KPFI-08

Power Factor Controller

Technical Datasheet

RS-485

RS-485

FEATURES

- The **KPFI-08** power factor controllers are instruments used for measuring and compensating reactive power in electrical installations by activating and controlling capacitor banks.
- Applicable at low, medium, or high voltage levels, through the programming of Potential and Current Transformer ratios and connection schemes (single-phase measurement, three-phase control)
- The **KPFI-08** features 8 outputs for controlling capacitor banks and 1 output for alarms.
- It offers two operating modes: control, in which you can select 1 out of 20 standard activation patterns for the capacitive stages, and auto-initialization, where the controller identifies the reactive power of each bank as well as the connection diagram applied in the installation and uses the obtained values as settings for power factor control.

APPLICATIONS

- Control and activation of capacitor banks for power factor correction.

CHARACTERISTICS

INFORMATION

- It includes current, voltage, frequency, powers (active, reactive, and apparent), power factor, the amount of Kvar needed for correction, THD (Total Harmonic Distortion), and harmonics (voltage and current, up to the 31st order), temperature, energy (active, reactive, and apparent), demands (active, apparent, and current), and the number of activations for each capacitive stage.

CONNECTION TYPES

- The measurements taken by the KPFI-08 are single-phase, but power factor control is carried out considering a three-phase system (star or delta configuration).

INSTALLATION

- Panel's Door
- Technical support: get in touch via e-mail, telephone, WhatsApp and YouTube videos

INTERFACES, READINGS & CONFIGURATIONS

- The HMI (Human Machine Interface) consists of an LCD display and four navigation keys, allowing for local reading and configuration
- RS-485 communication (optional).
- Modbus-RTU protocol, allowing integration to PLCs, master MMIs, supervisory systems and data concentrators.
- It includes 8 outputs for activation and control of capacitor banks. It also features 1 auxiliary output for alarms related to the following conditions: undervoltage and overvoltage, underfrequency and overfrequency, undercurrent and overcurrent, voltage THD (Total Harmonic Distortion), current THD, undercompensation, overcompensation, and temperature.
- It offers two operating modes: control, where you can choose from 20 different programming patterns, or auto-initialization, where the controller identifies the reactive power of each bank as well as the connection diagram applied in the installation, using the obtained values as settings for power factor control.

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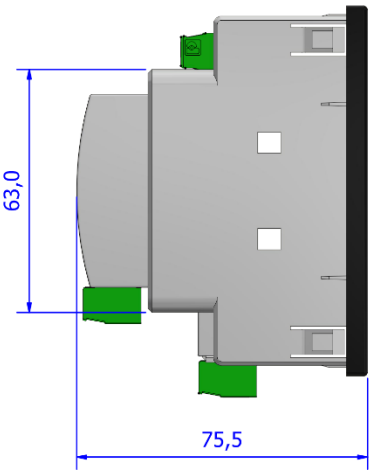
RELAY OUTPUTS	*Capacitor Banks (power factor correction)*	8 outputs for control of capacitive stages (4Ac.a / 250Vca). It can be used in two modes: control, where the user selects 1 out of 20 predefined stage activation patterns, or auto-initialization, where the controller identifies the reactive power of each bank as well as the connection diagram applied in the installation, using the obtained values as new settings for power factor control.
	Configuration - power factor of interest	0.8 inductive....0....0.8 capacitive
	Supervisory Alarm	1 output (4Ac.a / 250Vac) - Related to the following conditions: undervoltage and overvoltage, underfrequency and overfrequency, undercurrent and overcurrent, voltage THD (Total Harmonic Distortion), current THD, temperature, undercompensation, and overcompensation.
MEASUREMENTS	*Instantaneous*	Current, voltage, frequency, power (active, reactive, and apparent), power factor, amount of missing Kvar for correction, THD (Total Harmonic Distortion), and harmonics (voltage and current, up to the 31st order), temperature.
	Energies, Demands and Activations	Energies (active, reactive and apparent), demands (active, apparent and current), number of activations of each capacitive stage.
	Minimum and Maximum	Voltage, Current, Frequency, Power, Demands, Temperature, THD
CIRCUIT	*Connection Type*	Single phase - 1 current, 1 voltage (PH-PH or PH-N)
	Control	Three-phase (Star or Delta)
	Nominal Voltage / Working Range	Nominal: 240 Vac | Working range: 30 to 550Vac (PH-PH)
	Current/Working Range	Nominal: 5Aca | Working range: 2mA to 6Aca.
	Frequency - Working Range	40 to 70 Hz
	Connection	Quick coupling terminal blocks
	Maximum Cable to be used	2,5mm²
	Internal Consumption	<0,6VA
	Temperature Measurement	-10 a 60°C (14 to 140°F)
POWER SUPPLY	*Voltage – Working Range*	110 to 550Vac.
	Internal Consumption	< 10VA
ACCURACY at 25°C (77 °F), referred to the full scale	*Voltage and Current*	0,5%
	Powers	1,0%
	Energies	Active and Apparent: 1,0% | Reactive: 2,0%
	THD	4%
COMMUNICATION	*Connection/Protocol*	RS-485 - Modbus RTU
	RS-485 Cabling	Shielded cables, with at least two twisted pairs (2x24 AWG), minimum section of 0.25mm² and characteristic impedance of 120ohms
	Transmission Speed	4800, 9600,19200, 38400 or 57600bps (configurable)
	Data Format	8N1, 8N2,8O1,8O2,8E1 or 8E2 (configurable)
	Addressing	1 to 247 (configurable)
DISPLAY	*LCD (green)*	2 lines x 16 characters, with backlight
CASE	*Material*	Thermoplastic
	Mass	0,35Kg
	Protection Degree	IP-50 (Front) e IP-20 (Casing)
ENVIRONMENTAL CONDITIONS	*Storage/operation temperature*	-20 ... +65°C (-4....149°F) | -10 ... +60°C (14....140°)
	Moisture	15...95% (No condensation)
NORMALIZATION	*Electrical Parameters*	IEC 61326-1:2012 Table – 2 IEC 61010-1:2010 IEC 60529

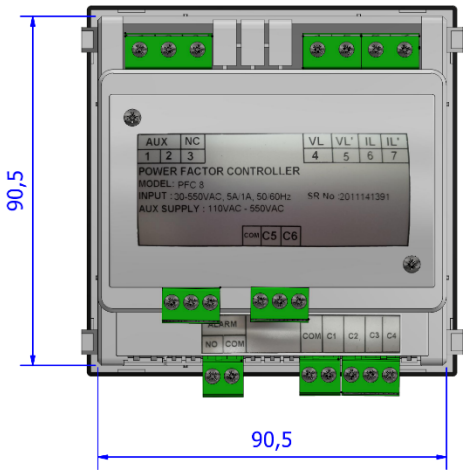
DIMENSIONS

Front View

Side View



Panel Cutout



How to Specify:

K05PF							0	0

Protection Degree:

1: Standard (IP-50 for front and IP20 for casing)

Voltage Input:

1: 30 to 550 Vac(PH-PH)

Current Input:

5: 5Aca

Frequency:

1: 50/60Hz

Communication:

0: No exits
1: RS-485(Modbus-RTU)

Power Supply:

1: 110 to 550Vc.a.

Modelo Padrão: (Example)

K05PF 1 1 5 1 1 1 0 0

Power Factor Controller {Protection Degree – Standard}{Voltage Input 500Vac} {Current Input 5Aac} {Frequency 50/60Hz}{RS-485} {Power Supply - 110 to 550Vac}

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