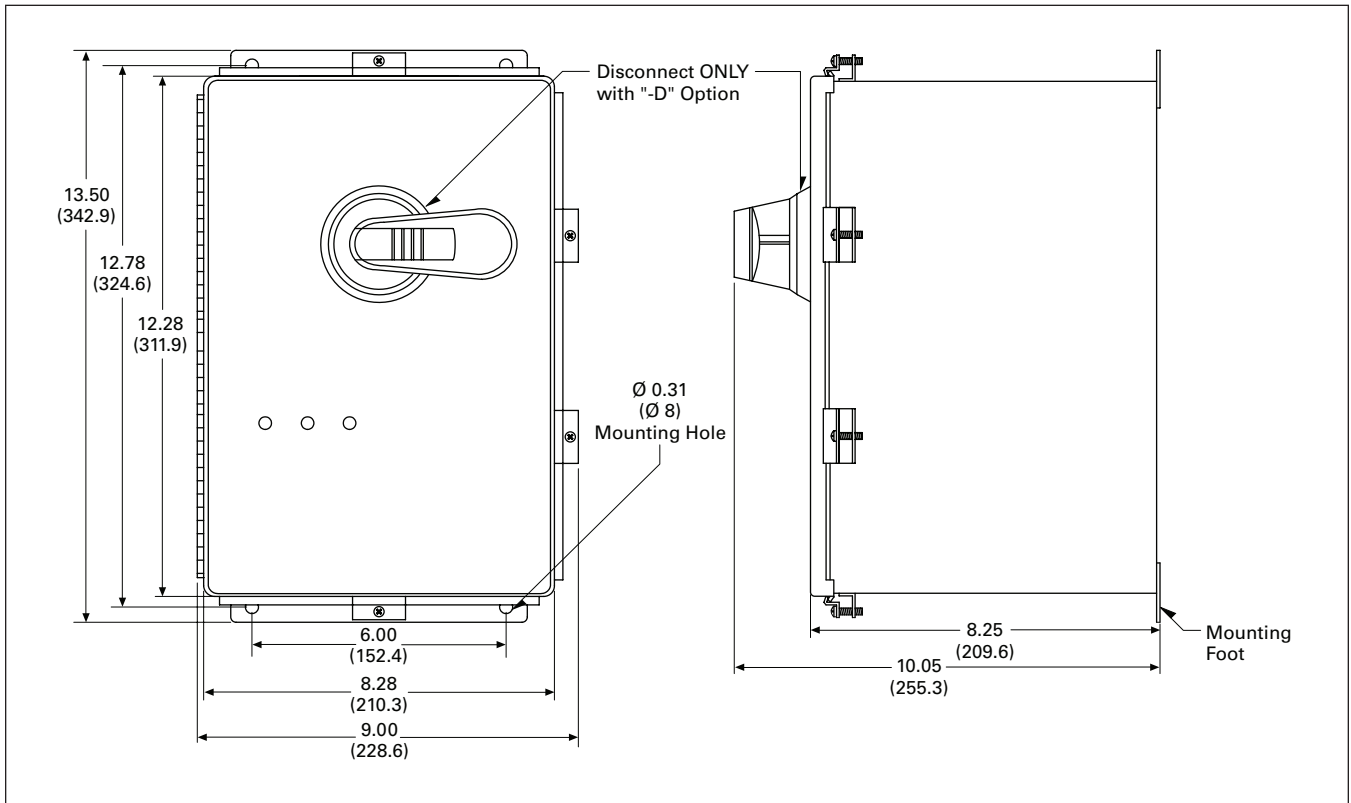
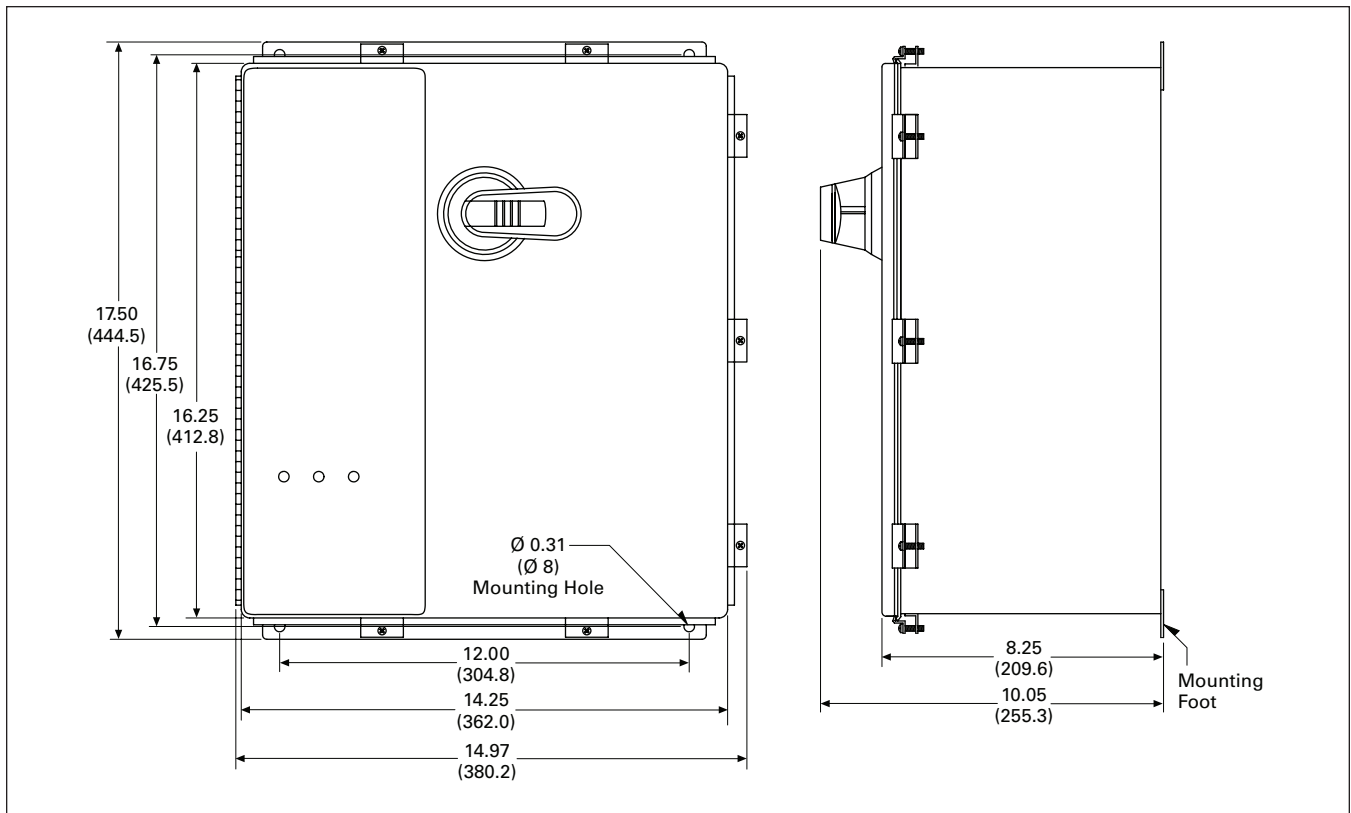


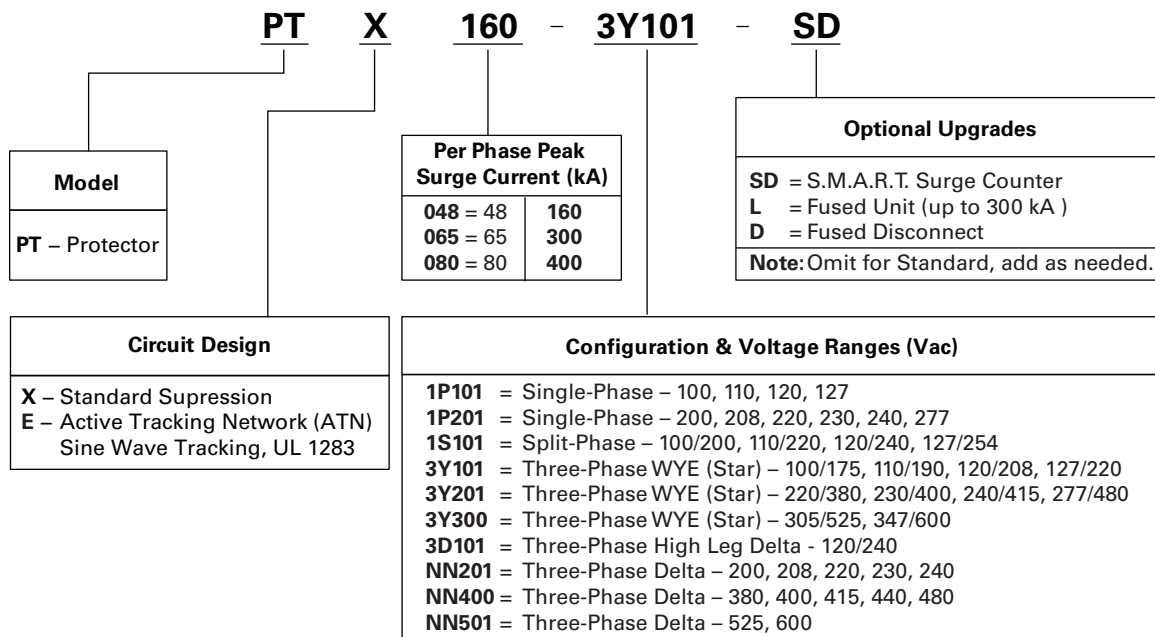
Figure 6. Protector Series for Fused (-L) & Disconnect (-D) Options 48, 65, 80, 160 or 300 kA Models



**Figure 7. Protector Series for Disconnect (-D) Option 400 kA Model**

### Catalog Numbering System

Table 3. Protector Ordering Guidelines



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Eaton Corporation  
 Innovative Technology TVSS Products  
 1000 Cherrington Parkway  
 Moon Township, PA 15108-4312  
 USA  
 Phone: 1-800-525-2000  
 Web: www.itvss.com