HITACHI ABB

LEAFLET

RVT-DL Power Factor Controller

Smart power factor controller for dynamic power factor compensation

The RVT-DL Controller is the control unit of an automatic capacitor bank equipped with static switches (dynamic compensation)

The RVT-DL Controller performs the switching of capacitors with a view to reaching a user-defined target cos ϕ

All the switching parameters may be programmed automatically or manually

Main features

- Automatic or manual configuration
- Display of V, I, f, Q, P, S, cos ϕ, THD (Total Harmonics Distortion)
- Display of the indirectly measured capacitor currents
- Display of the switching cycles per capacitor stage
- Setting of the discharge time for all stages.
- Capacitor outputs individually programmable
- Temperature sensor for fan control
- Over temperature shut-down programmable
- Current transformer input for 1 A and 5 A
- Password protection

Functional principle

- Single or Three-phase, electronic measurement system
- Acquisition of the active and reactive current portion of the network via the current and voltage cir-cuit
- Reactive power will be calculated with the current from a phase conductor and the voltage between two phase conductors
- Switching ON or OFF of capacitor stages in the event of deviations in the set power factor
- Switching of capacitors via thyristors
- Control via switching thyristors is implemented in an optimized manner

Automatic configuration

It is possible to learn and save the connection configuration of the power factor controller

LCD display

- Quality LCD display
- Display of comprehensive measurement parameters, importantly power factor upto 3rd decimal

Over temperature shut-down

- The over temperature shutdown switches off connected capacitor stages
- This results in the reduction of the interior temperature of the PFC cabinet and protects the capacitors
- Programming of a lower or upper limit temperature

Interface

- Depending on version, equipped with RS232/ RS485 interface
- Standard Modbus RTU through RS485
- Integration of PLC systems, building management systems or energy management systems
- Modbus transfer rates: 9.6, 19.2, 38.4, 57.6, 115.2 kBit/s

Technical data

Parameter	Value
Auxiliary supply	230 VAC (±10%)
Measurement Supply	3 phase, 4 wire, 230 VAC (L-N). PT's provided for ensuring complete Isolation. Current measurement is carried out on all 3 phases.
Line frequency	45 to 55 Hz
Voltage Surge	± 0.5 kV to ± 4 kV as per IEC61000-4-5
Dielectric withstand	2.5 kV rms, 50 Hz for 1 minute
Voltage Burden	6VA for Aux. Supply, less than 0.5VA for measurement supply
CT Secondary current	1 A / 5 A selectable internally
Minimum sensing current	10 A RMS for 1 sec., non-recurring
Current burden	< 1 VA for load CT per phase
CT Amplitude Error	< 0.2%
CT Phase error	< 0.5%
Accuracy of measurement	1% ±Digit for Voltage & Current
minimum switching time	~20 m sec
Real time clock	Available
Display	
Type	16 X 2 Character Large LCD with Yellow/ Green Backlight
Parameters / Values displayed	Active power, Reactive power & Apparent power
	RMS values of voltage & current
	Average values of voltage & current
	Frequency
	Active Energy, Reactive Energy, Apparent Energy
	PF display to 3rd decimal (0.999)
Monitoring	
Faults monitored	Over / under Voltage
	Over / under Load
	Over Temperature (internal)
	RTC Battery Low
Output	
No. of transistor outputs	12 No.
Output transistor rating	20 mA, 12 - 24 VDC
Operating conditions	
Temperature	0°C to 60°C
Humidity	Upto 95%, non-condensing
Communications	RS485, Standard MODBUS RTU
Data logging	2 months of Data Logging Provision with 1 hour interval
Physical details	
Dimensions	144 X 144 mm Front Fascia, 95 mm Depth, cutout 138 X 138 mm
Weight (approx.)	1.5 kg
Casing	ABS/ Polycarbonate housing
Protection	Front IP54, Rear IP20
Connection terminals	Screw-type, pluggable, max. 2 sq mm

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