SAC-E
Smart Automatic Controller-Economic Type
Auctomatic Relay for Power Factor

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Measuring
Analysis
Calculation
Inverting
Compensating

SMART AUTOMATIC CONTROLLER
-Economic Type-

Overview

SAC−E Type is the device to control power factor as switching automatically capacitor banks. If current power factor is below than target value set by operator, SAC−E send the output signal to switch on capacitor banks step by step. Operator can switch on/off them manually as changing the operation mode from auto to manual.

Operating Condition

Ambient temperature	: -20℃ ~ +60℃
Altitude	: ≦ 2000m
Humility	: Maximum 90%
Environment	: No conductive dust medium

Features

- Human interface with a large-screen liquid crystal display
- Modular assembly with exterior flow line shape
- Display power factor, voltage, current, active power, reactive power, total harmonic distortion (voltage/current), frequency,   average switching status of capacitor banks and other information
- Setting parameters expressed in English and inputted as numeral
- Operation mode selection (Manual / Automatic)
- Sampling physical quantity of reactive power with harmonic measurement
- RS-485 communication port with MODBUS protocol (Optional)

Through SAC management software, the real-time data and the history of load curve on the system can be observed in the computer and reported for the user. This type can provide the energy-effective field data quickly and conveniently.

Drawing for Installation
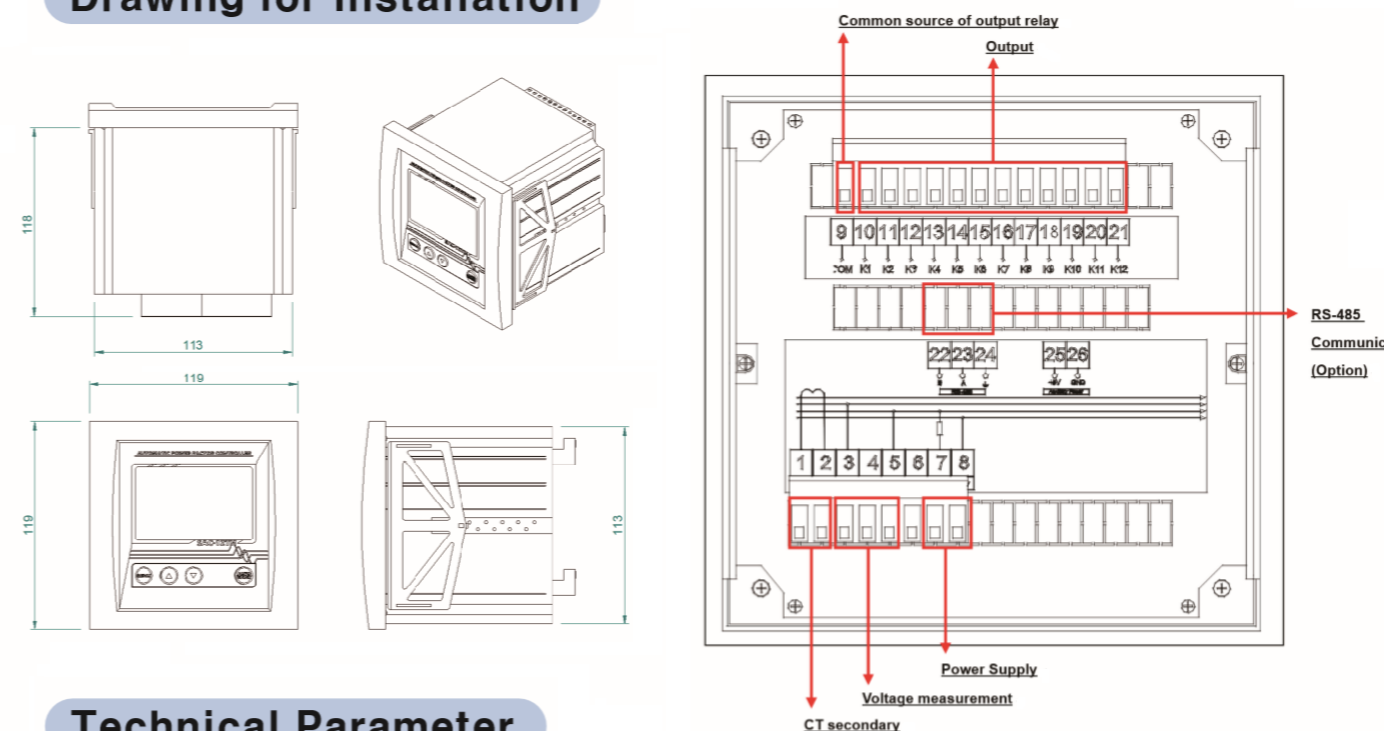
Technical Parameter

Description	Rating
Measurement	
Power Supply	160~240V, 45~65Hz
Voltage measuring	100V ~ 500V, 45~65Hz
Current measuring	1~6000A
Power Factor measuring	0.200(leg) ~ 0.200(lead)
Display Performance	
LCD data refresh cycle	≦ 1s
Display version	2.0
Active power indication	0 ~ 6553kW
Reactive power indication	0 ~ 6553kvar
voltage total harmonic distortion rate indication	0.0 ~ 100.0%
current total harmonic distortion rate indication	0.0 ~ 100.0%
Input/Output Signal	
Voltage input	400V (Line voltage)
Current input	0~5A, sensitivity 50mA
Control output	250V, 5A (static) 12V, 30mA (dynamic)

* Sampling voltage and current source should not be connected from same phase

Description	Rating
Communication	
Communication Interface	RS-485 (MODBUS protocol)
Communication speed	4800 ~ 38400bps (no parity bit)

The controller has the communication interface to support MODBUS protocol. Items include ID numbers and RS-485 communication interface communication rate set, ID number describe the machine in the system in the network address of No. 001 ~ 255. Communication rate is 4800 ~ 38400bps.

Description	Rating
Measurement Accuracy	
Voltage	R± 0.5% Active Power: ± 1.0 %
Current	± 0.5% of reactive power: ± 1.0%
Power Factor	± 1.0% Frequency: ± 0.1Hz

* Above accuracy is guaranteed to one year after 10 minutes which the controller is warmed on.

Description	Rating
Setting	
CT ratio	01~120
Delay time	5~100s (static), 0.1~30s (dynamic)
Target power factor	0.80(leg)~−0.80(Lead), 0.01step
Over−voltage	400~480V, 2V step
Switching threshold	0.5~2 (set value for input threshold), 0.1 step
Excision threshold	1.2 − Current setting
Harmonic protection	HV : 0.0~50.0, 0.5 step / HI : 0.0~100, 0.5 step
ID Number	001~225
Baud rate	4800, 9600, 19200, 38400bps
Capacitor preset	0~999kvar/step, 1 step