

# JKW-200 SUPERBUTE™

## Outdoor Current Transformer

34.5 kV, 60 Hz, 200 kV BIL

### Application

Designed for outdoor service; suitable for operating meters, relays, and control devices. Rated Station Class with higher burden and extra creep distance. Available in a variety of ratio as outlined in the unit selection table below, with additional designs available upon request.



**ACCUBUTE**  
AVAILABLE

When choosing your Instrument Transformer, don't forget to explore the benefits of using the 0.15 accuracy class AccuBute line.

### Features

- Weight (Shipping/Unit): 438/403 lbs
- Creep Distance: 56.61" [1438 mm]
- 1 sec Thermal Limit: 75 x normal
- 2 cycle Mechanical Limit: 170 x rated (low ratio)
- 2 cycle Mechanical Limit: 85 x rated (high ratio)
- Insulation: HY-BUTE 60™ Butyl Rubber
- Insulation Class: 200 kV BIL, Outdoor
- Design Standard: IEEE C57.13



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## Unit Selection

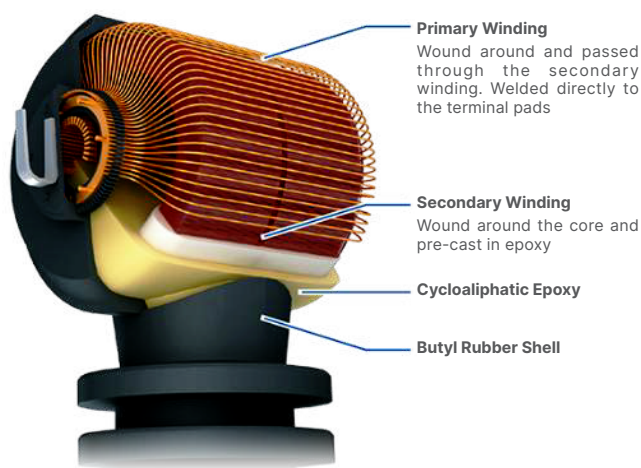
| RATIO         | IEEE METERING | IEEE RELAY ACCURACY CLASS <sup>2</sup> | THERMAL RATING FACTOR | CATALOG NUMBER          |
|---------------|---------------|----------------------------------------|-----------------------|-------------------------|
| 25/50:5       | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030013 <sup>3</sup> |
| 50/100:5      | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030012 <sup>3</sup> |
| 75/150:5      | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030011              |
| 100/200:5     | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030010 <sup>3</sup> |
| 150/300:5     | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030009 <sup>3</sup> |
| 200/400:5     | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030008 <sup>3</sup> |
| 300/600:5     | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030007 <sup>3</sup> |
| 400/800:5     | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030006 <sup>3</sup> |
| 500/1,000:5   | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030005 <sup>3</sup> |
| 600/1,200:5   | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030004 <sup>3</sup> |
| 800/1,600:5   | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030003 <sup>3</sup> |
| 1,000/2,000:5 | 0.3 B1.8      | T200/T400                              | 2.0/1.5               | 757X030002 <sup>3</sup> |
| 1,500/3,000:5 | 0.3 B1.8      | T400/T800                              | 1.5/1.33              | 757X030001 <sup>3</sup> |

1. High accuracy options available

2. First value given is for lower primary Ampere rating (tapped secondary); second value is for higher primary Ampere rating (full secondary).

3. Measurement Canada Approval: T-0117

## Advanced, Rugged Construction



Cross-section view of a Station-Class SUPERBUTE Current Transformer

### Tough & Resilient Butyl Rubber Shell

First introduced in 1955, HY-BUTE 60™ is a unique butyl rubber formula. This material is hydrophobic, non-arc tracking, resistant to heat, chemicals, ozone and ultraviolet and is an elastic rubber which does not easily chip or crack. Use of HY-BUTE 60 enhances safety by increasing the likelihood of a passive, contained failure mode.

### Accurate & Reliable Primary Design

Symmetrical distribution of winding turns within the CT head shell minimizes leakage flux for improved accuracy and thermal ratings

### Built-in Surge Protection

A unique multi-gap primary on CT's 600 amps and below is designed to clear dangerous overvoltage and fault conditions within ½ cycle

### High Overcurrent Capability

The robust primary bar design on CT's rated above 600 Amps has virtually unlimited short-time mechanical current withstand

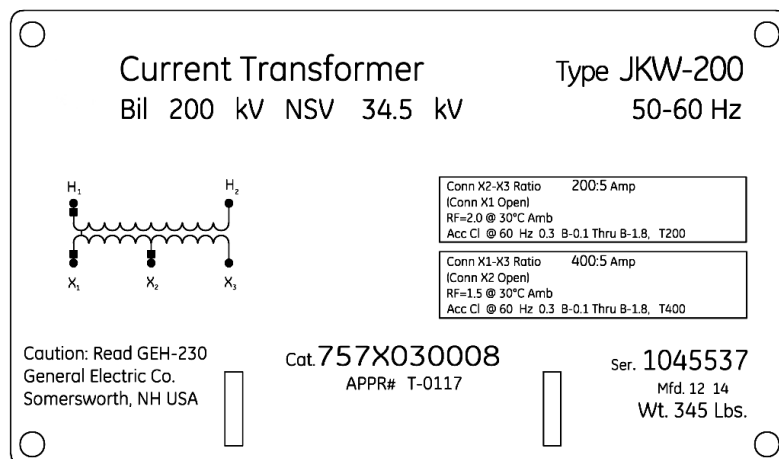
## Reference Drawing &amp; Accessories

| Accuracy Curves at AT 60 Hz (Low Rating): |            |                                   |            |
|-------------------------------------------|------------|-----------------------------------|------------|
| 25/50:5 thru 300/600:5                    | 9689241434 | 25/50:5 thru 300/600:5            | 9689241441 |
| 400/800:5                                 | 9689241395 | 400/800:5                         | 9689241419 |
| 500/1,000:5                               | 9689241393 | 500/1,000:5                       | 9689241417 |
| 600/1,200:5                               | 9689241391 | 600/1,200:5                       | 9689241415 |
| 800/1,600:5                               | 9689241389 | 800/1,600:5                       | 9689241413 |
| 1,000/2,000:5                             | 9689241387 | 1,000/2,000:5                     | 9689241411 |
| 1,500/3,000:5                             | 9689241385 | 1,500/3,000:5                     | 9689241409 |
| Accuracy Curves at 60 Hz (High Rating):   |            | Overcurrent Curves (High Rating): |            |
| 25/50:5 thru 300/600:5                    | 9689241433 | 25/50:5 thru 300/600:5            | 9689241342 |
| 400/800:5                                 | 9689241396 | 400/800:5                         | 9689241420 |
| 500/1,000:5                               | 9689241394 | 500/1,000:5                       | 9689241418 |
| 600/1,200:5                               | 9689241392 | 600/1,200:5                       | 9689241416 |
| 800/1,600:5                               | 9689241390 | 800/1,600:5                       | 9689241414 |
| 1,000/2,000:5                             | 9689241388 | 1,000/2,000:5                     | 9689241412 |
| 1,500/3,000:5                             | 9689241386 | 1,500/3,000:5                     | 9689241410 |
| Excitation Curves:                        |            | Outline Drawings:                 |            |
| 25/50:5 thru 300/600:5                    | 9689241337 | 25/50:5 to 300/600:5              |            |
| 400/800:5                                 | 9689241353 | Single Ratio                      | 9926780014 |
| 500/1,000:5                               | 9689241351 | Tap Ratio                         | 9926780003 |
| 600/1,200:5                               | 9689241349 | 400/800:5 to 1500/3000:5          |            |
| 800/1,600:5                               | 9689241347 | Single Ratio                      | 9926780016 |
| 1,000/2,000:5                             | 9689241345 | Tap Ratio                         | 9926780004 |
| 1,500/3,000:5                             | 9689241343 | Multi-Ratio                       | 9932478    |

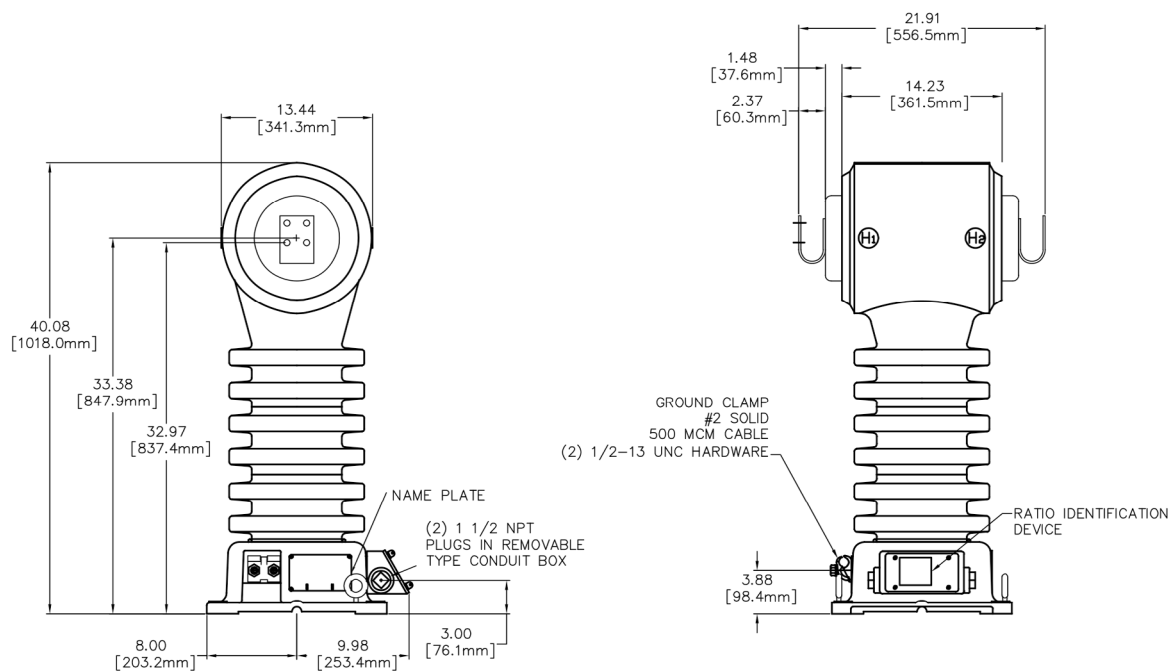
## JKW-200 Applicable Wiring Diagrams



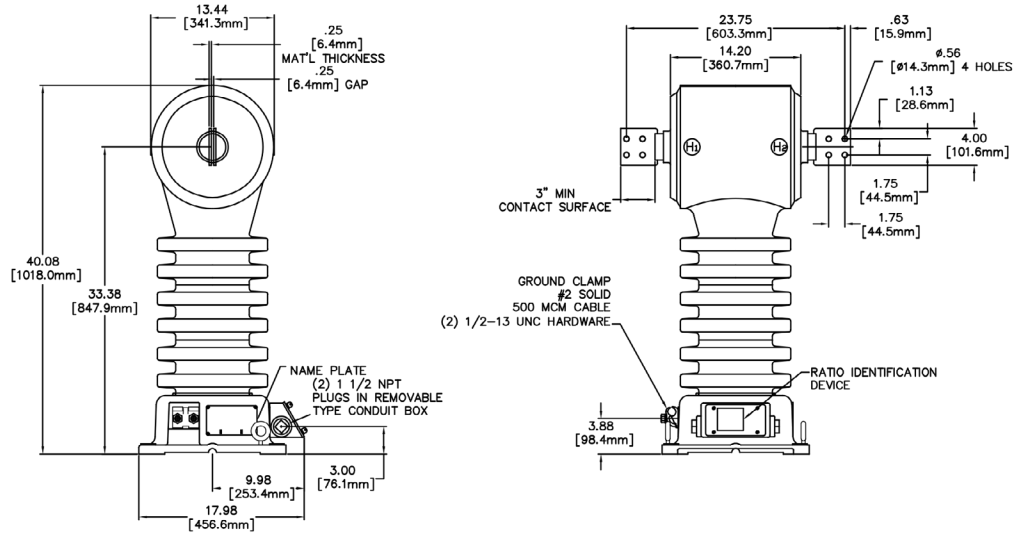
## Typical Nameplate



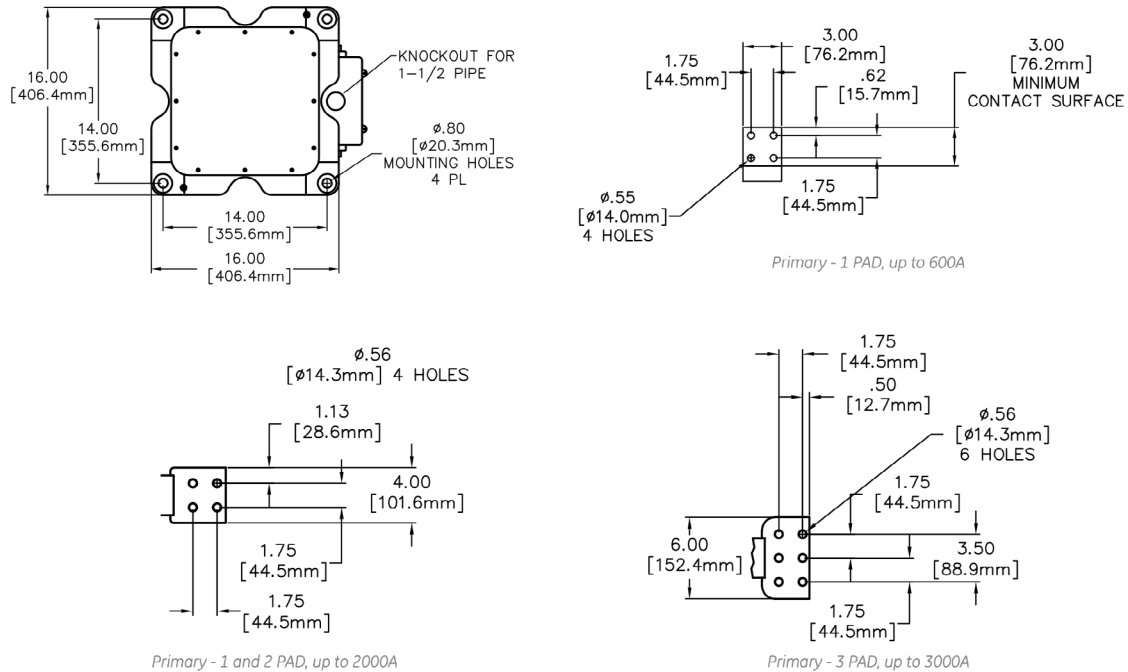
## Outline Dimensions - Up to and including 600 A



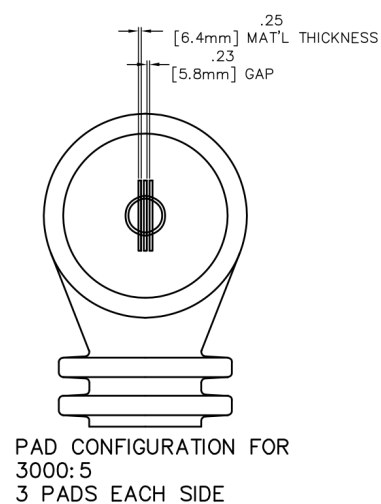
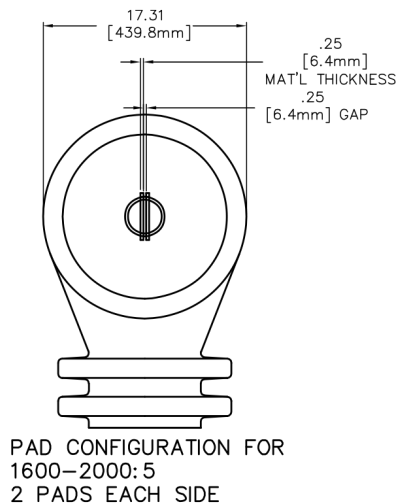
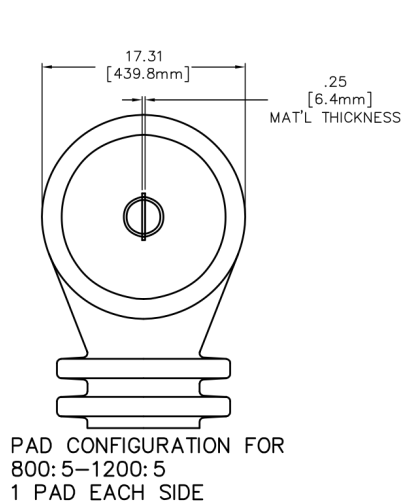
## Outline Dimensions - Above 600 A



## Mounting Plate & Primary Terminal Configurations



## Pad Configurations - Above 600:5 A



## Construction Details

### Insulation

The transformer design is constructed using premium HY-BUTE 60™ molded butyl rubber insulation for the transformer body. First introduced in 1955, this unique formulation is non-arc tracking and resistant to heat, chemicals, ozone and ultraviolet. This tough, resilient insulating material has proven to be superior in handling mechanical, electrical and environmental extremes, when compared against other insulation designs such as porcelain, urethane or epoxy.

### Core

The core is made from high-quality, grain-oriented, low-loss, high permeability silicon steel which is carefully selected and tested under rigidly controlled factory conditions. The core is wound in the direction of the grain to take advantage of the high permeability.

### Bushings

Since the bushings are an integral part of the transformer, standards normally pertaining to porcelain bushing tests do not apply. However, characteristics equal to, or better than, those required for porcelain are provided.

### Primary Windings

The primary winding is mounted in the high-voltage bushing head shell, which results in a more efficient use of the core properties by permitting a symmetrical distribution of the winding turns. It keeps leakage to a minimum, and makes possible a high level of accuracy with fewer ampereturns and corresponding improvement in thermal rating. In transformers rated 600:5 A and lower, a multi-

### Primary Terminals

Transformers rated 600:5 Amperes and below have a U-shaped pad for the primary terminals. Transformers rated 800:5 Amperes and above use a vertically-oriented, flat copper bar for the primary terminal pads. In both cases, the terminal pads contain four mounting holes with industry standard hole sizes and spacing.

### Secondary Winding

The secondary winding is wound with enamel-insulated copper conductor. All turns are evenly distributed around the core, and suitable compensation is used to obtain very high accuracy performance. The secondary leads extend downward through the bushing tube to the secondary terminal block in the transformer base.

### Secondary Terminals

The secondary terminals are enclosed in a box secured to the base of the transformer with four, 1/4 -20 screws. Both the box and terminal block can be relocated to any of three sides of the base to fit the particular installation. The terminal box has 1 1/2 inch threaded conduit openings at each end, and a 1 1/2 inch knockout at the bottom. It is also provided with a grounding terminal for the secondary circuit, when required.

### Testing

Rigorous test requirements go beyond IEEE routine requirements in order to ensure long term reliability. Test reports are saved electronically and can be e-mailed in various formats upon request.

### Polarity



### **Baseplate and Mounting**

Transformers can be mounted in any position from upright to inverted, providing the centerline of current transformers through the primary terminals is parallel with the ground surface. Loading by lines or busswork should be kept to a maximum to avoid placing appreciable strain upon the transformer bushings and terminals. The maximum recommended loading from all sources should not be greater than the equivalent of a 200-pound external force applied at the axis of the primary terminals. A fabricated metal base is the supporting structure for the transformer. It is provided with four 13/16 inch mounting holes and two lifting eye- bolts. Adjacent to the nameplate is a standard two- bolt ground connector.

### **Nameplate**

The nameplate is made of stainless-steel and located on the base of the transformer. Information is per IEEE designation, laser-engraved for easy-to-read form. Custom barcoding available upon request.

### **Maintenance**

These transformers require no maintenance other than an occasional cleaning if installed in an area where air contamination is severe.



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