

Eaton Innovative Technology

I.T. Protector



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Powering Business Worldwide

Product application

Eaton's Innovative Technology® I.T. Protector™ surge protective device (SPD) protects electronic equipment from damaging transients. The I.T. 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 loadcenters
- Dedicated load protection
- Variable frequency drives (VFDs)
- Motor protection

General description

Since 1980, Eaton 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, Eaton was the first to offer a 20-year full replacement warranty for the Protector. Electrical engineers around the world recognize Eaton as a leader in the SPD industry. A leading research company in a survey of over 10,000 users rated Eaton No. 1 in both product quality and service. Protector products are listed to UL® 1449 5th Edition and have a complementary UL 1283 7th Edition listing. All of Eaton's Innovative Technology products are manufactured in an ISO® 9001:2000 and ISO 14001 certified facility.

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
- Industry-best nominal discharge current (I_n) of 20 kA
- Rugged NEMA® Type 4 (IP66) powder-coated steel enclosure
- Large diameter metal oxide varistors provide long life under high stress transient environments
- Dry Form C contacts for remote status monitoring
- LED monitoring on each phase
- Wide range of voltage applications from 120 to 600 Vac
- 20-year free replacement warranty with registration

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 7th Edition listed as an EMI/RFI filter
- Available integral circuit breaker and disconnect switch for convenient installation and maintenance
- Available integral circuit breaker for installations requiring no external overcurrent 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 flushmount 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 5th Edition and UL 1283 7th Edition listed surge protective devices (SPD)
- 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
- Can be used for UL 96A compliance
- Can be used for NFPA® 780 compliance
- Can be used for RoHS compliance

Product specification

Table 1. Protector series specifications

Description	Specification
kA per phase	48, 50, 65, 80, 100, 120, 160, 200, 240, 300, 400
kA per mode	24 to 200
Nominal discharge current (I_n)	20 kA (Models 120, 160, 240, 300 and 400 kA per phase) 10 kA (Models 48, 65 and 80 kA per phase)
Protection modes	Wye system: L-L, L-N, L-G and N-G / delta system: L-L, L-G Split-phase system: L-L, L-N, L-G and N-G
Wye system voltages	100/175, 110/190, 120/208, 127/220, 220/380, 230/400, 240/415, 277/480, 305/525, 347/600
Delta system voltages	200, 208, 220, 230, 240, 380, 400, 415, 440, 480, 525, 600
Split-phase voltages	100/200, 110/220, 120/240, 127/254
Single-phase voltages	100, 110, 120, 127, 200, 208, 220, 230, 240, 277

Note: U.S. voltages in bold.

Table 2. Protector let-through voltage ratings

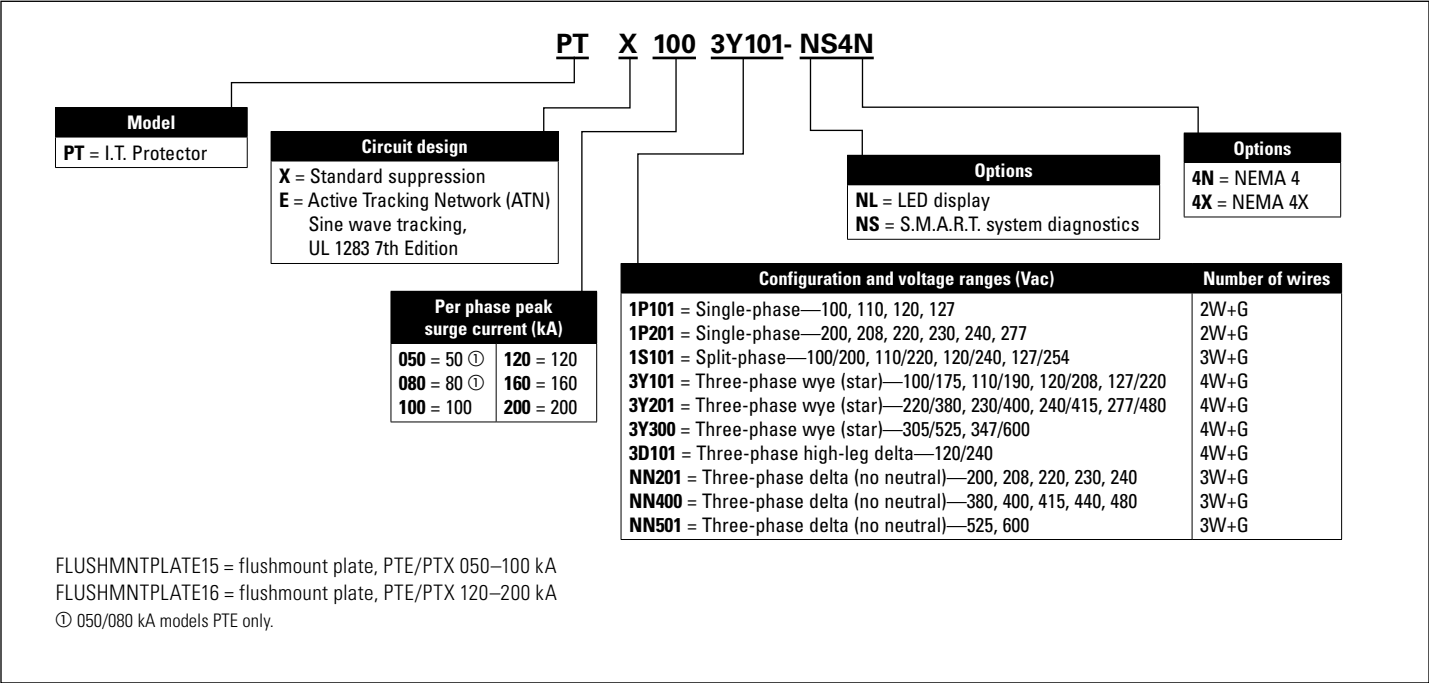
	Delta system					
Ratings	L-L	L-G	L-N	N-G	L-L	L-G
ANSI IEEE Cat A1						
120/240 V; 120/208 V wye; 240 V delta	90	100	60	60	70	590
277/480 V wye; 480 V delta	100	120	70	70	60	1100
347/600 V wye; 600 V delta	90	120	70	70	40	1100
ANSI IEEE Cat C3						
120/240 V; 120/208 V wye; 240 V delta	1240	1000	830	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, 5th Edition voltage protection rating						
120/240 V, 120/208 V wye; 240 V delta	1000	600	600	600	1000	1000
277/480 V wye, 480 V delta	2000	1200	1200	1200	2000	1800
347/600 V wye, 600 V delta	2500	1500	1500	1500	2500	2500

Note: All tests performed with 6-inch lead length, positive polarity. Voltages are peak $\pm 10\%$. All 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 I.T. Protector product selection

Table 3. Standard I.T. Protector catalog numbering system



Standard I.T. Protector standard dimensions— inches (mm)

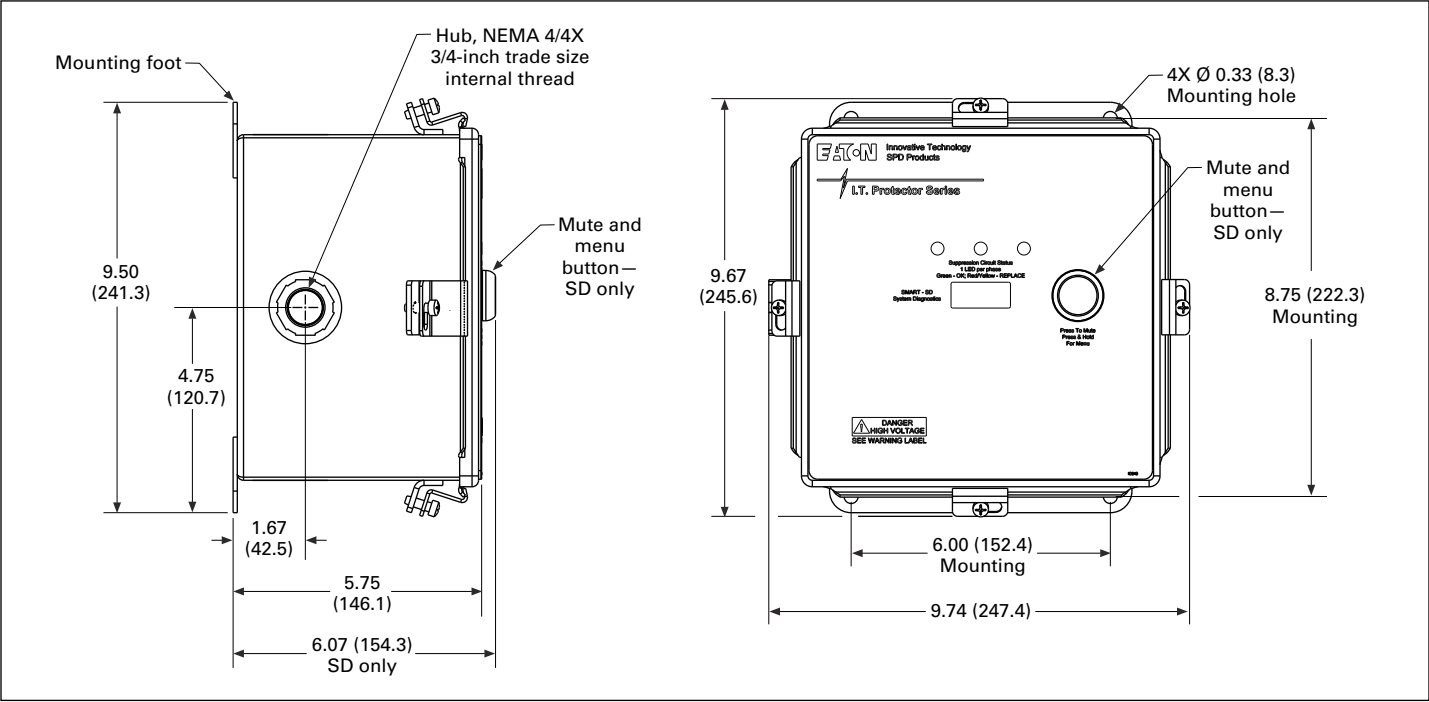


Figure 1. PTE050, 080, 100 (-NL) and (-NS) models and PTX100 (-NL) and (-NS) models

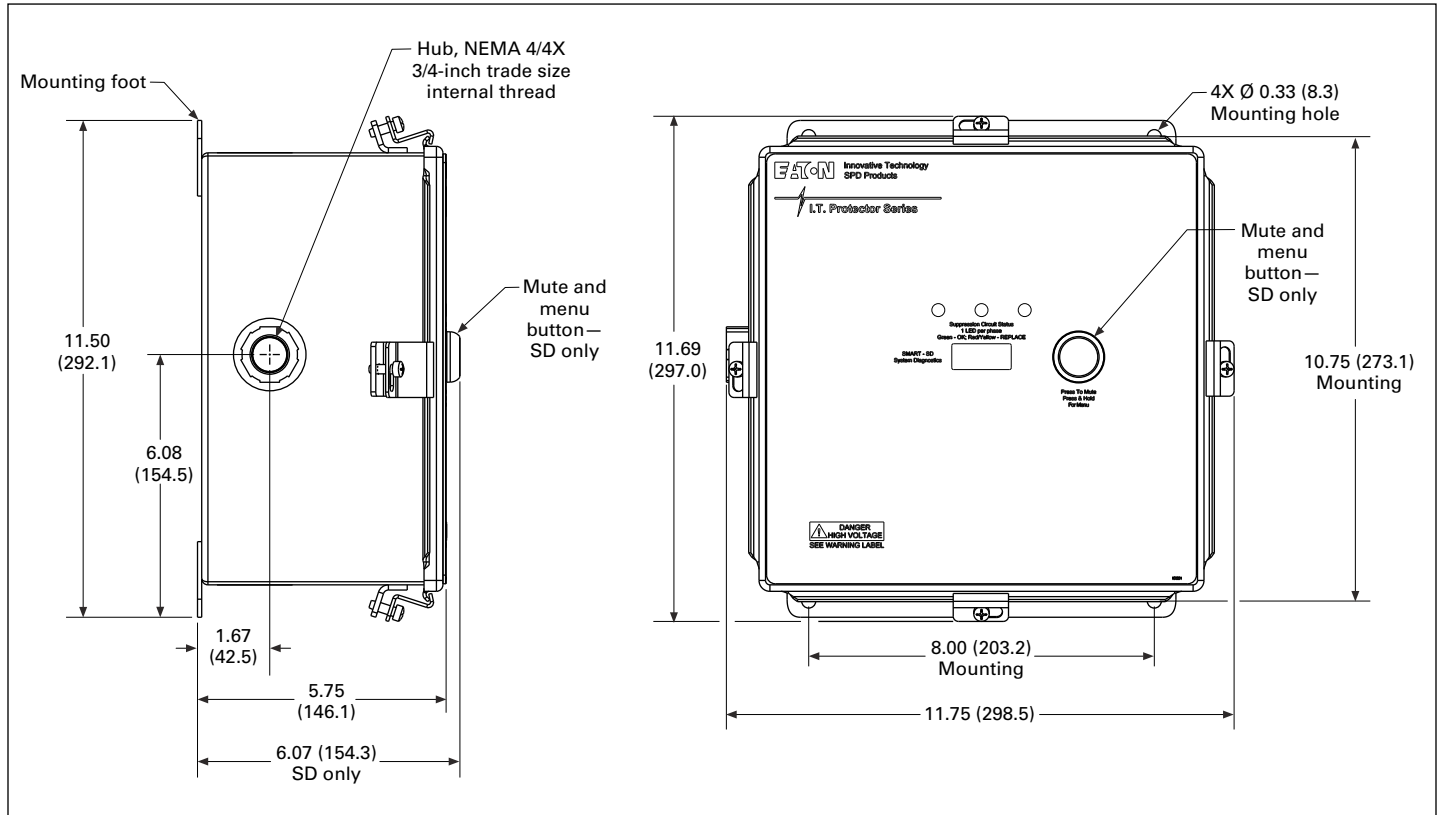


Figure 2. Protector series for PTE120, 160, 200 (-NL) and (-NS) models and PTX120, 160, 200 (-NL) and (-NS) models

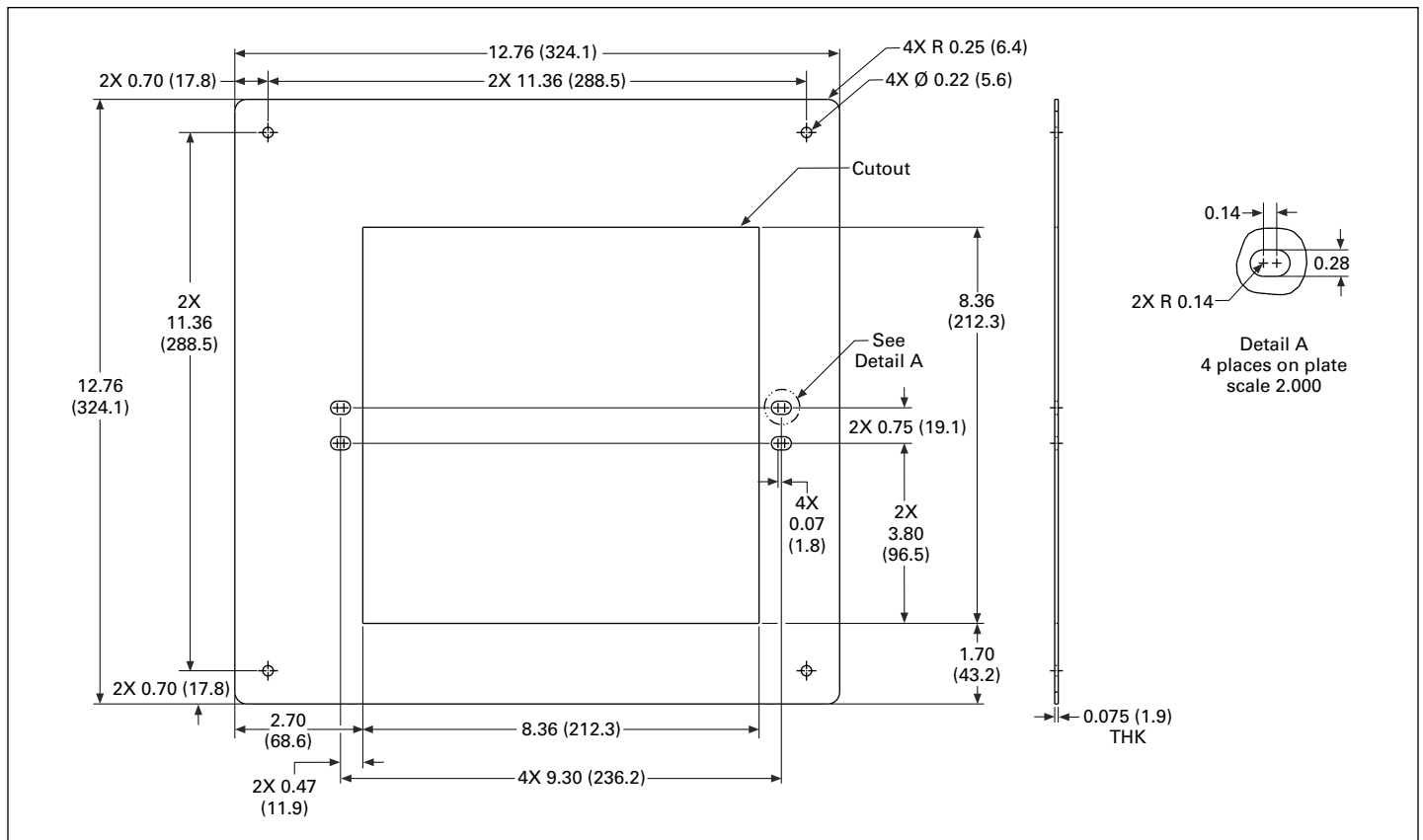


Figure 3. FLUSHMNTPLATE15 PTE units 050, 080, and 100 kA and PTX 100 kA

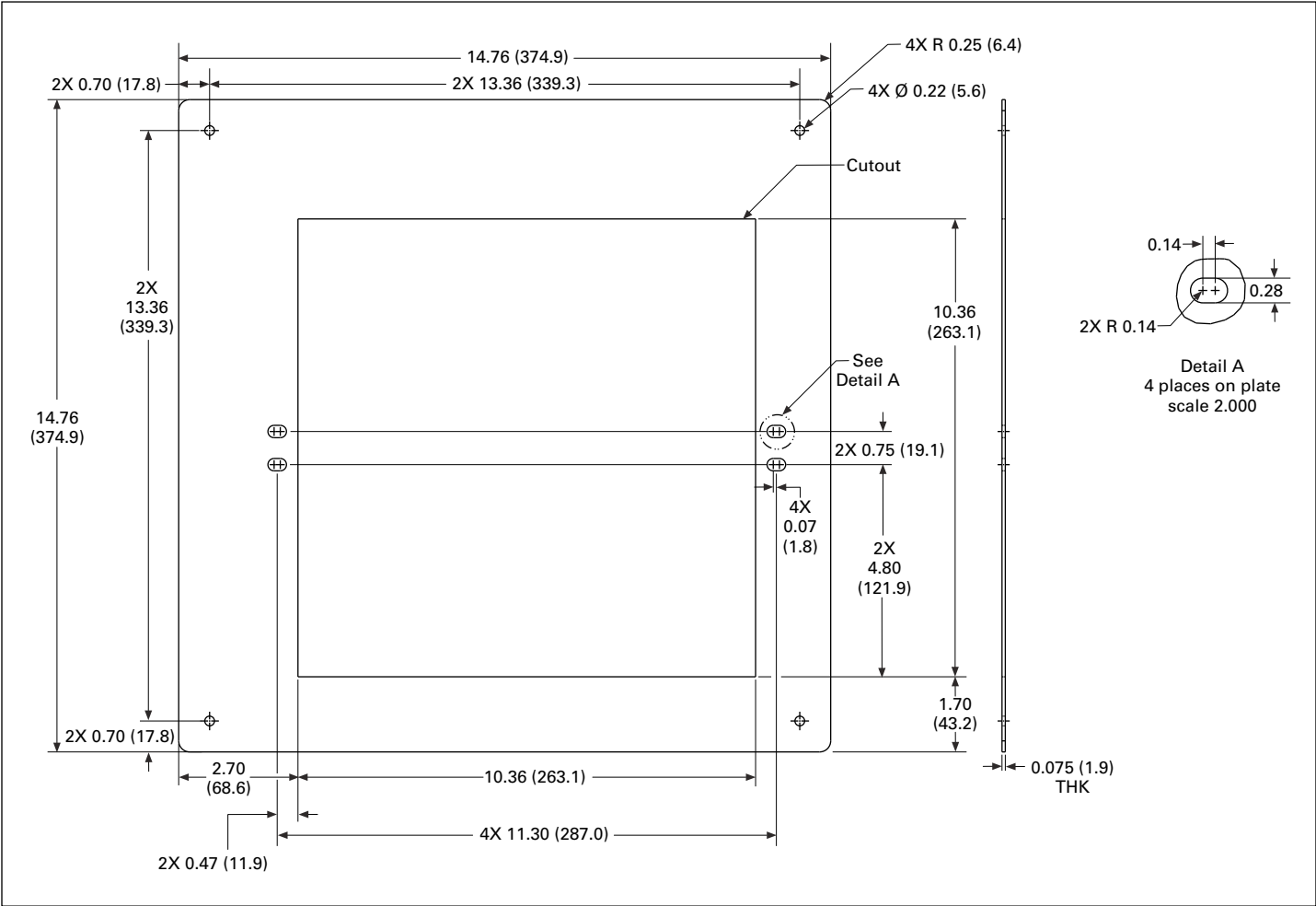


Figure 4. FLUSHMNTPLATE16 PTE/X units 120, 160, 200 kA

Legacy I.T. Protector product selection

Table 4. Legacy I.T. Protector catalog numbering system

Model		PT	X	160	3Y101	SD
PT = Protector						
Circuit design						
X = Standard suppression E = Active Tracking Network (ATN) sine wave tracking, UL 1283						
</						

Legacy I.T. Protector standard dimensions—inches (mm)

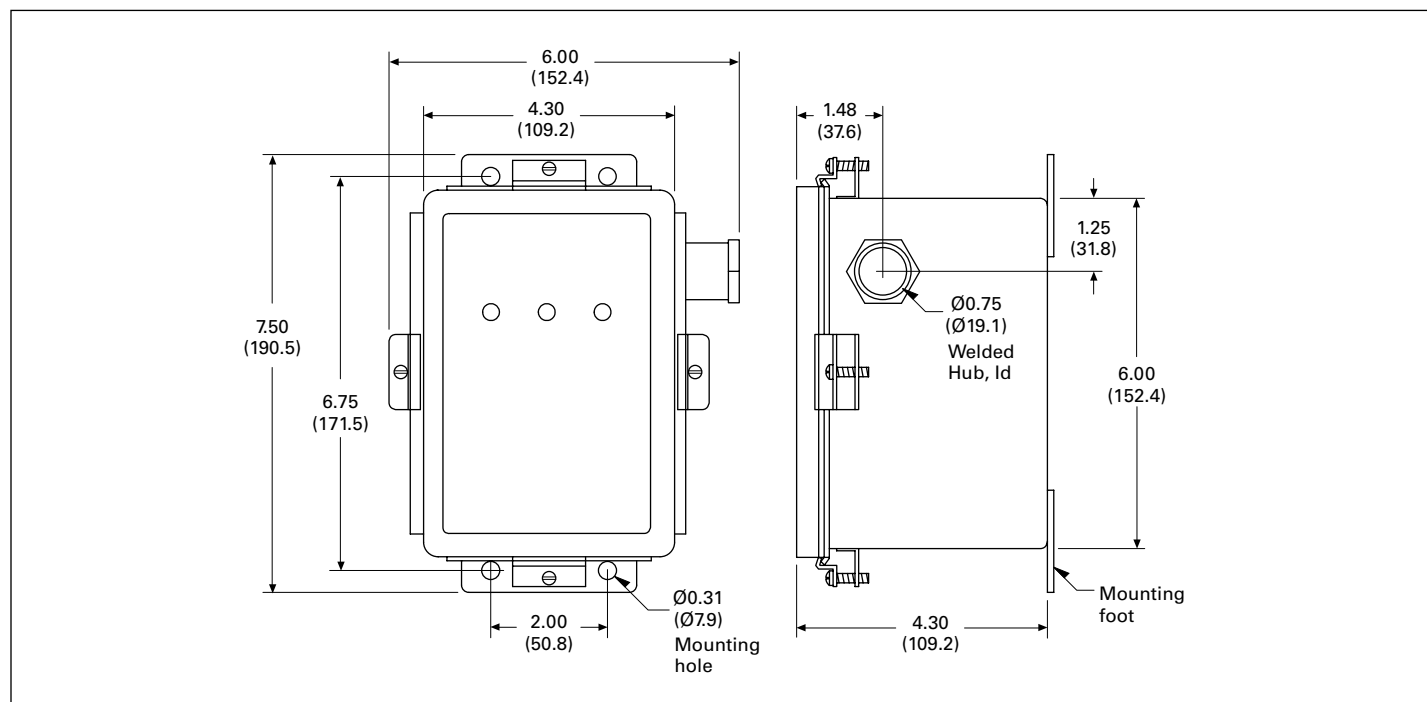
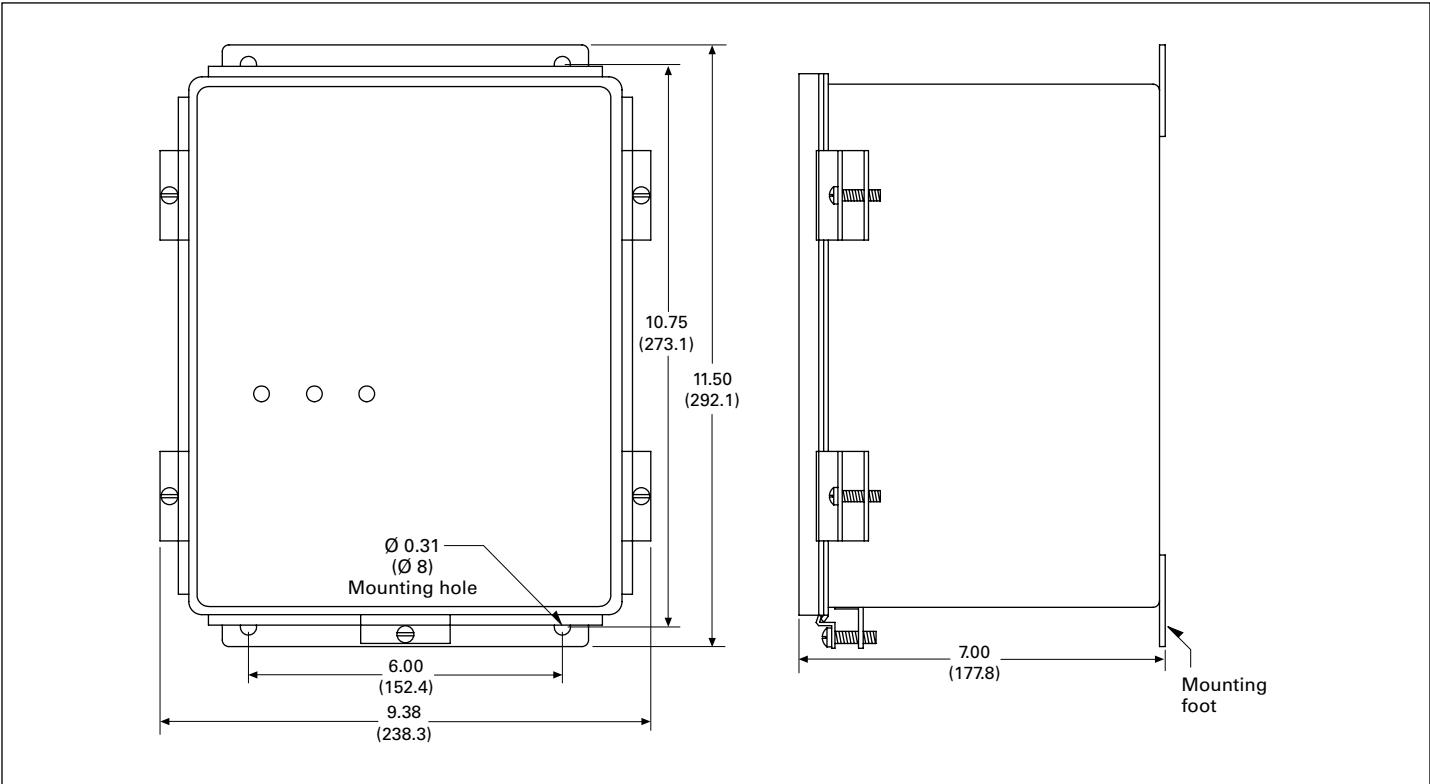
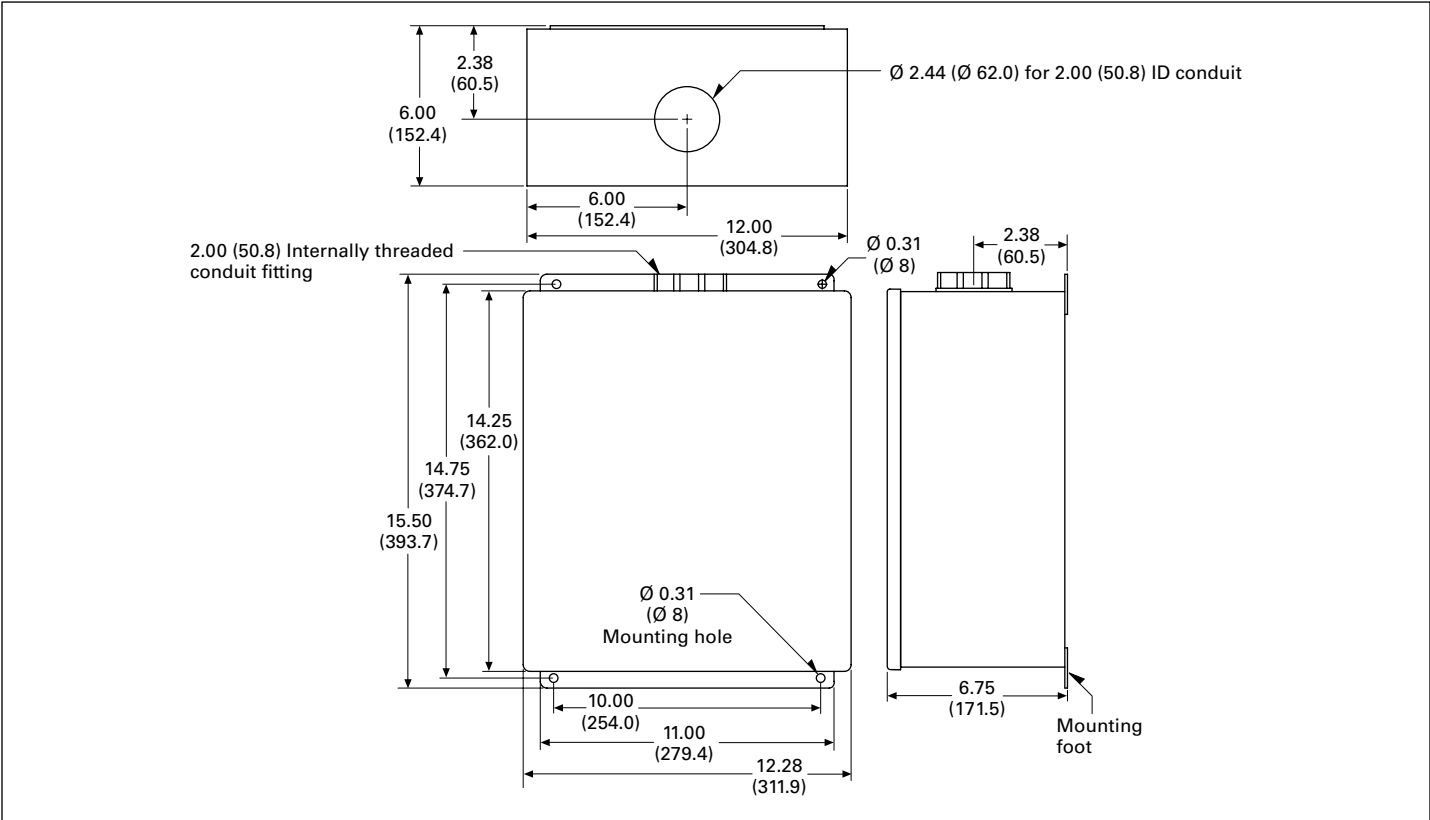


Figure 5. Protector series for PTX048, 065, 080 all models



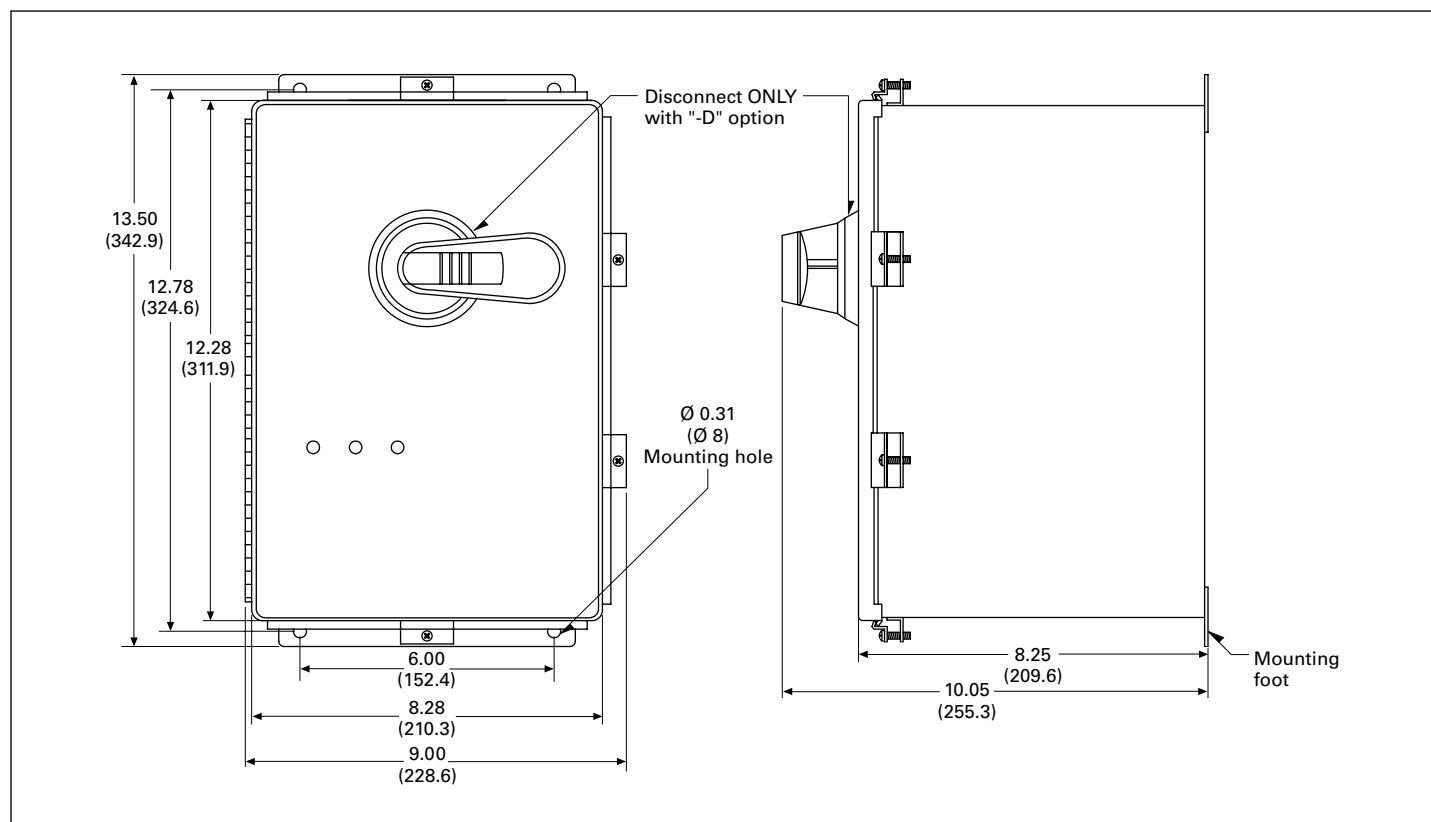


Figure 8. Protector series for integral circuit breaker (-C) and circuit breaker and external disconnects (-CD) 80, 120 ①, 160, 240 ① and 300 kA models

① Available only in low-voltage units.

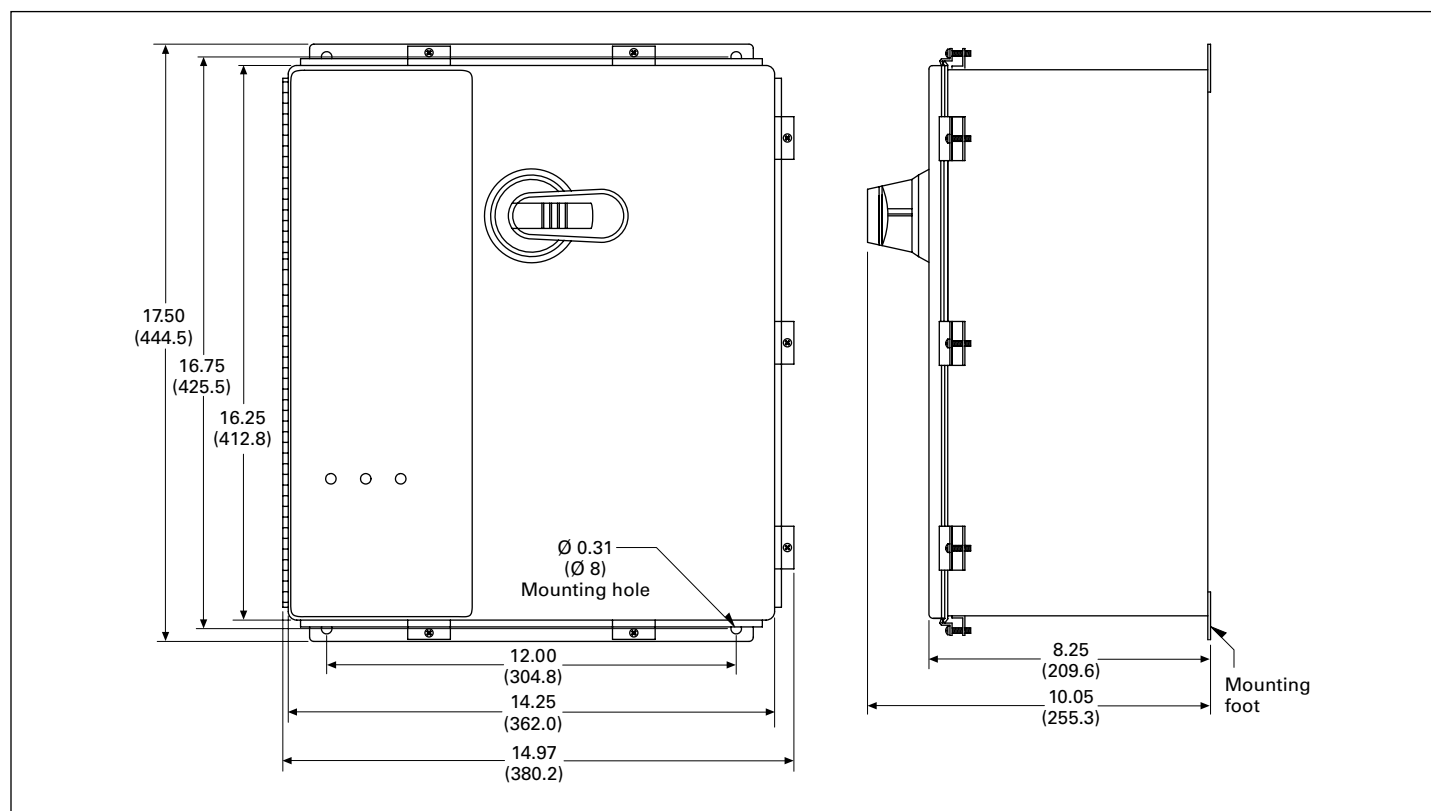


Figure 9. Protector series for integral circuit breaker (-C) and circuit breaker and external disconnect (-CD) 400 kA models

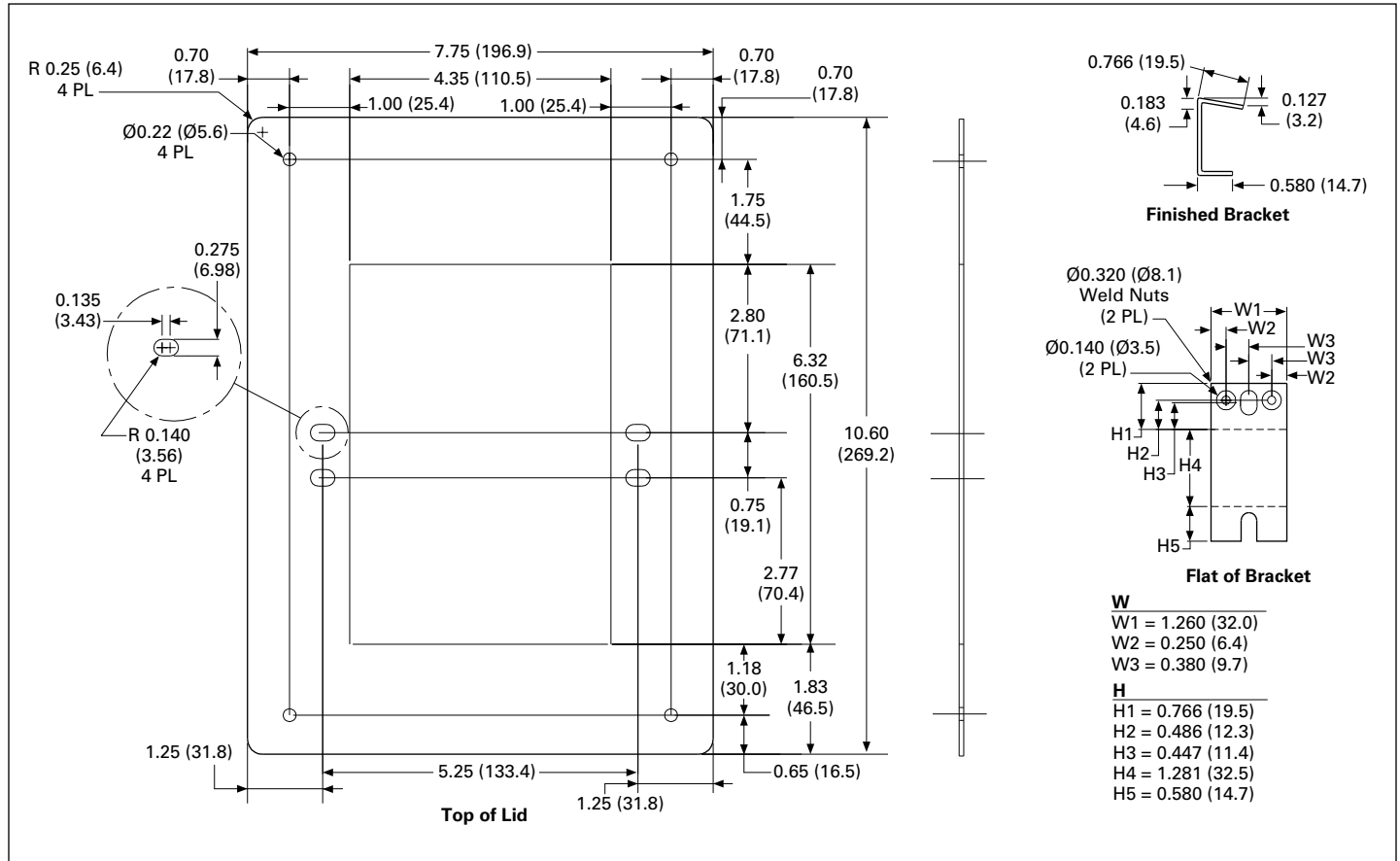


Figure 10. FLUSHMNTPLATE3A PTX units 48, 65, 80 kA

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Printed in USA
Publication No. TD01006002E / Z27488
April 2023



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