

# Internally Mounted Dry-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 5.0 @ 55°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 Ratio (MR).
- **NOTE:** Sizes and accuracy class depend on current ratio.

**Application:** The internally mounted Dry-type BCT is designed to be mounted onto the high voltage bushing of a dead-tank power circuit breaker along the ground collar, protected by an external cover. It can also be installed inside a weather-tight cabinet or inside an MC switchgear compartment. When properly installed, the Dry-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 polyester film tape. All materials used have a minimum rating of 105°C.

**Connections:** The primary polarity H1/P1 is identified on its surface by a black stripe which folds over the side. Secondary leads are typically #10 or #12 AWG available in grey Tefzel, or PVC, THHN and SIS in colored coded bundles or single colors with markings to identify the terminal. They are also available with ¼" ring tongue terminal in lieu of leads. 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 DBCT is custom designed to fit over any bushing shank. They can be supported horizontally by mounting

## Options:

- Designs can be made to match existing CT characteristics.
- Primary currents greater than 8,000 Amps.
- Secondary terminals or leads.
- Gapped cores for remanence control and transient response.
- Air core linear couplers.



plates or non-magnetic straps. When stacking DBCTs it is good practice to place an insulating ring between each unit, and between the unit and mounting plate if metallic. When clamping the DBCT 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 DBCTs. 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 DBCTs 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 DBCT 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 DBCT is packaged in polycarb crates. 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 (or terminals), and any sudden impacts to the unit. The DBCT is indoor rated so they should be left as originally packaged and stored indoors until ready for use.

