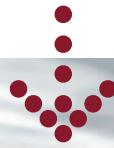


8BCV-C

**Capacitor Bank
Protection IED**



**A Complete, Reliable and Economic
Solution for most Capacitor Bank
Protection and Control Applications**

Protection Functions

50	Instantaneous Phase Overcurrent (2 Units).	27	Three Phase Undervoltage (3 Units).
51	Time Delay Phase Overcurrent (3 Units).	59	Three Phase Overvoltage (3 Units).
50N	Instantaneous Ground Overcurrent (2 Units).	59N	Ground Overvoltage (2 Units).
51N	Time Delay Ground Overcurrent (3 Units).	59C	Compensated Voltage Unbalance.
50Q	Instantaneous Negative Sequence Overcurrent (2 units).	47	Negative Sequence Overvoltage.
51Q	Time Delay Negative Sequence Overcurrent (3 Units).	50/62BF	Breaker Failure.
		46	Open Phase/Broken Conductor (I2/I1).
		60	VT Supervision.

59C Compensated voltage unbalance unit - three levels with independent settings

Voltage unbalance protection scheme with a neutral unbalance compensation function that achieves ideal sensitivity and selectivity to protect either grounded or ungrounded shunt capacitor banks according to the guidelines of the IEEE C37.99-2000 *Guide for the Protection of Shunt Capacitor Banks*.

The unbalance scheme utilizes the existing bus PTs and requires only one additional voltage-sensing device in the capacitor bank neutral, providing economic benefits over other schemes.

The BCV-C can be applied to externally fused, internally fused and fuseless capacitor banks, being suitable for detecting faults on the individual elements of the capacitor bank.

The sensitivity provided by the voltage unbalance compensation, the reduced cost of fewer required instrument transformers combined with the system protection and automatic control functions makes the BCV-C a complete, reliable, and economic solution for most capacitor bank protection and control applications.



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Additional Functions

- Built-in capacitor bank automatic control (using calendar, V, I, cosφ, P or Q).
- Programmable control logic.
- HMI: alphanumeric display, keypad and six programmable buttons for control operations.
- Optional graphical display (available on model "7BCV-C").
- One RS232+USB local port.
- Up to three fiber optic, electrical (RS232/RS485) or Ethernet remote ports.
- One port for CAN Bus protocol communications.
- Two LAN ports (RJ45 or Glass fiber optic MT-RJ) for IEC 61850 comms.
- DNP3, IEC-870-5 and MODBUS Protocols.
- IEC 61850.
- Integrated simulator.
- Trip/close circuit supervision (up to 3 coils).
- Phase sequence selectable (ABC or ACB).
- CB supervision (kA²).
- 4 programmable setting groups.
- Rated current: 1A / 5A.
- Frequency: 50 / 60 Hz.
- 4/16 programmable optical indicators (LEDs).
- Digital inputs: up to 44.
- Digital outputs: up to 22.
- One "in service" output.
- Virtual I/Os (up to 32 digital and 32 analog) for remote IEDs.
- Time synchronization (1 ms): IRIG-B or protocol DNP3/IEC-870-5/SNTP (IEC 61850).
- SOE recorder (400 events) with high resolution (1ms).
- Fault recording capabilities (15 reports).
- Historical metering data logging (168 registers).
- Oscillographic recorder (32 s/c); COMTRADE format.
- Power supply supervision.
- Self-checking supervision.
- New **Zerocomplus®** Software package.

Metering

- Phases and ground current values and angles.
- Phases and ground voltage values and angles.
- Unbalance voltage value.
- Phase-to-phase voltage values.
- Positive, negative and zero sequence current values and angles.
- Positive, negative and zero sequence voltage values and angles.
- Active, reactive and apparent power values.
- cosφ.
- Frequency value.
- Harmonic values (2nd to 8th) for phase-A current and voltage.
- Transducer values.

