CHORDN Power Analyzer / Energy Management

PMA96-C

CE

- Power analyzer.
- Energy measurements: kWh and kvarh.
- System variables and phase measurements: VL-L, VL-N, VL-Lavg, VL-Navg, VL-N alarm, AL, An, A alarm, PF, PF Σ, W, W Σ, var, var Σ, VA, VA Σ, Hz.
- Accuracy ± 0.5 F.S.(current/voltage).
- LCD display instantaneous variables and energies.
- Class 1 (active energy).
- Class 2 (reactive energy).
- Power supply: 180 to 240Vac,18 to 60Vac/dc, 90 to 160ac/dc.
- 4 Digital input.
- 2 Relay alarm output(current/voltage).
- Protection degree (front): IP40.
- RS485 serial port.
- Front dimensions: 96x96mm.
- Cut-out dimensions: 91.5x91.5mm.

Type Selection

PMA96 - C - 2RA - 4DI - S1 - C1

PMA96	Basic model
C	Special code
2RA	2 Relay alarm output
4DI	4 Digital Input
S1	RS485 port
C1	Power supply C1: 180-240Vac, L1: 18-60VAC/DC, H1: 90-160VAC/DC

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Input specifications

Rated inputs

Voltage	3x220(400)Vac
Current(CT)	5A
Frequency	40-65Hz
Digital input	4
Contact read. Volt	5Vdc
Contact read. Current	10mA Max
Sampling rate@ 50Hz	1400 samples/s
Sampling rate@ 60Hz	1700 samples/s
Init time	1s
Display	LCD
Display Read-out for counter	9999.99
Display refresh time	700ms
Measurements Display	Current, voltage, power, power factor, frequency, energy

Rated outputs

Alarm output(current/voltage)	2
Relay contact rating@current max	5A
Relay contact rating@Voltage max	230Vac

Accuracy

Phase-phase voltage	±1.5% FS
Phase-neutral voltage	±0.5% FS
Current	±0.5% FS
Neutral current	±0.5% FS
Active power	±1% FS
Reactive power	±2% FS
Apparent power	±1% FS
Active energy	Class 1
Reactive energy	Class 2
Frequency	±0.1Hz

Power Supply Specifications

Auxiliary power supply		
		180-240Vac
		18-60Vac/dc
		90-160Vac/dc
Power consumption		3.5W

RS485 Serial Port Specifications

Type	Multidrop bidirectional (static and dynamic variables)
Connections	2 or 4 wires, max. distance 1200m, termination directly on the instrument
Addresses	1 to 255, key-pad selectable
Protocol	MODBUS
Data (bidirectional)@Dynamic (reading only)	System, phase variables and energies
Data (bidirectional)@Static (writing only)	All configuration parameters
Baud-rate	1200bit/s, 2400bit/s, 4800bit/s, 9600bit/s, 19200bit/s
Data format	1 bit distart, 8 data bit, no parity, 1 stop bit

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Interface functions

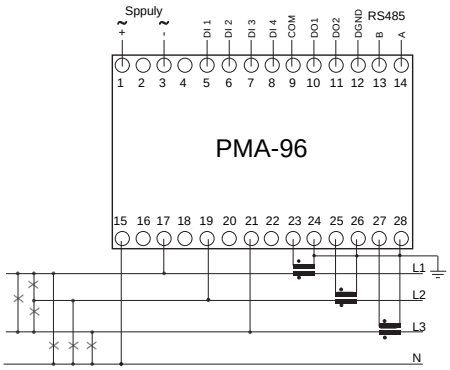
Password	
1st level	Password from 0 to 9999, no protection
2nd level	Password from 0 to 9999, all data are protected
System selection	3-phase with N 3-phase 2-phase Single phase
Transformer ratio(CT)	1 to 10000
Transformer ratio(PT)	1 to 10000
Alarms outputs (on request) @current	0-6A
Alarms outputs (on request)@Voltage	0-600Vac
Displaying 3-phase system with neutral	Page 1: V L12, V L23, V L31, V L-Lavg Page 2: V L1, V L2, V L3, V L-Navg Page 3: A L1, A L2, AL3, An Page 4: PF L1, PF L2, PF L3, PF∑ Page 5: Hz, PF∑ Page 6: VA L1, VA L2, VA L3, VA∑ Page 7: W L1, W L2, W L3, W∑ Page 8: var L1, var L2, var L3, var∑ Page 9: var∑, W∑ Page 10: KWh, Kvarh Page 11: Addr and baud Page 12: Ratio PT Page 13: Ratio CT Page 14: presen system

General Specifications

Insulation (for 1 minute)@mesuring inputs and power supply	4000VAC/500VDC
Insulation (for 1 minute)@mesuring inputs and RS485	500VAC/DC
Insulation (for 1 minute)@power supply and RS485	4000VAC/500VDC
Installation category	Cat. III (IEC 60664, EN60664)
Dielectric strength	4000 VAC (for 1 min)
Emissions	EN50084-1(class A)
Immunity	EN61000-6-2(class A)
Safety standards	IEC60664, EN60664
Approvals	CE
Connections	Screw
Recommended tightening torque	2N.m
Max cable cross sect	2.5 mm^2
Housing	ABS self-extinguishing: UL 94 V-0
Mounting	Panel
Max cable cross sect@Panel	IP40
Max cable cross sect@Connections	IP20
Operating temperature	-10 to 50°C
Storage temperature	-30 to 50°C
Ambient humidity	RH < 90% non condensing
Dimensions (WxHxD)	96x96x63mm
Cut-out dimensions	91.5x91.5mm
Weight	Approx.400g

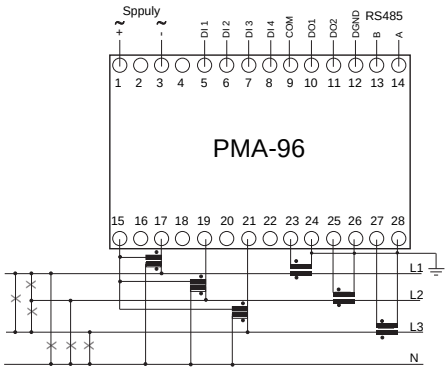
Wiring diagrams

Fig. 1



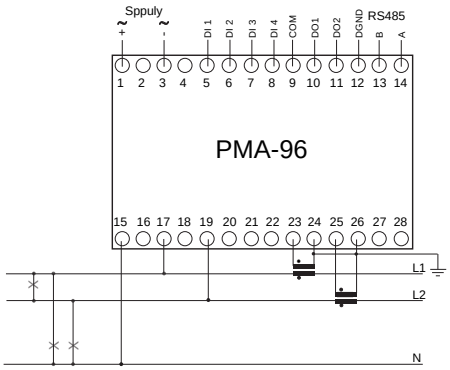
CT connection

Fig. 2



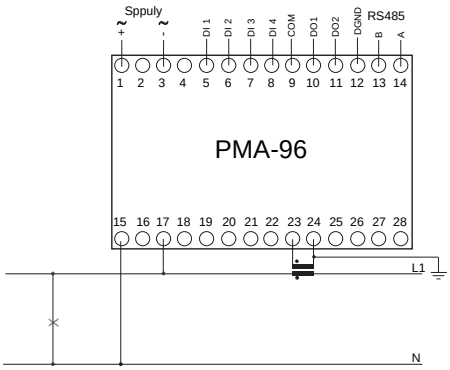
3CT and 3PT connection

Fig. 3



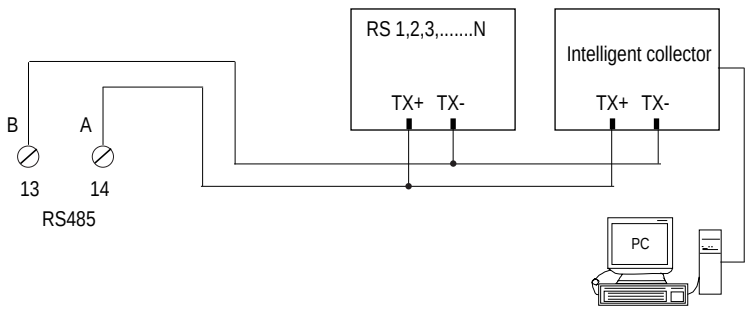
2-phase connection

Fig. 4



1-phase connection

Fig. 5



Disconnect power source before wiring.
DO1 is the voltage alarm output terminal and DO2 is the current alarm output terminal.
In order to make wiring secure and steady, the torque of wiring terminal should be kept between 2Nm and 6Nm.

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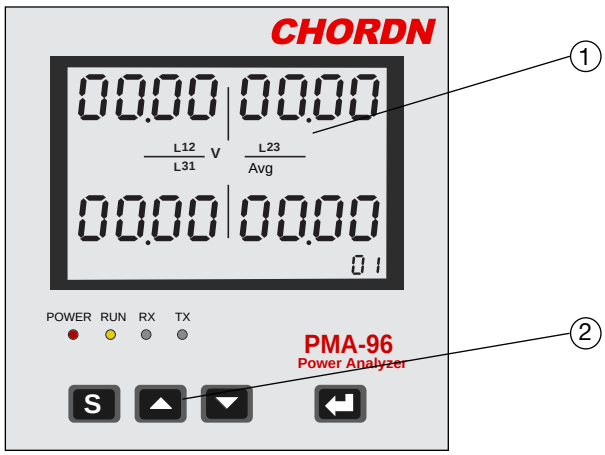
Font Panel Description



1. Display
LED-type with alphanumeric indications to:
- display configuration parameters;
- display all the measured variables.

2. Key-pad
To program the configuration parameters and the display of the variables.

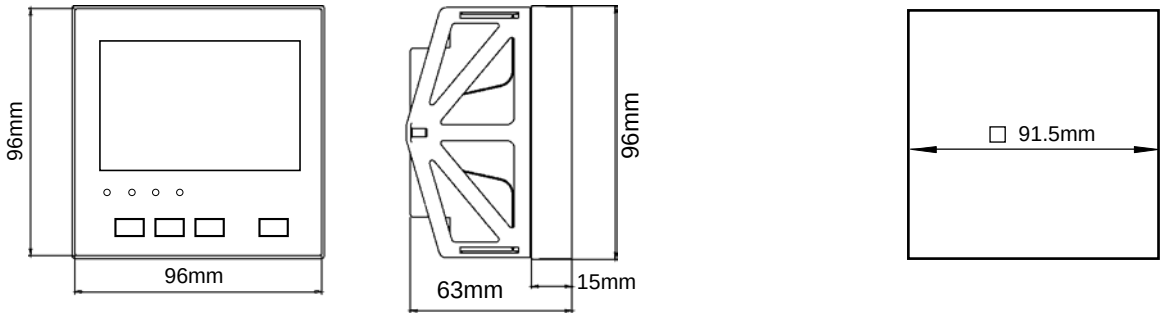
S

Key to enter programming and confirm selections;

Keys to:
- programme values;
- select functions;
- display measuring pages.

Confirm selections;

Dimensions and Panel Cut-out



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