



# CT250 Power Meter

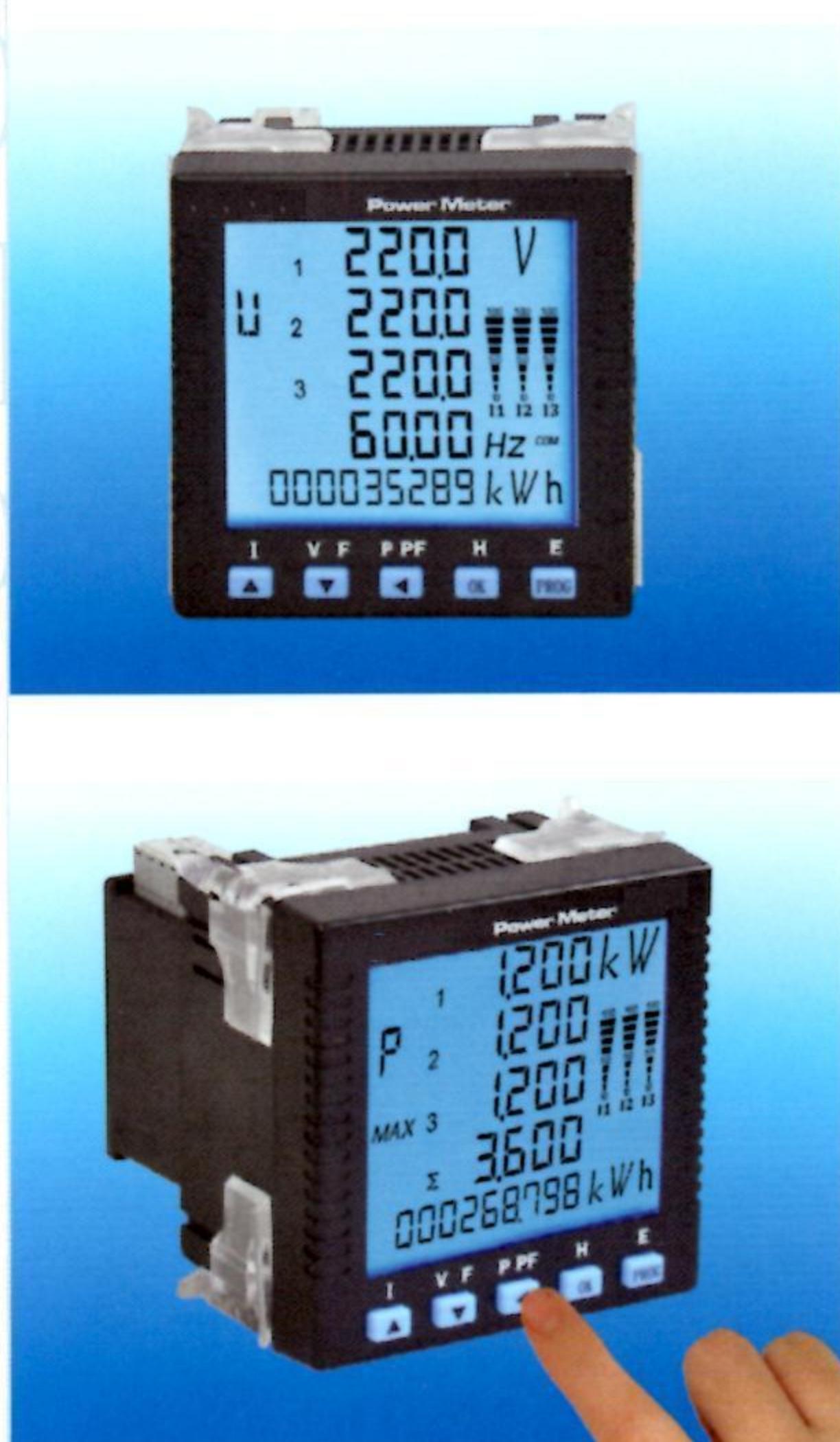
Measurement

Monitoring

Analysis

Communication

# Power Meter



## ARTISTIC SCREEN

A clear and easy-to-read backlit LCD screen at a wide visible angle can be read at the different installed sites.

## Features

- Energy-saved protection mode
- Large legend texts shown on backlit LCD
- Plug-in output modules
- Fully programmable VT&CT ratios
- True rms measurement
- THD measurement up to 31st harmonic
- Individual current/voltage harmonics
- Relay contact, analog and pulse outputs
- Modbus RTU 485 communication
- DIN 96x96 mm enclosure
- Digital inputs for input detecting status
- Actual demand/Max demand current/active power
- Vertical bargraph indication on the measured current

## DIRECT READING

A quick browse through the measured electrical parameters can be accessed.

### Characteristics

Dielectric strength

Operating temperature

Storage temperature

Temperature coefficient

Max. humidity

IP Enclosure

Sampling time

Measurements

Actual demand

Max.demand

Demand time of period

Total harmonic distortion

Harmonic analysis

Auxiliary power supply

IEC 688, AC 2.3KV 1 min.  
between input/output/power

AC 3KV 1 min. between all terminals/case

0 ~ 60°C

-10 ~ 70°C

≤100PPM/°C

95%

IP 52 (Front plate)

IP 30 (Casing)

1 sec.

1 φ 2W, 1 φ 3W, 3 φ 3W, 3 φ 4W

Amp, Watt

Amp, Watt

1 ~ 60 min. (programmable)

up to 31st

Volt, Amp

AC/DC 85-265V

DC 20 -60V (Option)

### Accuracy

Current

0.2 %

Voltage

0.2 %

Active power

0.5 %

Reactive power

0.5 %

Apparent power

0.5 %

Power factor

0.5 %

Frequency

0.05 %

Active energy

0.5 % (IEC 62053-22, class 0.5S)

Reactive energy

2 % (IEC 62053-23, class 2)

Harmonic

2 %

### Accuracy performance range

Current range

0.2 ~ 120 %

Voltage range

0.6 ~ 120 %

Power & energy range

Amp. 0.2 ~ 120%, Volt. 0.6 ~ 120 %

Power factor range

$\cos\theta$  ( $\sin\theta$ ) 0.5 ~ 1

Frequency range

45 ~ 70 Hz

Distortion level

from 10% to 120% (Volt)

### Input voltage

Voltage range (line to line)

AC 3 ~ 520V

Voltage range (line to neutral)

AC 2 ~ 300V

Maximum overload

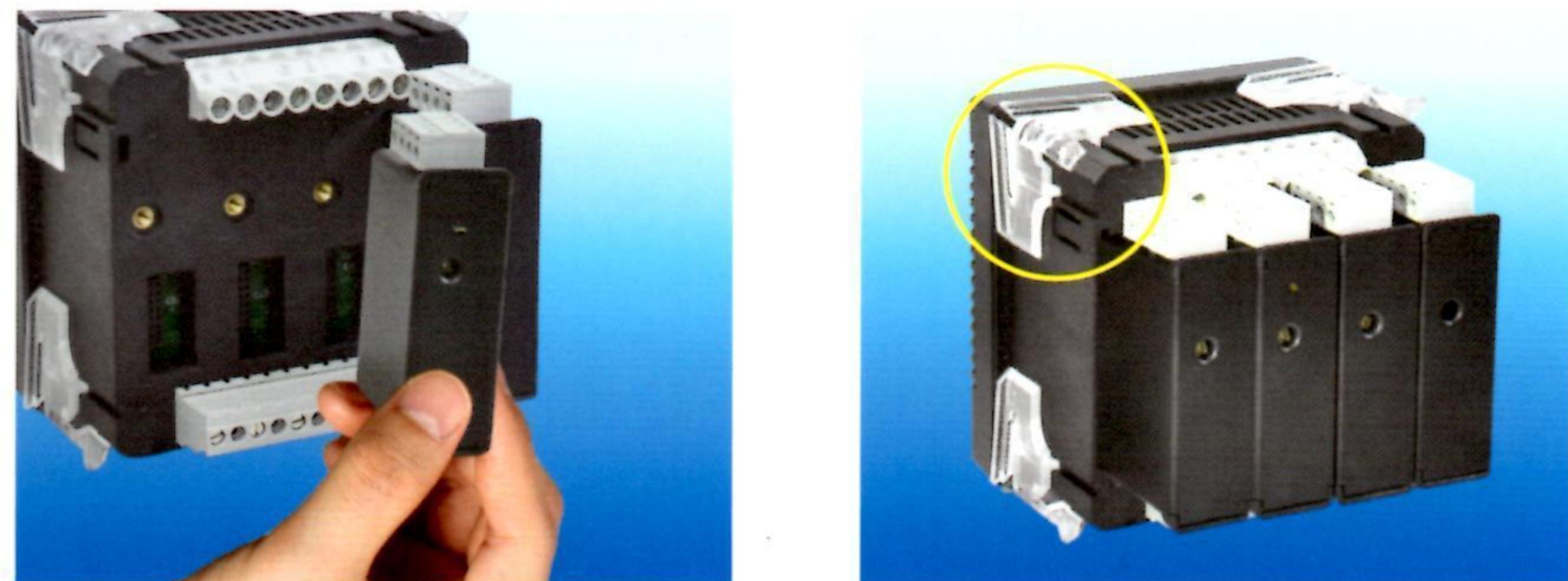
AC 750V

Input impedance

$\geq 800K\Omega$

## Benefits

User-friendly  
Cost effective  
Output modules on actual demand  
Direct access to the measured display  
Measurement in 1P/3P3W/3P4W systems



## Standards

IEC 62053-22	IEC 61000-4-8
IEC 61000-4-2	IEC 61000-4-11
IEC 61000-4-3	IEC 55011
IEC 61000-4-4	IEC 61326-1
IEC 61000-4-5	IEC 61000-3-2
IEC 61000-4-6	IEC 61000-3-3

## Certification

CE

## EXTENDED MODULES

A extended function can flexibly be requested for installation in a way of the designed-pluggable modules.

## FASTENED INSTALLATION

CT250 is designed to be attached with flexible mounting clips for a secure installation onto all types of panels without using any hand tool.

## Input current

Current range  
Maximum overload

Input burden  
Isolation  
Starting current

AC 5A (Standard) or 1A (Option)  
continuous AC 6A, AC 50A 5 sec.  
continuous AC 15A, AC 250A 1 sec. (Option)  
 $\leq 0.1\text{VA}$   
Each phase, AC 600V  
0.2 % F.S.

## Display

Format

Backlit LCD display  
4 rows of 4 digits (Electrical parameter measurements)  
One line of 9 digits (Energy)  
3 vertical bargraphs at % for current

## Pluggable modules (Option)

### Relay contacts (Module)

Energized value  
Alarm selected  
Setting point  
Max. installation  
Relay contact

1, 10, 100 , 1000 pulses for 1KWH or 1KVARH  
V, A, W, demand A, demand Watt, Hz, THD-I, THD-V  
2 programmable setting points  
2 pluggable modules  
AC 240V 5A, DC 24V 5A

### RS 485 Communication interface (Module)

Protocol  
Baud rate  
Address range  
Data format  
No. of meters  
Max. installation

MODBUS, RTU  
1200 ~ 38400  
1 ~ 255  
N.8.1, N.8.2, O.8.1, E.8.1  
Up to 32 meters via RS 485  
1 pluggable module

### Analog output (Module)

Output range  
Output resistance  
No. of outputs  
Max. installation

DC 4-20mA  
500 $\Omega$   
2 programmable parameters  
2 pluggable modules

### Digital input (Module)

Input detecting status on each module  
Input format  
Max. installation

Programming via RS 485 interface on CT250  
SPST contact  
2 pluggable modules

## Electromagnetic compatibility (EMC)

Electrostatic discharge  
Electromagnetic field immunity  
Electrical fast transient/burst immunity  
Surge immunity  
Immunity to conducted disturbances  
Power frequency magnetic field immunity  
Short interruptions and voltage variations immunity  
Harmonic current emissions  
Voltage changes, voltage fluctuations and flicker

IEC 61000-4-2  
IEC 61000-4-3  
IEC 61000-4-4  
IEC 61000-4-5  
IEC 61000-4-6  
IEC 61000-4-8  
IEC 61000-4-11  
IEC 61000-3-2  
IEC 61000-3-3

## PRODUCT CODE

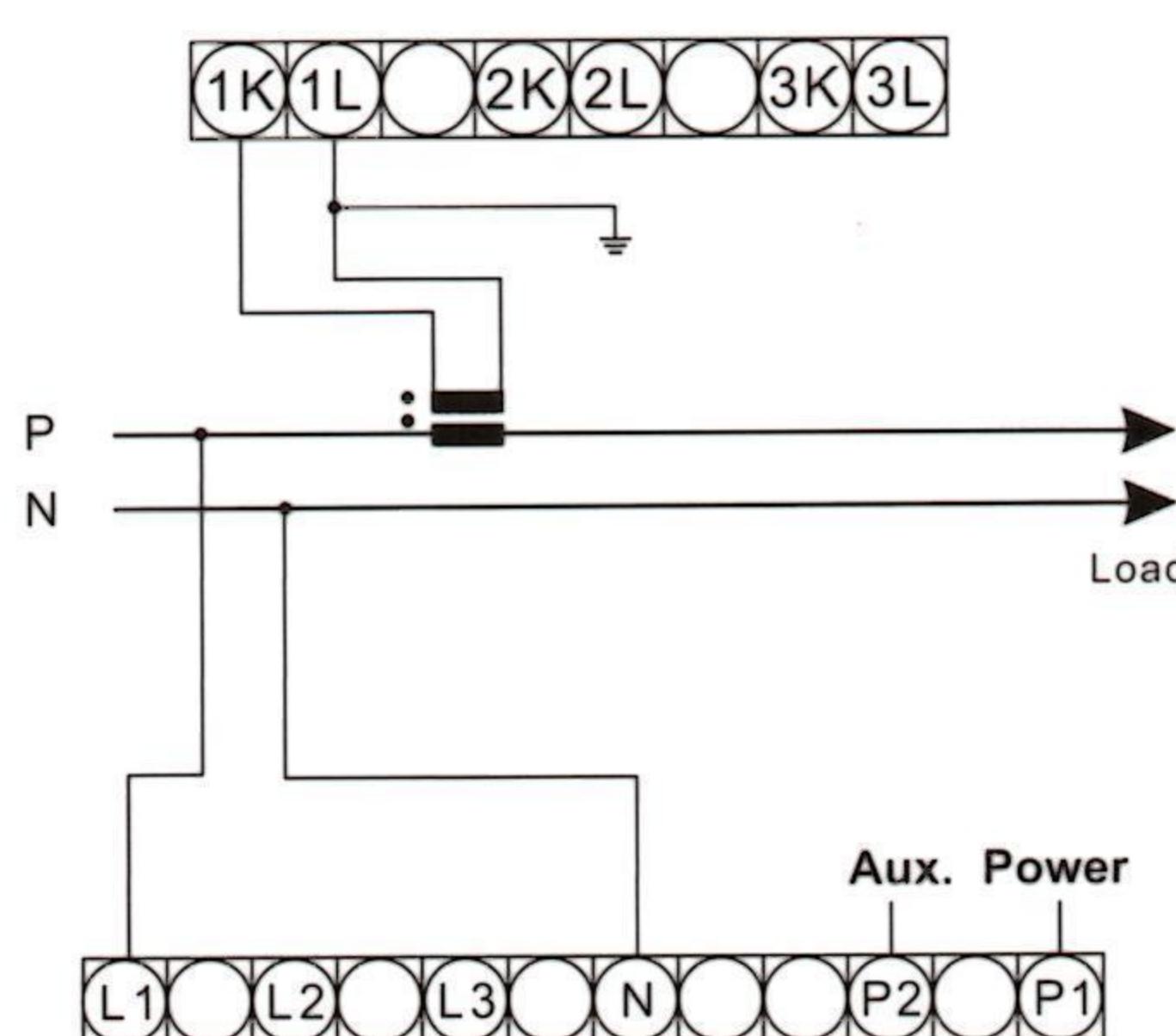
Product	Code No.
Power Meter	CT250

## Options

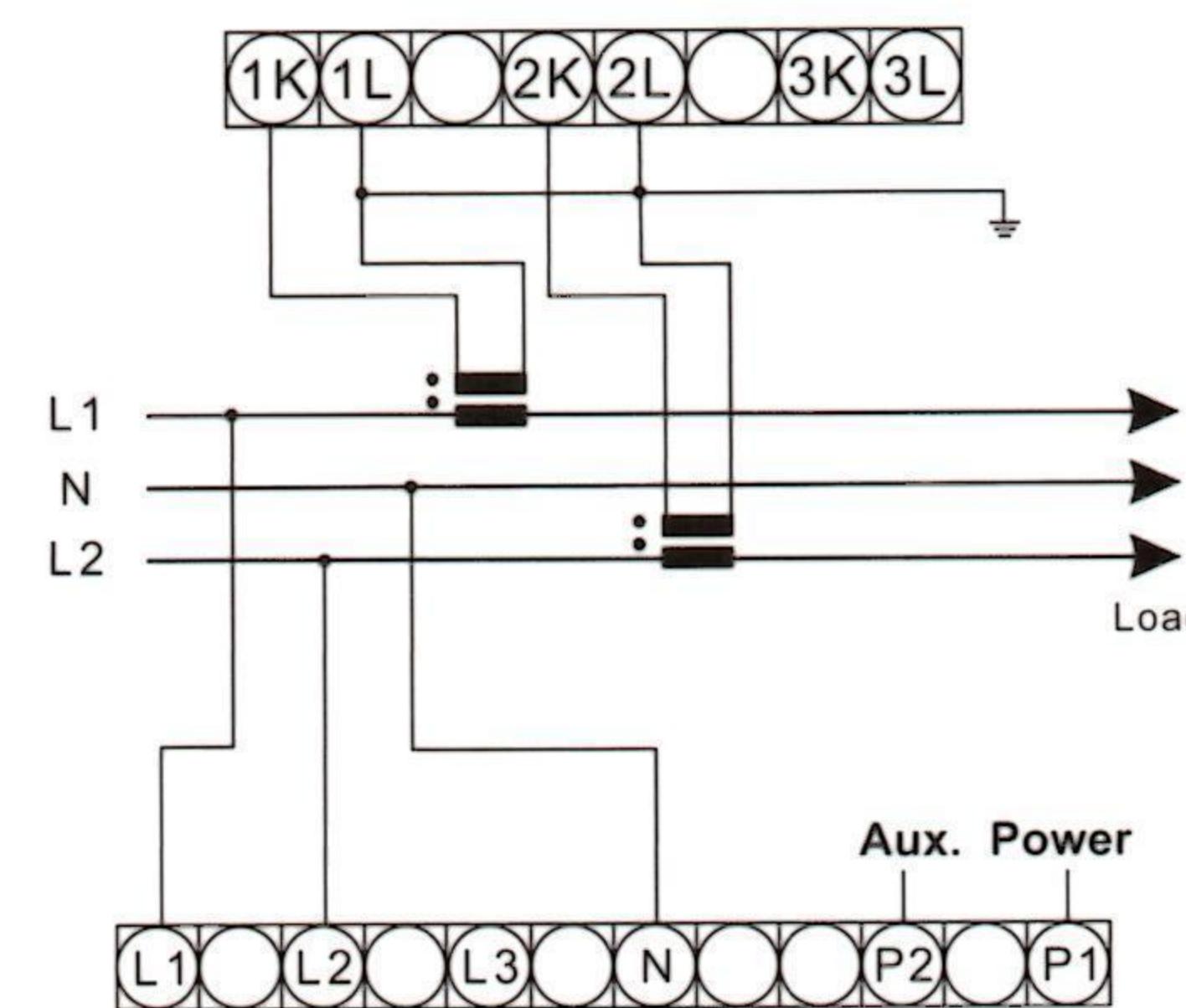
RS 485 interface	MD01
Relay contacts	MD02
Dual analog	MD03
Digital inputs	MD04

## CONNECTIONS

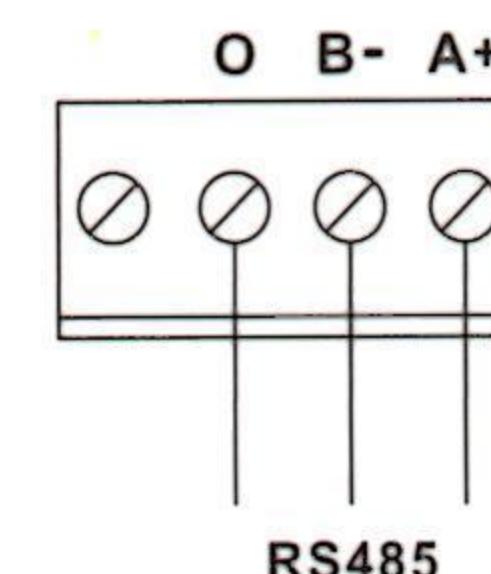
### 1 Phase 2 Wire



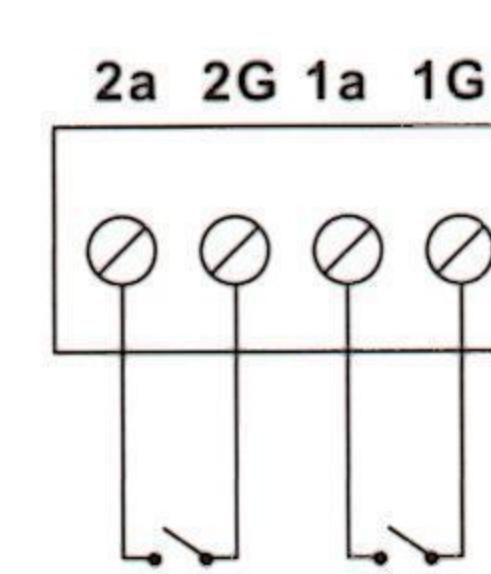
### 1 Phase 3 Wire



### RS485 Output

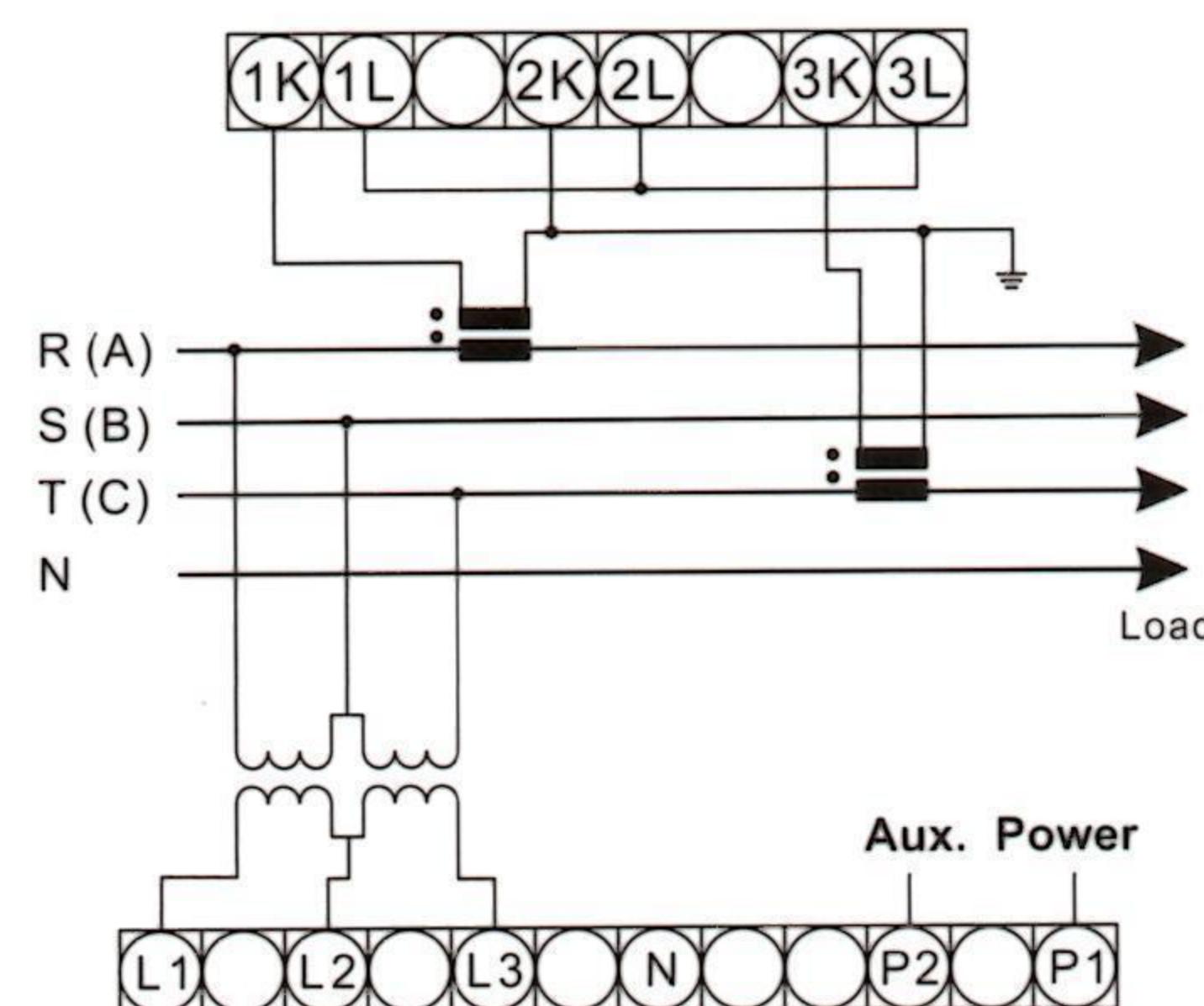


### Relay Contacts

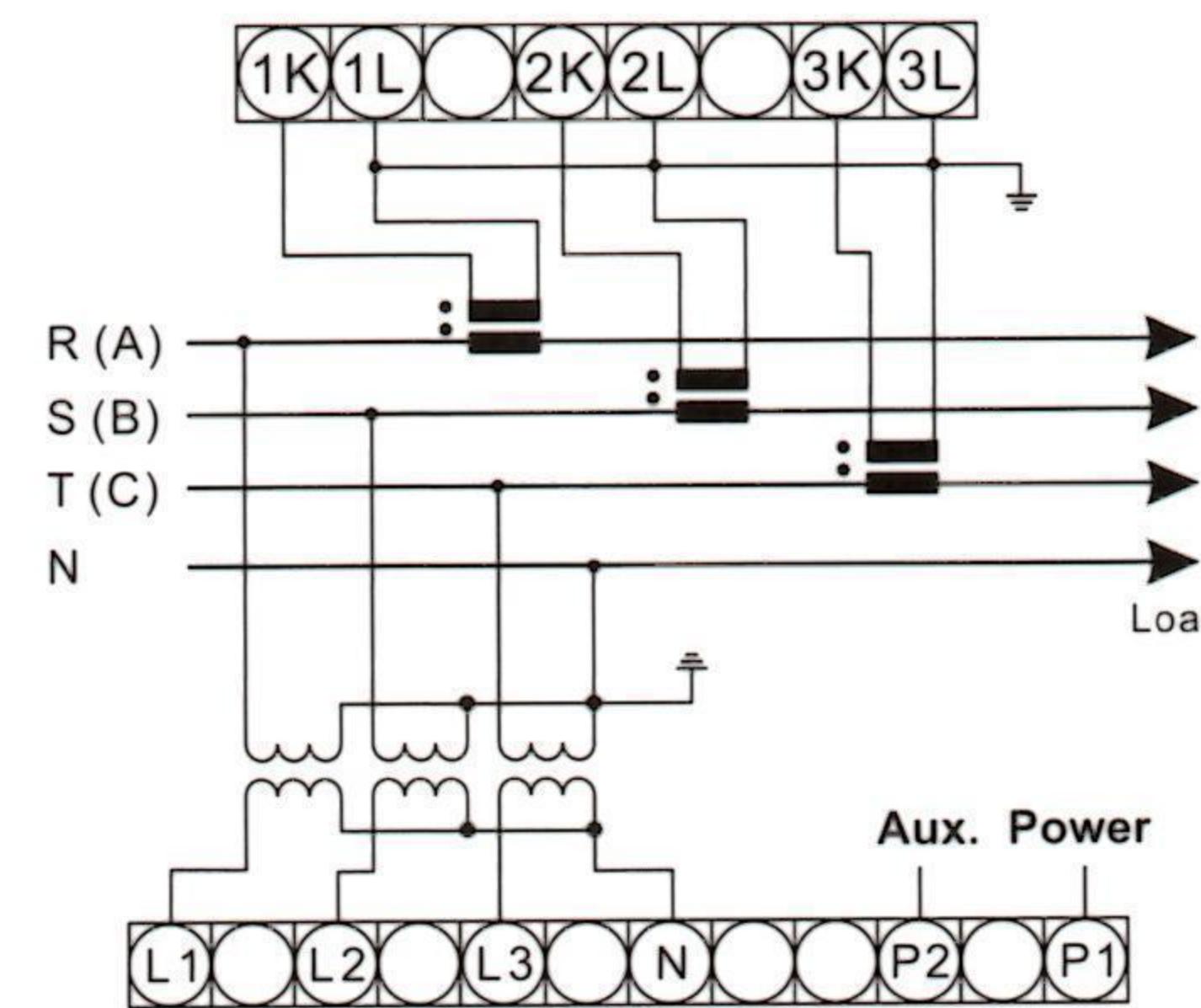


Alarm or Energy Output

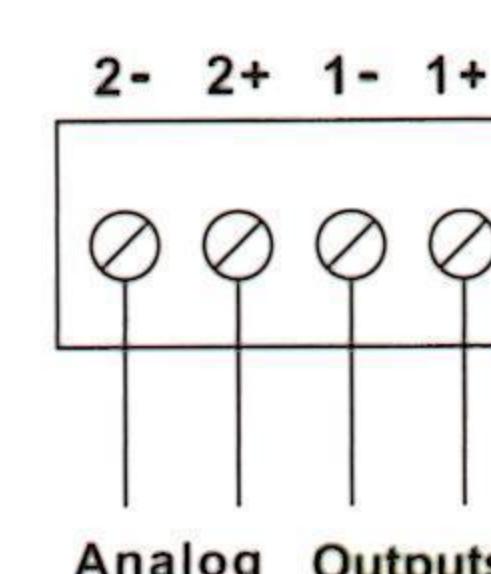
### 3 Phase 3 Wire (2CT)



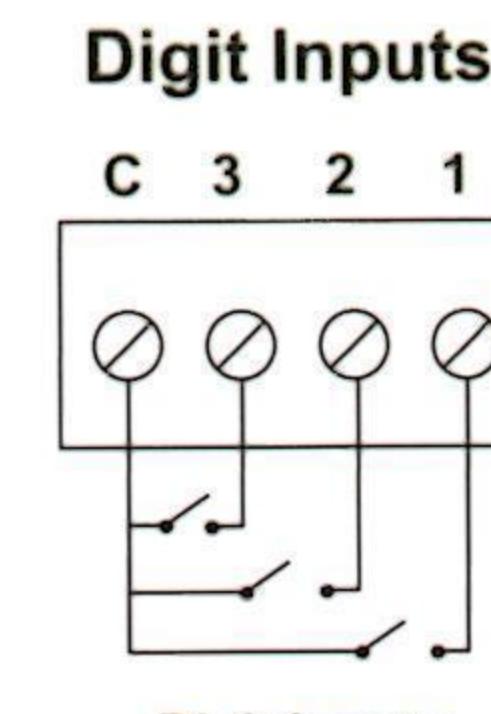
### 3 Phase 4 Wire



### Analog Outputs

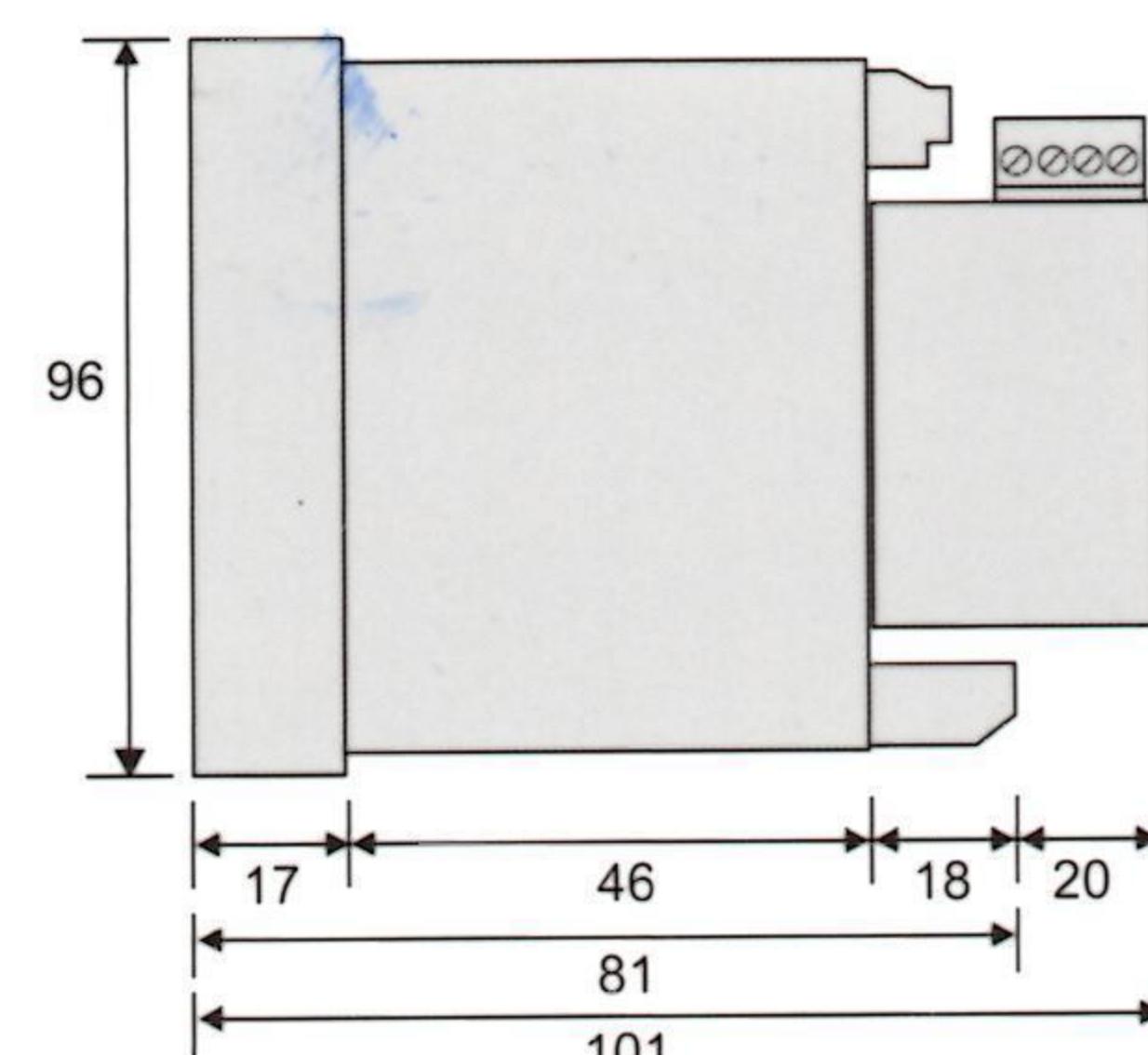
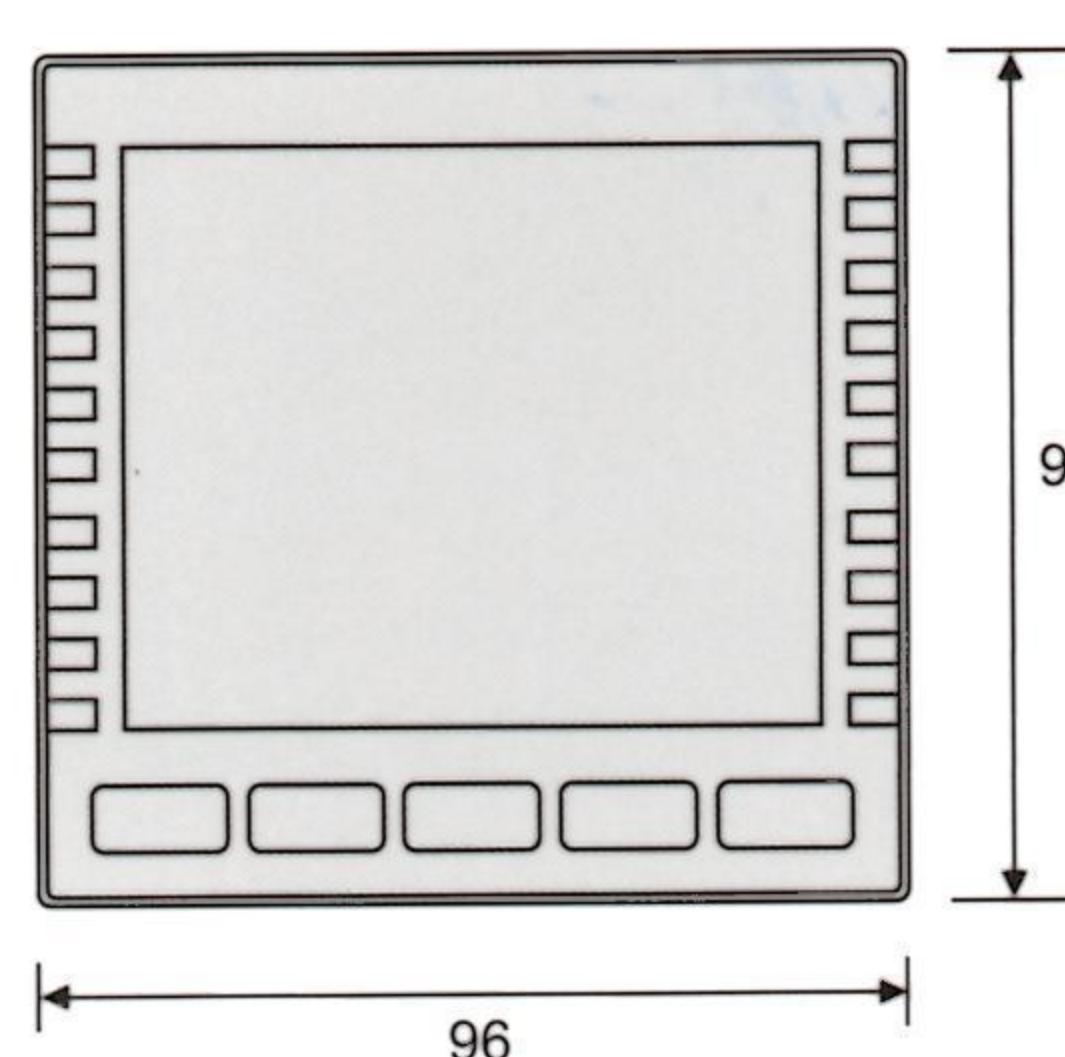


Analog Outputs

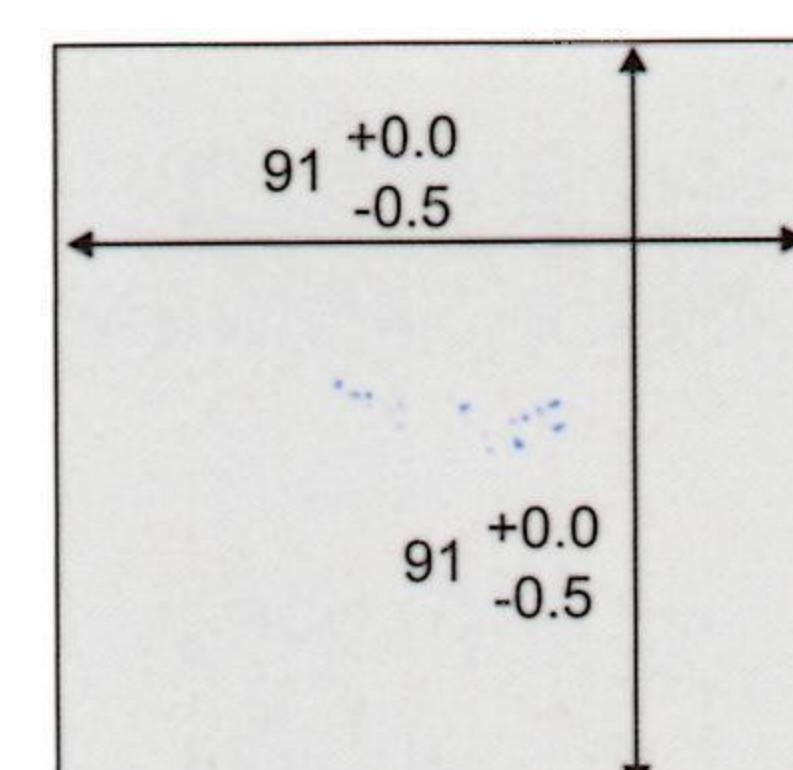


Digit inputs

## DIMENSIONS (Unit: mm)



## PANEL CUT-OUT



ISO 9001: 2008 Certified  
FM 40649