



RS-485

FEATURES

- **KPF-12** power factor controllers are instruments intended to measure and compensate reactive power in electrical installations, by means of capacitor banks management.
- Applicable either on low, mid or high voltage, since it is possible to program the potential and/or current transformer ratios and the connection diagrams (single-phase connections, with three-phase power factor control).
- **KPF-12** includes 12 outputs for capacitor banks activation and management, 2 alarm outputs (electrical parameters and temperature alarms) and 1 RS-485 output for communication.
- Allows programming of 12 stage activation patterns, and presents 2 operating modes (automatic and auto setting).

APPLICATIONS

- Capacitor banks activation and management in power factor correction applications

PRODUCT INFO

ELECTRICAL PARAMETERS – 58

- Includes current, voltage, active, reactive and apparent powers, power factor, inductive energy/active energy ratio, capacitive energy/active energy ratio, THD (voltage, current, powers, odd harmonics calculations up to 19th order)

MEASUREMENT CONNECTIONS

- **KPF-12** uses single-phase measurement diagrams for correction of power factor in three-phase systems (Star or Delta)
- By means of an additional voltage input, can be used for power factor correction in applications driven by generators

INSTALLATION

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

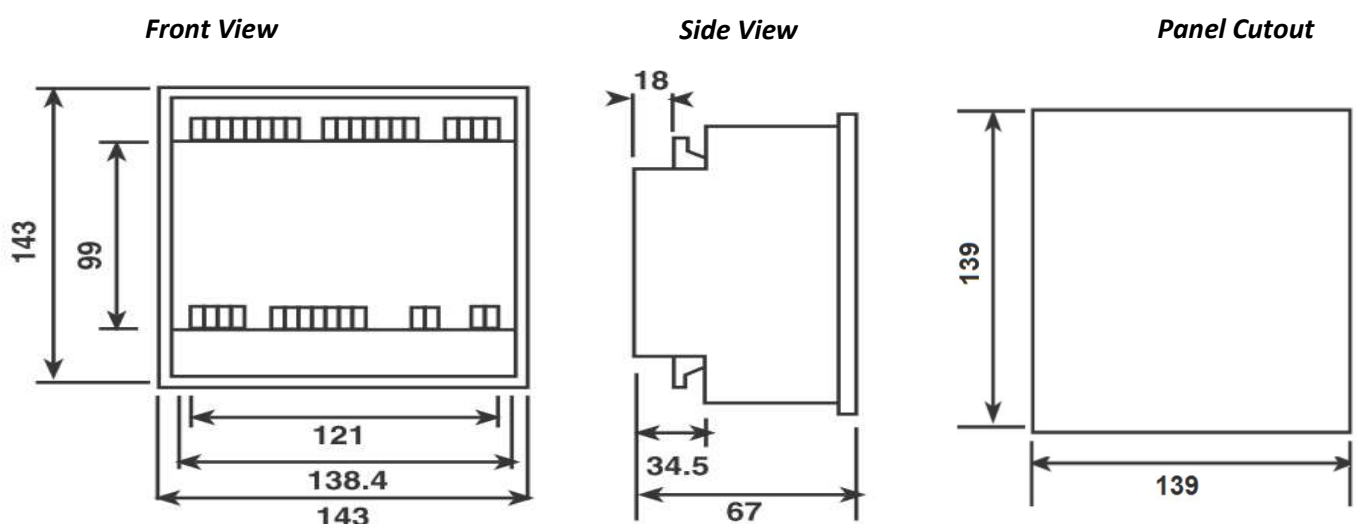
INTERFACES, READINGS & CONFIGURATIONS

- Man Machine Interface (MMI) composed of display (LED) and four navigation keys, allowing local reading and configuration
- RS-485 communication
- Modbus-RTU protocol, allowing integration to PLCs, master MMIs, supervisory systems and data concentrators
- Includes 12 outputs for activation and management of capacitor banks. Also features two auxiliary outputs, one for electrical measurement alarms (overvoltage, over THD – voltage, and Inductive/active and Capacitive/active energy ratios) and the other for temperature alarm
- Allows programming of 12 distinct stage activation patterns, including a special condition where the user can define each stage reactive power value or, associated with auto-setting mode, check each stage reactive power and use it as a reference for power factor control.

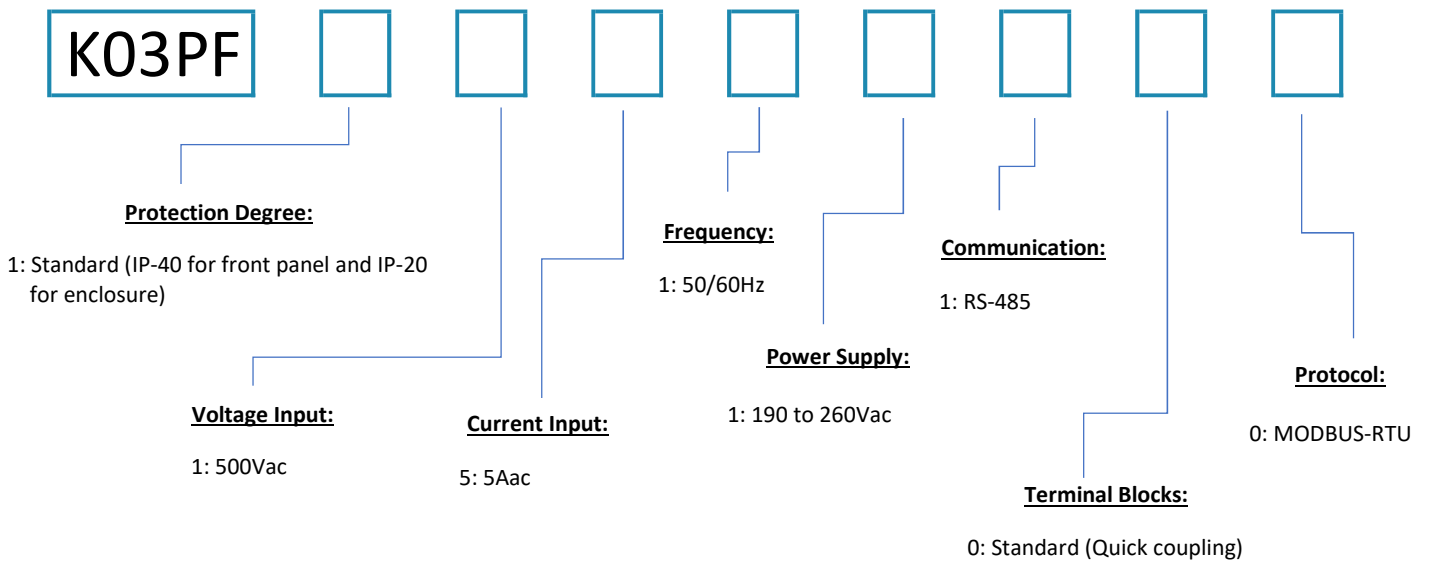
Power Factor Controller

RELAY OUTPUTS	Capacitor Banks (power factor correction)	12 outputs for management of power factor correction stages (3Aac/250Vac) 12 stage activation patterns are available for management of the reactive power. The controller can be used in two modes - automatic (user defines pattern and connection diagrams) or auto-setting (KPF-12 checks the reactive power of the stage(s) and the connection diagram and uses the obtained values as the new configurations for power factor controlling)	
	Fan Alarm	1 output (3Aac/250Vac): Temperature related	
MEASUREMENTS AND INPUT INFO	Measurement Alarms	1 output (3Aac/250Vac): Electrical parameters related - Overvoltage, Over THD (voltage), Inductive/active and Capacitive/active energy Ratio	
	Instantaneous	Current, voltage, powers (active, reactive and apparent), power factor, inductive/active energy ratio, capacitive/active energy ratio and THD (voltage, current and powers, with odd harmonics calculation up to the 19 th order)	
	Measurement	Single phase, 1 current, 1 voltage (Ph-Ph or Ph-N)	
	Power Factor Control	Three-phase (Star or Delta)	
	Voltage Input (Load) – Working Range	20 to 500Vac	
	Voltage Input (Generator) – Working Range	110 to 250Vac	
	Current – Working Range	50mA to 5.5Aac	
	Frequency	50/60Hz	
	Connection	Quick coupling terminal blocks	
	Maximum Cable to be used	2,5mm ²	
POWER SUPPLY	Internal Consumption	<10VA	
	Temperature Measurement	0 to 100°C (32 to 212°F)	
	Voltage – Working Range	190 to 260Vac	
	Internal Consumption	< 13VA	
	Voltage, Current and Power Factor	1.0% ± 1 digit	
ACCURACY at 25°C (77 °F), referred to the full scale	Powers	2.0% ± 1 digit	
	COMMUNICATION	Connection/Protocol	RS-485 - Modbus RTU
		RS-485 Cabling	Shielded cables, with at least two twisted pairs (2x24 AWG), minimum section of 0.25mm ² and characteristic impedance of 120ohms
DISPLAY CASE	Transmission Speed	9600, 19200 or 38400 (configurable)	
	Data Format	8N1, 8N2, 8E1 or 8O1 (configurable)	
	Adressing	1 to 247 (configurable)	
	LED (red)	High-bright LED Display, 4 digits and 7 segments	
ENVIRONMENTAL CONDITIONS	Material	Thermoplastic	
	Mass	0.8Kg	
	Protection Degree	IP-40 for front panel and IP-20 for enclosure	
	Operation Temperature	-5 to 55°C (23 to 131°F)	

DIMENSIONS (mm)



How to Specify:



Standard Model: (Example)

K03PF 1 1 5 1 3 1 0 0

Power Factor Controller {Protection Degree – Standard} {Voltage Input 500Vac} {Current Input 5Aac} {Frequency 50/60Hz} {Power Supply - 190 a 260Vac} {RS-485} {Standard – Terminal Blocks} {Modbus-RTU}

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For correct utilization of the product, the User Manual must be consulted before its installation or operation.
Some items presented here may be optional, being necessary the correct product specification by their code.

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