

EPCOS Product Profile

Power Factor Correction

Power Quality Solutions



PF Controllers BR5000 Series

Intelligent • User-friendly • Cost-effective

General

The BR5000 controller series is intended to be used with unbalanced three phase loading conditions and to correct the power factor. The controller needs 3 Load CT inputs and corresponding voltages. The overall compensation is done on averaging basis. The controller is having ultra intelligent processor in built. It covers almost all the electrical parameters to be displayed and monitored .

The three versions of BR5000 Controller are

- BR5000 – 16 for contactor switching logic for slow varying loads
- BR5000 – 16TX for rapidly changing loading conditions (Option for GSM communication available)
- BR5000 – HT for High tension upto 33kV sensing of power factors and correction. Version available in 8/16 steps.



Features

- Microcontroller logic for measurements
- Control mode: Binary, unequal, Preset and user defined
- Multifunctional LCD display
- Three CT sensing for unbalanced loads
- Dual target Power Factor setting- useful for utility and DG mode operation
- Automatic synchronization possible
- Separate 3 CT monitoring of healthiness of capacitor within panel
- Data logging
- RS 232 in front and RS 232/485 switchable connection at rear
- Step operation indication on LCD display plus LED which facilitates viewing from a distance
- Unique facility of including 'Fixed Capacitor Bank' for purpose of Transformer compensation. This can be set such that the controller doesn't 'see' this capacitor

- Unique external temperature sensing by PT 100
- Settable alarm facility - undervoltage, overvoltage and so on
- Settable auxiliary outputs - 2 Nos for Alarm, etc.
- Auxiliary input -1 No
- EMI/EMC type tested
- Individual Harmonic measurement Upto 15th

Protection Warning

- Over / under voltage
- Capacitor over / under current
- Over / under frequency
- Load unbalance
- Over temperature
- Out of steps (Indication)
- NV-Ram battery down

Important display parameters

- Voltage
- Current
- Active power
- Reactive power
- Apparent power
- Capacitor current
- Per phase values of V, I and neutral current
- Power factor
- Frequency
- V_{THD}
- I_{THD}

Technical Data

- Auxiliary supply voltage -1Ph, 415V (-40% to + 20%)
- Measurement voltage: 3PH 3 wire 415 VAC (-40% to + 20%)
- Current Input - 1A or 5A
- Steps - 8 and 16 relay outputs
- Supply frequency - 45 Hz to 62 Hz

Mechanical and Maintenance

- Operating temperature - 0° to 70°C
- Storage temperature - -10°C to +75°C
- Humidity -0 to 98%

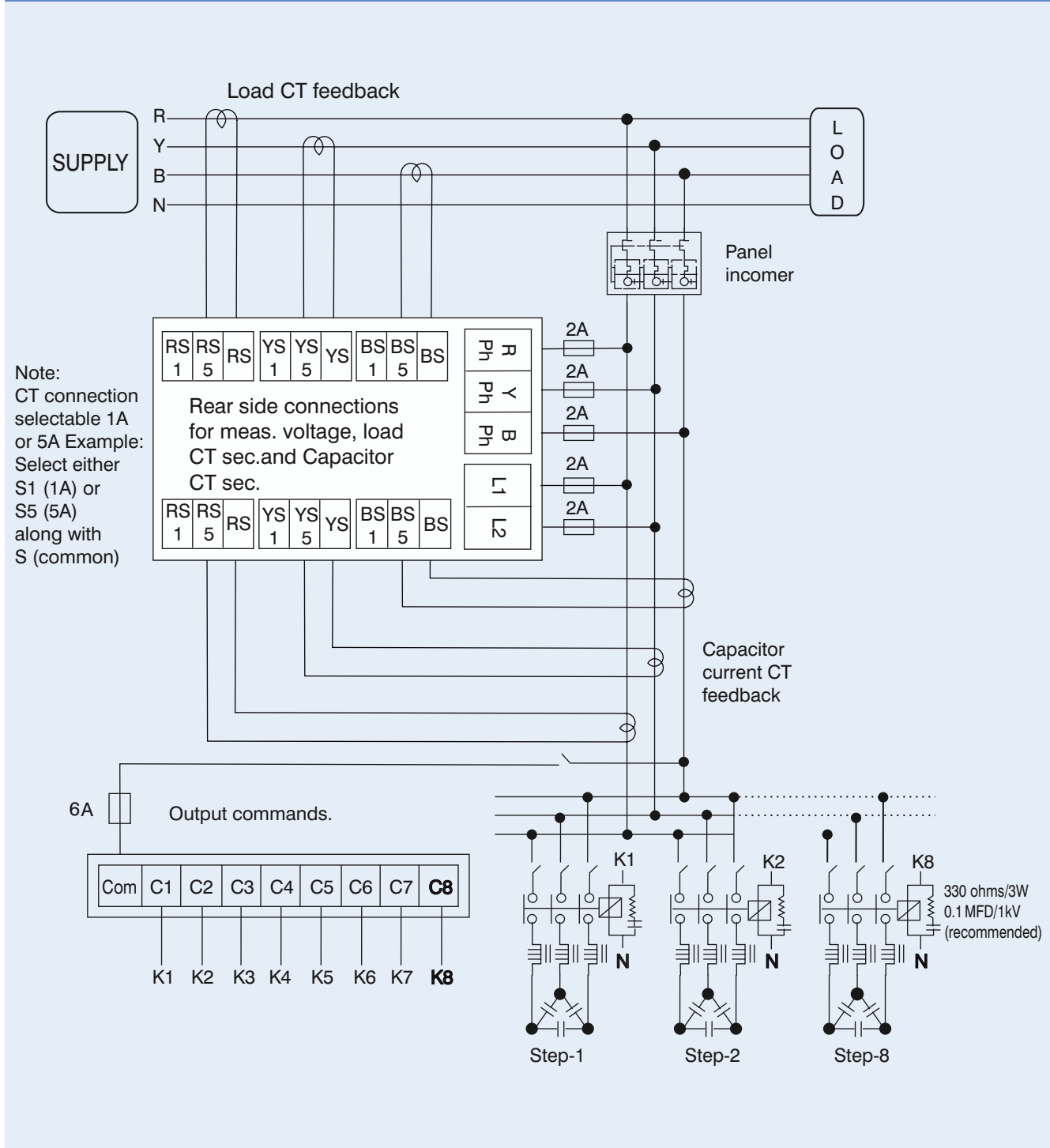
Dynamic Power Factor Controller (Transistorised) available in 16 steps

Special 8/16 step Controller for Medium Voltage application available

PF Controller BR5000 Relay Output

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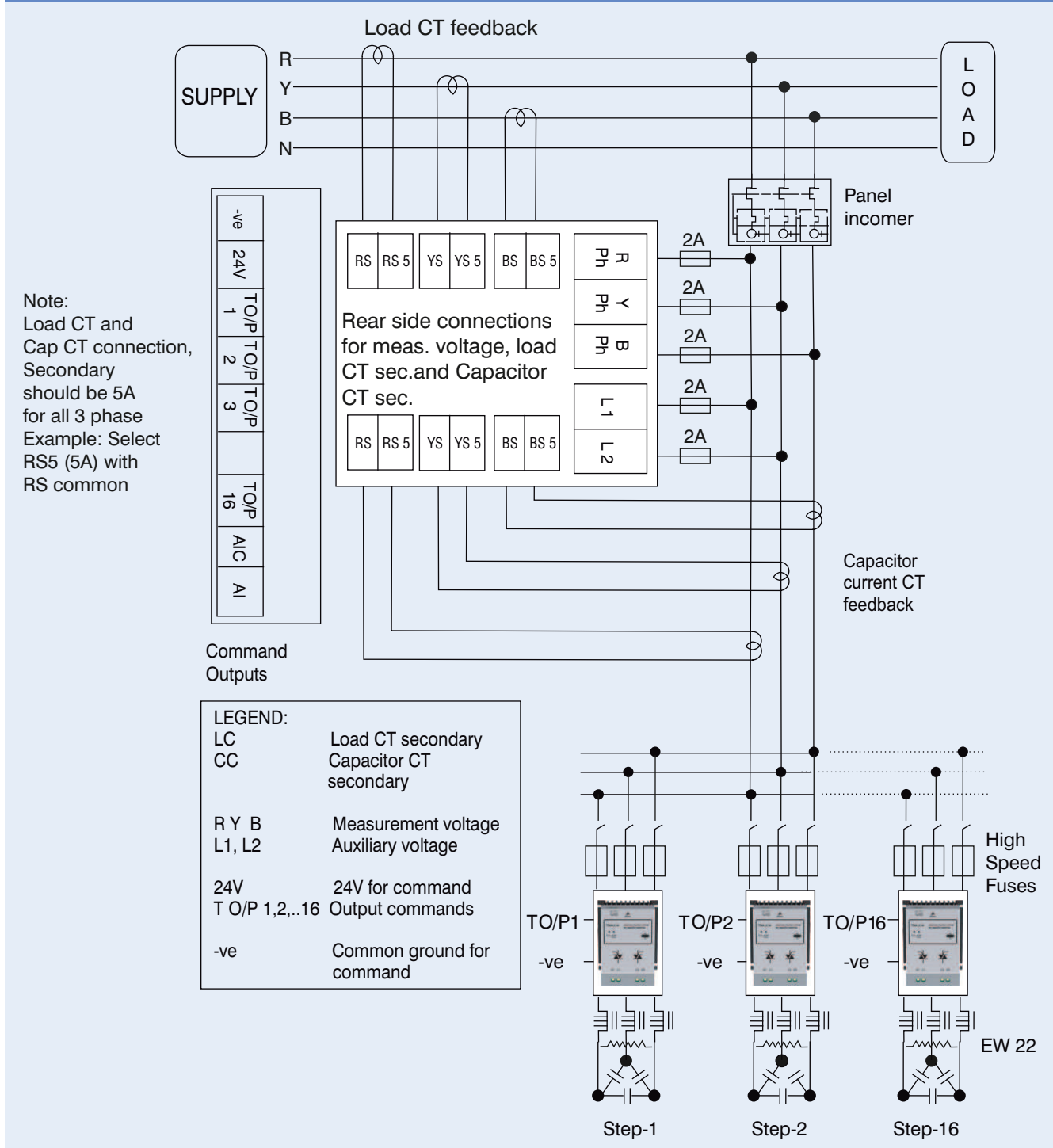
Typical wiring diagram for PF correction : Contactor switching



PF Controller BR5000 Transistor Output

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Typical wiring diagram for PF correction : TSM switching



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Selection table for controllers			
	BR5000 relay output		BR5000 transistor output
Steps	8 STEP	16 STEP	16 STEP
Switching	Contactor	Contactor	Thyristor
Ordering code	B44066R5908A415N1	B44066R5916A415N1	B44066R5716A415N1
Auxiliary supply	1Ph 415V (-40% to +20%)	1Ph 415V (-40% to +20%)	1Ph 415V (-40% to +20%)
Measurement voltage	3Ph 3wire 415V (-40% to +20%)	3Ph 3wire 415V (-40% to +20%)	3Ph 3wire 415V (-40% to +20%)
Load CT Input current	1/5 A-separate connectors for either of the CT connections	1 / 5 A-separate connectors for either of the CT connections	only 5Amp CT secondary
No. of outputs	8 Nos. relay o/p of burden 1000VA by contactor coils	16 Nos. relay o/p of burden 1000VA by contactor coils	16 digital outputs maximum 20 mA loading
Alarm outputs	2 Nos.	2 Nos.	1 No.
-Insufficient Compensation	Yes	Yes	Yes (only display)
-Overcompensation	Yes	Yes	Yes
-Over / under voltage	Yes	Yes	Yes
-Overcurrent	Yes	Yes	Yes
Automatic initialisation		No	NoNo
Communication interface	RSXXX RS232 and RS485	RS232 and RS485	RS232 and RS485
Parameters displayed			--
System voltage	Yes	Yes	Yes
Load current	Yes	Yes	Yes
Capacitor current	No	No	No
Active power	Yes	Yes	Yes
Reactive power	Yes	Yes	Yes
Apparent power	Yes	Yes	Yes
Frequency	Yes	Yes	Yes
Individual harmonics measurement upto	15	15	15
THD - V	Yes	Yes	Yes
THD - I	Yes	Yes	Yes
Monitoring of individual capacitor current	Yes - Health check	Yes - Health check	Yes - total panel capacitor current monitored
Apparent current	Yes	Yes	Yes
Overtemperature	Yes	Yes (only INT temp.)	
Real time cos ϕ	Yes	Yes	Yes
Target cos ϕ	Yes (upper and lower target PF- programmable)	Yes (upper and lower target PF- programmable)	Yes- (upper and lower target PF- programmable)
KVAr value to target cos ϕ	Yes - displayed as System reactive power	Yes - displayed as System reactive power	Yes - displayed as System reactive power
Switching and discharge time range			
-Correction time	1 - 240 sec	1 - 240 sec	20-5000 m sec
-Discharge time	1 - 240 sec	1 - 240 sec	NA
Number of control series	Unequal, C-series (1-15), E-series	Unequal, C-series (1-15), E-series	Binary, unequal C-series (1-15), E-series
Weight (in kG)	2.5 kG	2.5 kG	2.5 kG
Dimensions (L x D x H in mm)	144 x 155 x 144 mm	144 x 155 x 144 mm	144 x 155 x 144 mm