

# Lightning and Overvoltage Protection for Wind Turbine Systems

## SafeBloc B(R) 12.5 (1+0) WT TCG

Class I • Class II • Type 1 • Type 2



**Location of Use:** Main Distribution Boards  
**Network Systems:** TN-S, TN-C  
**Mode of Protection:** L-PE, N-PE, L-PEN, L-N  
**IEC/EN Category:** Class I+II / Type 1+2  
**Safety:** High TOV Immunity  
**Technology:** Hybrid  
**Leakage Current Free:** Yes  
**Housing:** Compact Design  
**Compliance:** IEC 61643-11:2011  
 EN 61643-11:2012

### Technical Data

#### SafeBloc B(R) 12.5/xxx (1+0) WT TCG

750

#### IEC Electrical

|  |            |                 |
|--|------------|-----------------|
| Nominal AC Voltage (50/60 Hz)              | $U_o$      | 600V            |
| Maximum Continuous Operating Voltage (AC)  | $U_c$      | 750V            |
| Nominal Discharge Current (8/20 $\mu$ s)   | $I_n$      | 12.5 kA         |
| Maximum Discharge Current (8/20 $\mu$ s)   | $I_{max}$  | 40 kA           |
| Impulse Discharge Current (10/350 $\mu$ s) | $I_{imp}$  | 12.5 kA         |
| Specific Energy                            | W/R        | 39 kJ/ $\Omega$ |
| Charge                                     | Q          | 6.25 As         |
| Voltage Protection Level                   | $U_p$      | < 2.6 kV        |
| Response Time                              | $t_A$      | < 25 ns         |
| Overcurrent Protection (max)               |            | 250 A gG        |
| Short-Circuit Current Rating (AC)          | $I_{SCCR}$ | 50 kA           |
| TOV Withstand 120min                       | $U_T$      | 1000V           |
| Number of Ports                            |            | 1               |

#### Mechanical & Environmental

|                                 |           |  |
|---------------------------------|-----------|--|
| Temperature Range               | $T_a$     | -40 °F to +185 °F [-40 °C to +85 °C]   |
| Permissible Humidity            | RH        | 5%...95%   |
| Terminal Screw Torque           | $M_{max}$ | 26.5 lbf-in [3.0 Nm]   |
| Conductor Cross Section (max)   |           | 2 AWG (Solid, Stranded) / 4 AWG (Flexible)<br>35mm <sup>2</sup> (Solid, Stranded) / 25mm <sup>2</sup> (Flexible) |
| Mounting                        |           | 35 mm DIN Rail, EN 60715   |
| Degree of Protection            |           | IP 20 (built-in)   |
| Housing Material                |           | Thermoplastic: Extinguishing Degree UL 94 V-0  |
| Thermal Protection              |           | Yes  |
| Fault Indication                |           | Red Flag   |
| Remote Contacts (RC)            |           | Optional   |
| RC Switching Capacity           |           | AC: 250V/0.5A; 125V/3A   |
| RC Terminal Cross Section (max) |           | 1.5mm <sup>2</sup> (Solid) / 16 AWG (Solid)  |
| RC Terminal Screw Torque        | $M_{max}$ | 2.2 lbf-in [0.25 Nm]   |

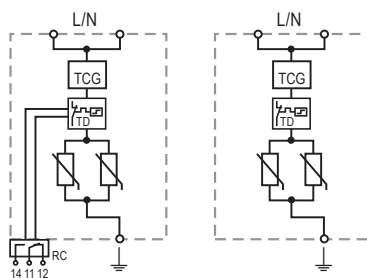
#### Order Information

|   |         |
|---|---------|
| Order Code  | 750     |
| SAFELOC B 12.5/xxx (1+0) WT TCG                         | 54.0590 |
| SAFELOC BR 12.5/xxx (1+0) WT TCG (with remote contacts) | 54.0591 |

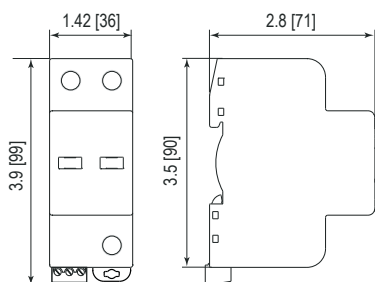
Internal Configuration

Legend

- L Line Conductor Terminal
- N Neutral Conductor Terminal
- ⏏ PE Conductor Terminal
- RC Remote Contacts Terminal (Optional)
- TCG Thermal Control Function with No Leakage
- TD Thermal Disconnect



Complete Unit



Single Unit Dimensions & Packaging

| <b>SafeBloc B 12.5/xxx (1+0) WT TCG</b>  |                | <b>750</b>                            |
|--|----------------|---------------------------------------|
| Weight                                   | pounds [grams] | .959 [435]                            |
| DIN 43880 Dimension                      |                | 2 TE / 1.42" [36]                     |
| Packaging Dimensions (H x W x L)         |                | 3.1 x 4.4 x 11.7" [79 x 112 x 298 mm] |
| Standard Order Quantity                  |                | 7 Units                               |
| <b>SafeBloc BR 12.5/xxx (1+0) WT TCG</b> |                | <b>750</b>                            |
| Weight                                   | pounds [grams] | .970 [440]                            |
| DIN 43880 Dimension                      |                | 2 TE / 1.42" [36]                     |
| Packaging Dimensions (H x W x L)         |                | 3.1 x 4.4 x 11.7" [79 x 112 x 298 mm] |
| Standard Order Quantity                  |                | 7 Units                               |

inches  
[mm]