

# INDOOR VOLTAGE TRANSFORMER

Models **PTG5-1-110**  
**PTG5-2-110**

**ACCURACY CLASS:**  
0.3 WXYZ, 1.2ZZ at 100% rated voltage with 120V based ANSI burden.  
0.3 WXY, 1.2Z at 58% rated voltage with 69.3V based ANSI burden.

**FREQUENCY:**  
60 Hz.

**MAXIMUM SYSTEM VOLTAGE:**  
15.5kV, BIL 110kV full wave.

**THERMAL RATING:**  
1500 VA at 30°C. amb.  
1000 VA at 55°C. amb.

**WEIGHT:**  
Approximately 85 lbs. unfused.

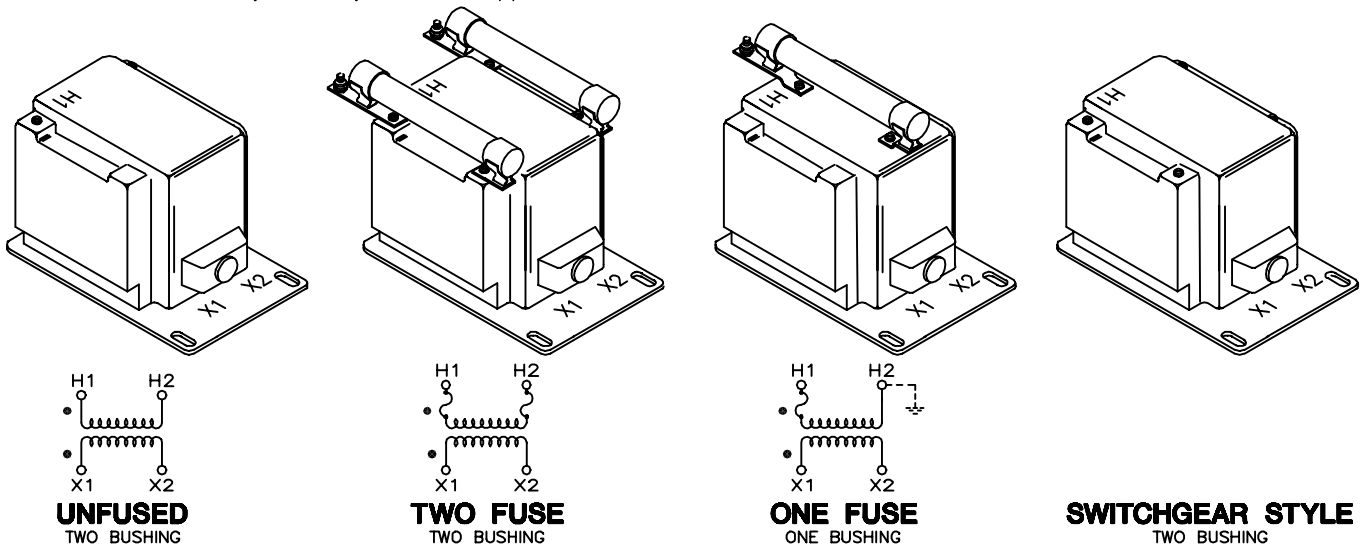
REGULATORY AGENCY APPROVALS



Manufactured to meet the requirements of ANSI/IEEE C57.13.  
Classified by U.L. in accordance with IEC 44-2

- Primary terminals that are unfused are 1/4–20 brass screws with one flatwasher and lockwasher, unless otherwise specified.
- Primary terminals that are fused are 1/4–20 brass screws with one flatwasher, lockwasher and two nuts.
- Secondary terminals are No.10–32 brass screws with one flatwasher and lockwasher.
- The transformers are tested for partial discharge to Canadian Standards CAN 3–C13–M83. This test can also be carried out to IEC requirements if requested.
- The core and coil assembly is vacuum encapsulated in polyurethane resin.
- Thermal burden rating is for 120 volt secondaries.
- Plated steel mounting base.
- Fuses have 1.63" Dia Caps and 11.50" clip centers.
- Switchgear style is similar to fused style. No fuse or fuse clip is provided, but inserts for fuse clips are supplied.
- A test card is provided with each unit.

**NOTE:** All primary voltages marked with an asterisk (\*) are approved for revenue metering in Canada by Industry Canada, Approval No. AE-0431 Rev. 01



| GROUP | TWO BUSHING (a) |       |                   | CATALOG NUMBERS |                   |                   |                   |
|-------|-----------------|-------|-------------------|-----------------|-------------------|-------------------|-------------------|
|       | PRIMARY VOLTAGE | RATIO | SECONDARY VOLTAGE | UNFUSED         | FUSES             | FUSE CLIPS ONLY   | SWITCHGEAR STYLE  |
|       | 1               | *7200 | 60:1              | 120             | PTG5-2-110-722    | PTG5-2-110-722FF  | PTG5-2-110-722CC  |
| 1     | *8400           | 70:1  | 120               | PTG5-2-110-842  | PTG5-2-110-842FF  | PTG5-2-110-842CC  | PTG5-2-110-842SS  |
| 2     | 11000           | 100:1 | 110–50Hz          | PTG5-2-110-113  | PTG5-2-110-113FF  | PTG5-2-110-113CC  | PTG5-2-110-113SS  |
| 2     | *12000          | 100:1 | 120               | PTG5-2-110-123  | PTG5-2-110-123FF  | PTG5-2-110-123CC  | PTG5-2-110-123SS  |
| 2     | 13200           | 110:1 | 120               | PTG5-2-110-1322 | PTG5-2-110-1322FF | PTG5-2-110-1322CC | PTG5-2-110-1322SS |
| 2     | *14400          | 120:1 | 120               | PTG5-2-110-1442 | PTG5-2-110-1442FF | PTG5-2-110-1442CC | PTG5-2-110-1442SS |

| GROUP | ONE BUSHING (b) |       |                   |       | R <sub>FR</sub><br>(c) | CATALOG NUMBERS  |                  |  |
|-------|-----------------|-------|-------------------|-------|------------------------|------------------|------------------|--|
|       | PRIMARY VOLTAGE | RATIO | SECONDARY VOLTAGE | FUSES |                        | FUSE CLIPS ONLY  | SWITCHGEAR STYLE |  |
| 4A    | *7200           | 60:1  | 120               | 65    | PTG5-1-110-722F        | PTG5-1-110-722C  | PTG5-1-110-722S  |  |
| 4A    | *8400           | 70:1  | 120               | 65    | PTG5-1-110-842F        | PTG5-1-110-842C  | PTG5-1-110-842S  |  |
| 4B    | 11000           | 100:1 | 110–50Hz          | 65    | PTG5-1-110-113F        | PTG5-1-110-113C  | PTG5-1-110-113S  |  |
| 4B    | *12000          | 100:1 | 120               | 65    | PTG5-1-110-123F        | PTG5-1-110-123C  | PTG5-1-110-123S  |  |
| 4B    | 13200           | 110:1 | 120               | 65    | PTG5-1-110-1322F       | PTG5-1-110-1322C | PTG5-1-110-1322S |  |
| 4B    | *14400          | 120:1 | 120               | 65    | PTG5-1-110-1442F       | PTG5-1-110-1442C | PTG5-1-110-1442S |  |

(a) Two fuse transformers should not be used for Y connections. It is preferred practice to connect one lead from each voltage transformer directly to the neutral terminal, using a fuse in the line side of the primary only. By using this connection a transformer can never be made "live" from the line side by reason of a blown fuse in the neutral side. For continuous operation, the transformer primary voltage should not exceed 110% of rated value.

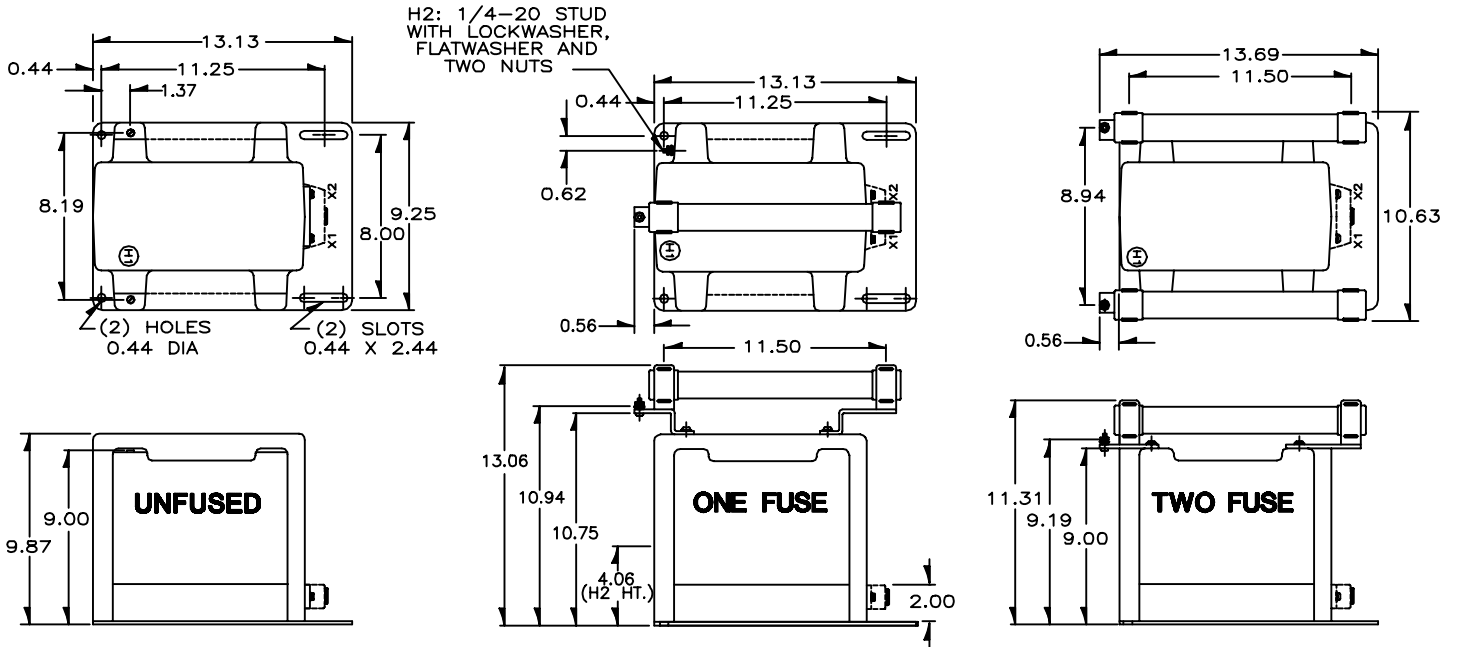
(b) Voltage transformers connected line-to-ground cannot be considered to be grounding transformers and must not be operated with the secondaries in closed delta because excessive currents may flow in the delta.

(c) See page 4, item 2 for ferroresonance considerations. Values in table are in ohms.

NOTE: It is recommended the system line-to-line voltage not exceed the transformer maximum system voltage level.

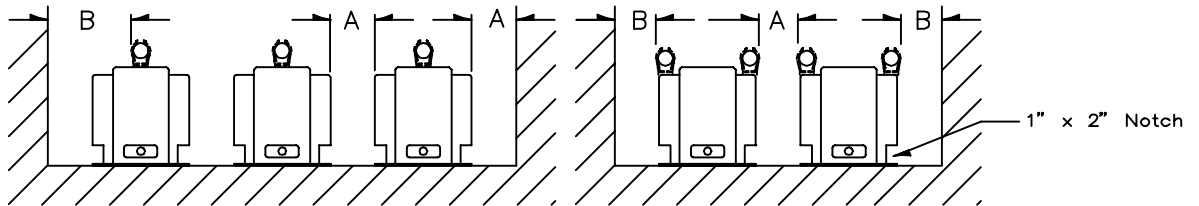
**PTG5-1-110**

**PTG5-2-110**



**RECOMMENDED SPACINGS**

A=UNIT TO UNIT OR TO GROUND=1.25" MIN.  
 B=HV TO GROUND IN AIR=6.5" MIN.



Recommended spacings are for guidance only. User needs to set appropriate values to assure performance for: high potential test; impulse test; high humidity; partial discharge; high altitude; and other considerations like configuration.

| FUSE FOR MODEL PTG5 TRANSFORMER | RATING VOLTS | INTERRUPTING AMPERES(SYM) | SUGGESTED RATING * CONTINUOUS AMPERES | CAP DIA. INCHES | LENGTH INCHES | CLIP CENTERS INCHES |
|---------------------------------|--------------|---------------------------|---------------------------------------|-----------------|---------------|---------------------|
| 7200:120V                       | 15.5kV       | 80,000                    | 1.0E                                  | 1.63            | 13            | 11.50               |
| 8400:120V                       | 15.5kV       | 80,000                    | 1.0E                                  | 1.63            | 13            | 11.50               |
| 11000:110V                      | 15.5kV       | 80,000                    | 0.5E                                  | 1.63            | 13            | 11.50               |
| 12000:120V                      | 15.5kV       | 80,000                    | 0.5E                                  | 1.63            | 13            | 11.50               |
| 13200:120V                      | 15.5kV       | 80,000                    | 0.5E                                  | 1.63            | 13            | 11.50               |
| 14400:120V                      | 15.5kV       | 80,000                    | 0.5E                                  | 1.63            | 13            | 11.50               |

\* SEE PAGE 4, Primary Fuse Rating

The circle diagram can be used to predict the performance of a transformer for various loads and power factors. A convenient scale of volt-amperes is shown on the unity power factor line (u.p.f.) and commences at the zero or no-load locus. To use the diagram, measure the known V.A. and scribe an arc about the "zero" locus of a length that contains the angle of the burden power factor. The point at which the arc terminates is the error locus in phase angle minutes and ratio correction factor.

**CIRCLE DIAGRAM**

