



BTB200

Microcontroller-based device for
bus tie breakers management

DESCRIPTION

The **BTB200** controller provides the ability to control a bus tie breaker, for applications where it is necessary to divide the common bus-bars during certain operating conditions.

It manages the synchronisation between the two separated halves of the bus-bars (named A and B), based on an input signal, taking into account the number of generator sets connected on the two halves.

Generator sets synchronisation is achieved directly by the CANBUS connection to the SICES genset controllers, or alternatively by using analogue lines.

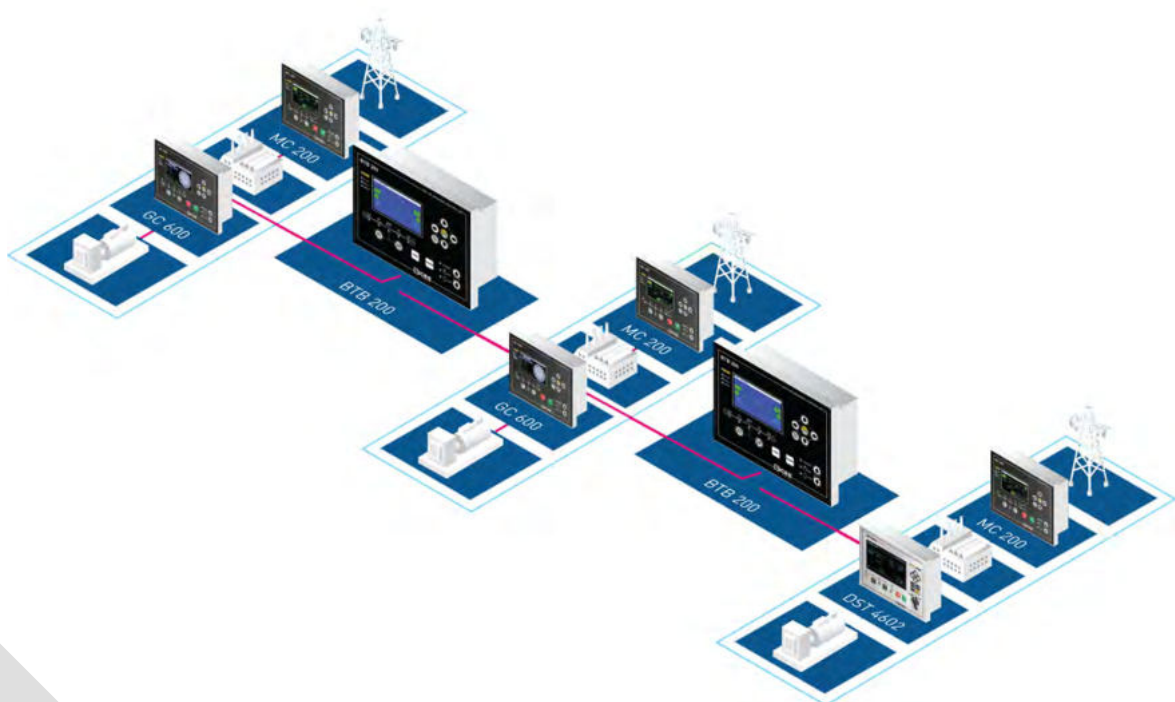
BTB200 measures the current flow across the tie breaker (3ph) by means of current transformers. It is able to measure the active (kW), reactive (kvar) and apparent power (kVA) exchanged on the bus-bars (and the power factor too), showing the flowing direction (A to B or B to A) on the display and by the LEDs on the front panel. BTB200 also measures the total energy on the bus-bars using energy counters (active and reactive, A to B and B to A).

For complex applications, it is possible to connect at the same CANBUS up to 8 **BTB200** bus tie breaker controllers, and up to 16 MC200 mains controllers and up to 16 GC600 or 24 DST4602 Evolution genset controllers.

BTB200 provides several different communication options, to ensure easy integration with remote monitoring facilities and building management systems.

A large full colour display presents operating status in a clear easy to view format. Combined with generous input and output capability that means complex sites can be tackled with ease.

APPLICATION EXAMPLE



INPUT - OUTPUT AND AUXILIARY FUNCTIONS



18 Digital inputs



18 Digital outputs



7 Analogue inputs



2 Analogue outputs



AND/OR
control logics



Fully configurable
history logs



16 Calendars and
4 timers



USB



RS232



RS485



Ethernet connection

- 18+1 digital inputs (one dedicated for the emergency push button)
- 18 digital outputs (14 transistors and 4 relays).
- 6 analogue inputs 0...10V, 1 analogue input 0...32V.
- 2 insulated analogue outputs -10/+10V.

Communication:

- 1 RS232 serial port (Modbus RTU).
- 1 RS485 insulated serial port (Modbus RTU).
- 1 Ethernet port 10/100Mbps (Modbus TCP).
- 1 USB FUNCTION port (Modbus RTU).
- 2 insulated CANBUS interfaces (for the two halves of the common bus-bars).

As option

- REWIND device for SIMONE remote monitoring connection.

EMBEDDED FUNCTIONS

- > Automatic or manual selection of the synchronisation direction.
- > Automatic or manual synchronization.
- > Voltage, frequency and phase matching in synchronizing.
- > Direct management of motorized circuit breakers or contactors.
- > Dedicated push buttons for manual opening/closure of the bus tie breaker.
- > Four alternative configurations.
- > Real time clock.
- > Periodical and "on event" data recording.
- > Embedded alarm horn.
- > Multilanguage device (EN, PT, IT, FR, ES).

MEASURES

Bus A/B voltages: L1-N, L2-N, L3-N, L1-L2, L2-L3, L3-L1.
 True RMS measure.
 Lx-N max. voltage < 300Vac cat. IV.
 Rated input voltage: 100/400V.
 Voltage input reading: 50000V max. (with external voltage transformers).

System and auxiliary currents: L1, L2, L3, N (*).
 True RMS measure.
 Internal current transformers.
 Rated input current: 5Aac e 1Aac.

Bus A/B frequency: Resolution = 0.1 Hz. accuracy = $\pm 50\text{ppm}$, $\pm 35\text{ppm}/^\circ\text{C}$ (typical).

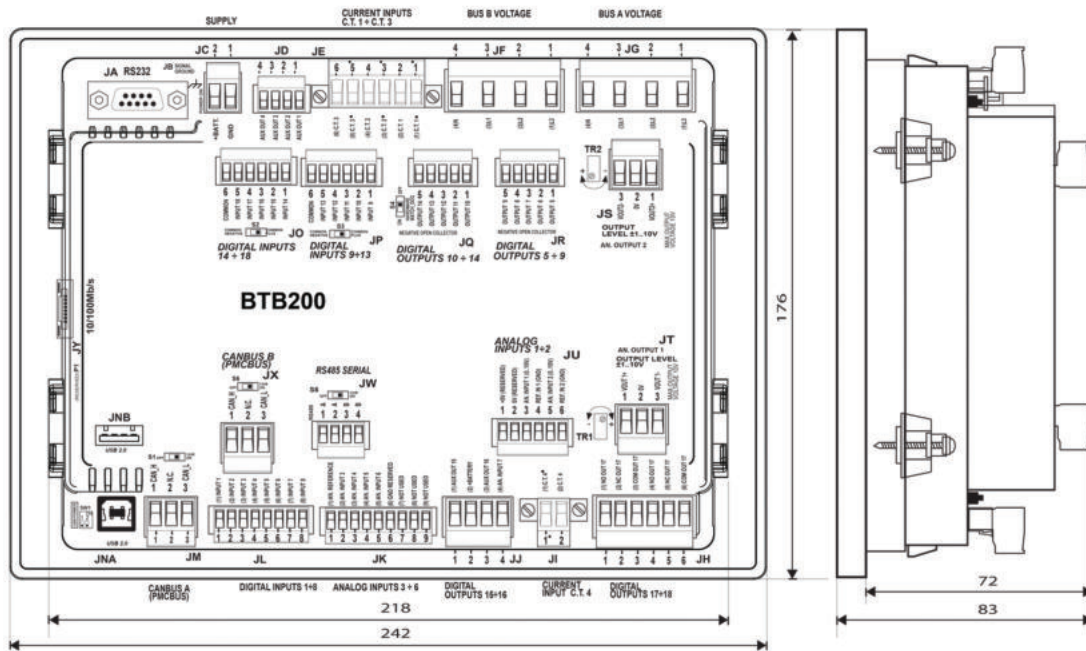
Supply voltage: Resolution = 0.1V.

Calculated values Active, reactive, apparent powers and power factors flowing on the bus tie breaker (total and single phase).
 Active and reactive energy counters (both A B and B A).

PROTECTIONS

- Bus A/B protections**
- Under frequency (81U).
 - Over frequency (81O).
 - Under voltage (27).
 - Over voltage (59).
- Current protections**
- Instantaneous overcurrent (50).
 - Time dependent overcurrent (51).
 - Phase overcurrent with voltage restraint/control (50V/51V) .
 - Maximum auxiliary current.
- Other protections**
- High/low supply voltage.

- TECHNICAL DATA**
- > Supply voltage: 8...32 Vdc.
 - > Power consumption: typical less than 6W (stand-by, controller switched on, LCD lamp switched off).
 - > Operating frequency: 50Hz or 60Hz.
 - > 4.3" TFT colour display with backlight.
 - > Graphic display resolution: 480x272 pixel.
 - > Graphic display dimensions: visible surface 95 x 54 mm.
 - > Operating temperature: -25 °C to +60 °C.
 - > Storage temperature: -30 °C to +80 °C.
 - > Protection degree: IP65 (only with gasket correctly installed).
 - > Weight: 1100g.
 - > Overall dimension: 244 (W) x 178 (H) x 83 (D).
 - > Panel cut-out: 218x159 mm (L x H).
 - > EMC: conform to EN61326-1.
 - > Safety: built in conformity to EN61010-1.



CERTIFIED MANAGEMENT SYSTEM
ISO 9001 - ISO 14001
BS OHSAS 18001



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S.I.C.E.S. SRL

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