

# Internally Mounted Oil-Type Bushing Current Transformer

## Offerings:

- **Inner diameter:** 3.5" [89mm] to 36" [915mm]
- **Outer diameter:** 5" [127mm] to 40" [1016mm]
- **Primary currents:** 25 – 8,000 Amps
- **Secondary current:** 1 & 5 Amps typ, others avail.
- **Frequency:** 50 and 60 Hz
- **Rating Factors:** Up to 2.0 @ 95°C Ambient.
- **Relaying class:** Up to C800 / 5P20-200VA standard, up to C1200 and higher as non-standard.
- **Metering class:** 0.15S thru 2.4 / 0.2S thru 5.0
- **Burdens:** B0.1 thru B1.8 / 2.5 – 45 VA
- Available in a variety of winding arrangement, Single Ratio (SR), Dual Ratio (DR) or Multi.
- **NOTE:** Sizes and accuracy class depend on current ratio.

**Application:** The internally mounted Oil-type BCT is designed to be mounted onto a high voltage bushing shank along the ground collar, inside the tank of a power transformer, power circuit breaker or voltage regulator, that uses oil as the insulating medium. When properly installed, the Oil-type BCT can be used on higher system voltage levels while maintaining its own mere 600 Volt class rating. Its simple construction provides a low leakage product with extremely high short circuit capabilities.

**Construction:** The toroidal core is continuously tape-wound using cold rolled grain oriented electrical grade silicon steel, which receives a full stress relief anneal after it is wound to its specified dimensions. The secondary winding is then wound of insulated copper magnet wire over the cellulose insulated core with the turns equally spaced around the core periphery. When taps are pulled, they are wound in a manner that assures a fully distributed winding between any connections. The coil is then finished with a cotton wove fabric. All materials used have a minimum rating of 105°C and are compatible for use in hot transformer oil.

**Connections:** The primary polarity H1/P1 is stamped in black on its surface. Secondary leads are typically #10 or #12 AWG grey Tefzel permanently marked with dual designations "X" and "S" for compatibility in the global market. The X1/S1 terminal represents the instantaneous polarity reference with respect to H1/P1.

**Nameplate:** A polyester nameplate is affixed to each unit that has all required information and ratings along with a serial number.

**Installation:** The OBCT is custom designed to fit over any bushing shank. It can be supported horizontally by mounting plates suspended from the tank top or vertically using similar clamping methods. When stacking OBCTs, it is good practice to place a cellulose insulating ring between each unit and

## Options:

- Designs can be engineered to match existing CT characteristics.
- Primary currents greater than 8,000 Amps.
- Higher temperature class rating of 155°C.
- Gapped cores for remanence control and transient response.
- Air core linear couplers.



between the unit and mounting plate, if metallic. When clamping the OBCT between plates, tighten enough to secure but do not over-tighten. High mechanical force may damage the unit or change its performance characteristic. Please note that mounting plates and hardware are not provided.

**Size Selection:** There are no "standard ratings" for OBCTs. Each unit is custom designed for its application. In addition to the current ratio, accuracy class and power frequency, some information regarding the equipment must be provided. To determine the physical size the limiting dimensions must be given, which are the minimum ID, the maximum OD and the maximum stack height. When stacking multiple OBCTs on the same bushing, the CT configuration or schematic must be given. To properly determine the Rating Factor, the maximum current rating of the bushing should be stated. To assure the OBCT is properly sized for short circuit conditions, the maximum let-through current must also be provided. Finally, the lead wire gauge and length must be specified.

**Handling and Storage:** For domestic shipments, the OBCT is individually boxed and palletized. Ideally they should be lifted using endless slings in a 2-point or 3-point arrangement, raising by fork lift or overhead hoist, one unit at a time. Caution should be employed while moving to avoid damaging the insulation and leads, and any sudden impacts to the unit. The OBCT is indoor rated so it should be left as originally packaged and stored indoors until ready for use.