Ziegler

Redefine Innovative Metering

Technical Datasheet

ZPC PC12 | PC08

POWER FACTOR CONTROLLER

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POWER FACTOR CONTROLLER

Power factor controller for reactive power compensation. It controls external reactive power element (preferably a capacitor) to meet reactive demand of load.

ZPC PC12 – 144 x 144 mm, Intelligent control with 6 / 8 / 12 Relay Output

ZPC PC08 – 96 x 96 mm, Intelligent control with 4 / 6 / 8 Relay Output

Product Features

- 16 x 2 LCD display
- Onsite fully programmable : Target PF, No. of Banks, Connecting & Disconnecting time, kVAr Value & Switching threshold
- 1 Relay output (Over V & I, harmonics V & I, Under V & I, Frequency faults, Over/under compensation)
- Measure & display voltage, current, frequency, power, energy, demand, % THD & Individual Harmonics up to 31, RPM, Run hours, On hours, No. of interruption
- Storage of Min Max (V, I & P) & Display Bank Switching Count / Operation Time / Value
- Accuracy Class : 1%
- System Fault(PF, Bank Status)
- RTC (Real Time Clock) – Optional
- MODBUS RS 485 communication – Optional

Technical Specifications

Input Voltage	
Nominal Input Voltage	240 V (30V – 550VAC)
Nominal Frequency	50 or 60 Hz
Nominal input Voltage burden	< 0.2 VA approx. per phase
Overload Capacity	2 x UN for 1 second, repeated 10 times at 10 second intervals
Input Current	
Nominal Input Current	0-1 / 0-5 A AC (2 mA measuring starting current , 10 mA operating current , Max 6 Amp)
Nominal Frequency	50 or 60 Hz
Nominal input Voltage burden	< 0.6 VA approx. per phase
Overload Capacity	1.2 x IN continuously 20 x IN for 1 second, repeated 5 times at 5 minute intervals

Output Data	
No. of Outputs	4 / 6 / 8 – ZPC PC08, 6 / 8 / 12 – ZPC PC12
Alarm output	1
Target PF range	0.8 Ld to 0.8 Lg
Switching Threshold	30 to 100 %
Switch-in or Off -time (Connecting Time / Disconnecting Time)	10 to 1800 Sec
Discharge time	60 to 1800 Sec

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Protection & Alarms	Limits	Default Trip values	Restore values
Under-voltage	75 - 90 % of V nom	85%	3% + trip value
Over-voltage	105 -115 % of Vnom	115%	2% - trip value
Under-Frequency	2 -10 % of Freq-Nom	6%	1 % of Freq-Nom
Over-Frequency	2 -10 % of Freq-Nom	6%	1 % of Freq-Nom
Under-current	1 - 3 % of CT primary	2%	1% of CT primary + trip value
Over-current	60 -120 % of CT primary	110%	1% of CT primary - trip value
V-thd	1 - 25 %	7%	2%
I-thd	1 - 99 %	7%	2%
Temperature	-	60°C	55°C
Overcompensation / Out of bank	Threshold x Min CkVAr	Threshold x Min CkVAr	Demand kVAr > Min CkVAr

Power Supply	
Auxiliary Supply	110 V AC to 550 VAC (Burden : < 13 VA approx) 40 to 70 Hz

Display Parameters

- ❑ Voltage , Current & Frequency
- ❑ Power (kW, kVAr & KVA)
- ❑ Power Factor & Bank Status
- ❑ THD % & Individual Harmonics up to 31st
- ❑ Energy (kWh, kVArh & kVAh)
- ❑ Demand (A, kW & kVA)
- ❑ System Fault(PF, Bank Status)
- ❑ Min Max (V, I & P)
- ❑ Bank Switching Count / Operation Time / Value

Onsite Programmable

- ❑ PFC parameters :
- ✓ Number of banks
- ✓ Bank kVAr value
- ✓ Connecting & disconnecting time
- ✓ Discharge time
- ✓ Maximum switching kVAr
- ✓ Switching threshold,
- ✓ Target PF
- ❑ System Parameters : Voltage & Current (CT/PT ratio)
- ❑ Display : Contrast, Auto Scroll, Backlit

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Accuracy	
Voltage	± 0.5% of Nominal value
Current	± 0.5% of Nominal value
Frequency	± 0.15% of mid frequency
Active Power	± 1.0 % of Nominal value
Re-Active Power	± 1.0 % of Nominal value
Apparent Power	± 1.0 % of Nominal value
Active energy (kWh)	± 1.0 %
Re Active energy (kVArh)	± 1.0 %
Apparent energy (kVAh)	± 1.0 %
Total Harmonic Distortion	± 1.0 % of Applied value
Reference conditions for Accuracy	
Ambient temperature	23°C +/- 2°C
Input signal frequency	50 or 60Hz
Input waveform	Sinusoidal
Auxiliary supply voltage	Rated Value ±1%
Auxiliary supply frequency	Rated Value ±1%
Voltage Range	50... 100% of Nominal Value. 60... 100% of Nominal Value for THD.
Current Range	10... 100% of Nominal Value. 20... 100% of Nominal Value for THD.
Power	Cos phi / sin phi = 1 for Active / Reactive Power & Energy. 10... 100% of Nominal Current & 50... 100% of Nominal Voltage.
Temperature coefficient :(for rated value range of use (0…50°C))	0.05%/°C for Voltage (50... 120% of rated value) and 0.05%/°C for Current (10... 120% of rated value)

Applicable Standards	
EMC	IEC 61326-1:2012, Table 2
Accuracy	IEC 62053-21
IP for water & dust	IEC60529
Pollution degree	2
Installation category	III
High Voltage Test	2.2 kV AC, 50Hz for 1 minute between all electrical circuits

Environmental	
Nominal range of use	-10 to +60°C
Storage temperature	-20 to +65°C
Relative humidity of annual mean	0... 90% non condensing
Warm up time	Minimum 3 minute

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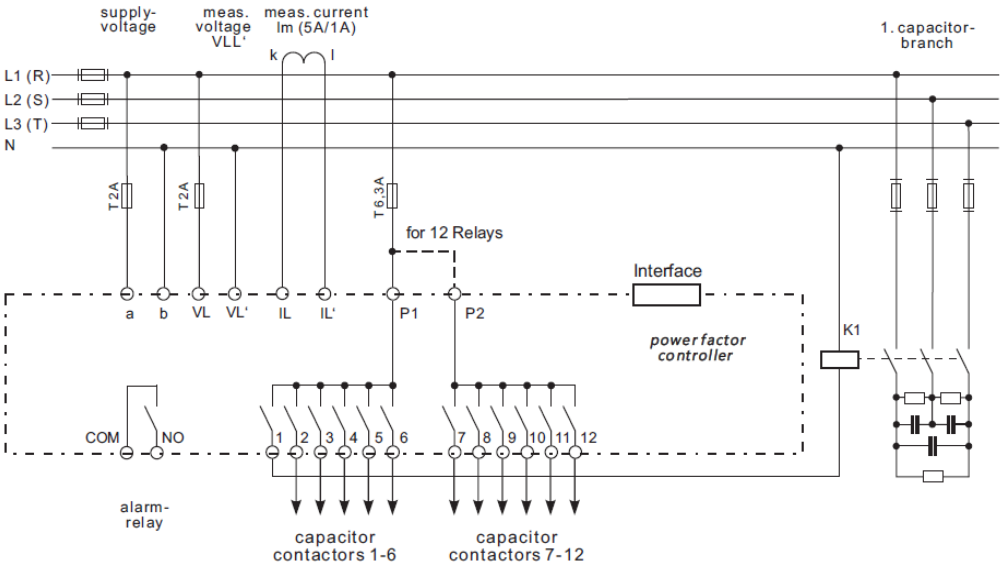
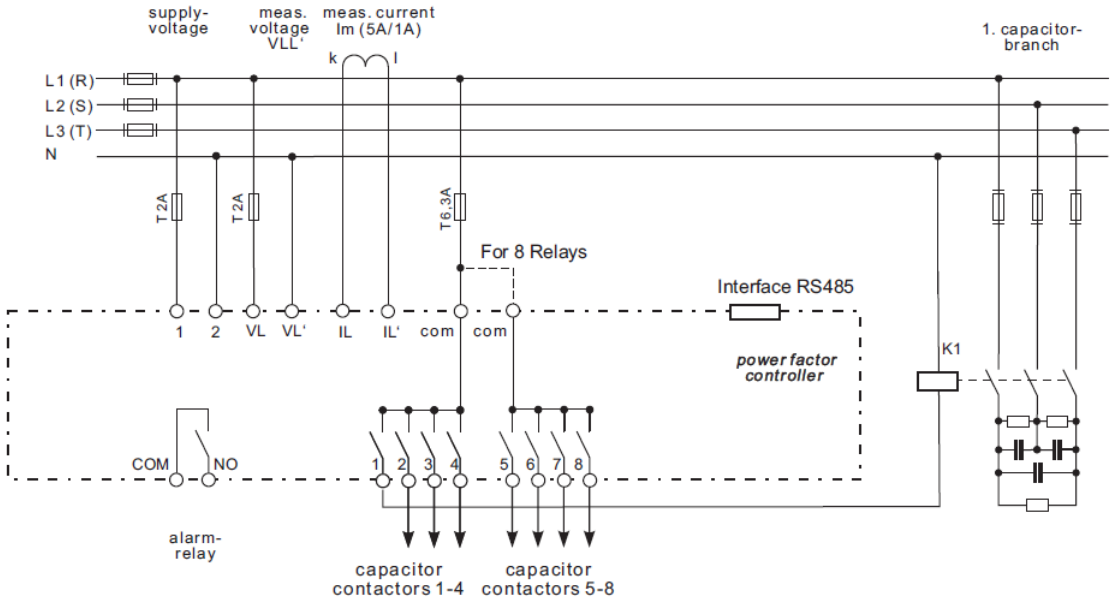
Electrical Connections

1. ZPC PC12



2. ZPC PC08



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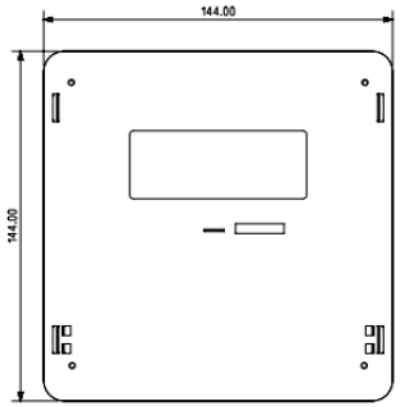
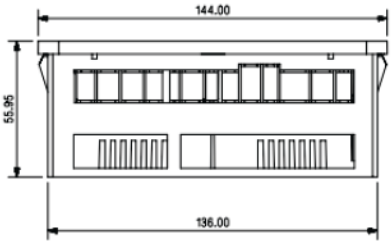
Dimensions (In mm)

1. ZPC PC12 – 144 x 144mm



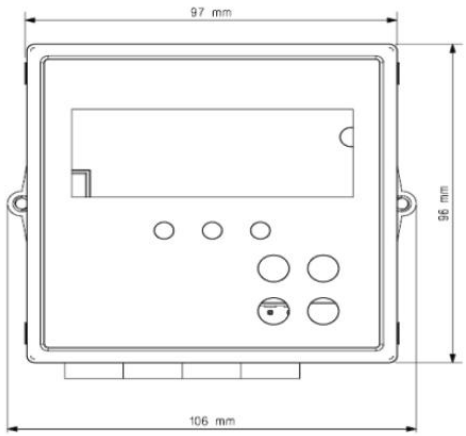
FRONT VIEW

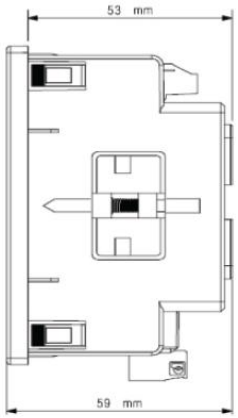


SIDE VIEW

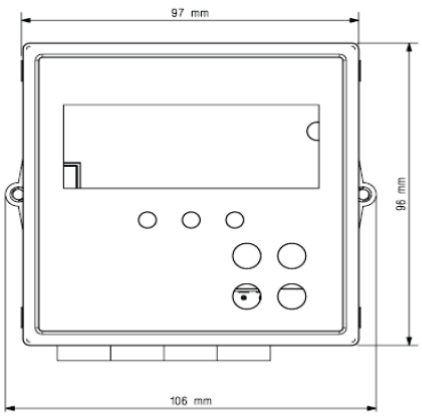
2. ZPC PC08 – 96 x 96mm

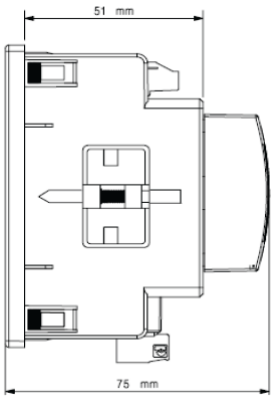
Without Add-on





With Add-on





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POWER FACTOR CONTROLLER

Ordering Information	**(√)**
Model	
ZPC PC12	
ZPC PC08	
Relay Output	
4 Steps (Applicable for PC08 only)	
6 Steps	
8 Steps	
12 Steps	
Optional Modules	
MODBUS RS 485 communication	
RTC	

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