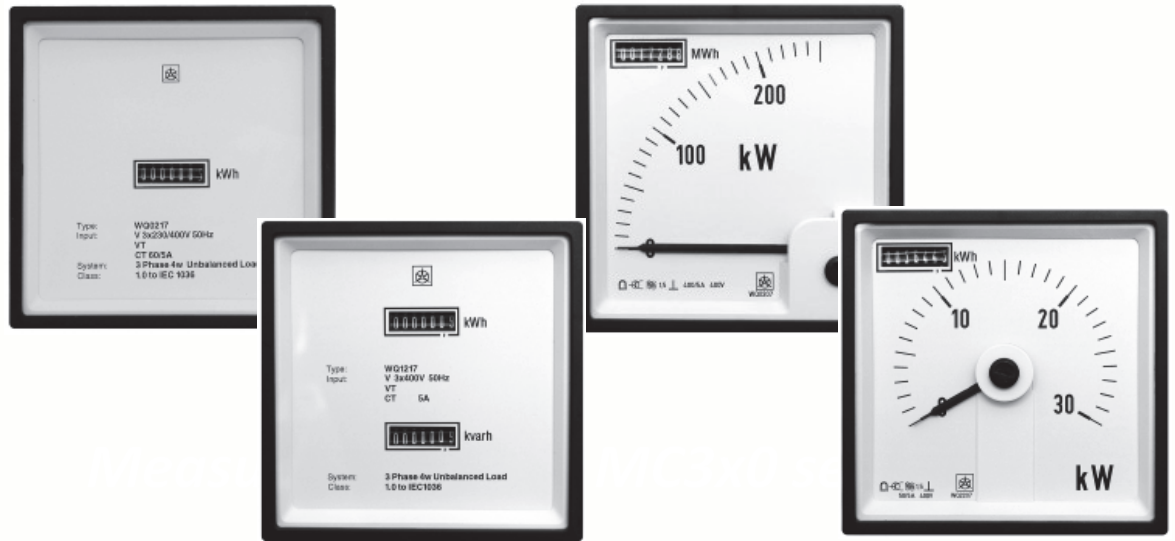


# PCI

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## *Energy Meters with Power Display*

### **Energy Meter - WQ0217 & WQ1217**

### **Energy Meter with analogue pointer - WQ0207 & WQ2207**

- 7 digits electromechanical register
- Up to 2 registers
- Momentary power or power factor display (WQ0207 –90° and WQ2207 –240° only)
- Standard 96 X 96 DIN case
- Accuracy class EN 62053-21 class 1
- Protective cover for terminal

Energy sector



## PROPERTIES

- Energy meter
- 7 digits electromechanical register
- Up to 2 registers
- Momentary power or power factor display (WQ0207 – 90° and WQ2207 –240° only)
- Standard 96 X 96 DIN case
- Exchangeable scale
- Accuracy class EN 62053-21 class 1
- Input frequency range from 16 Hz to 400 Hz (external power supply only)
- Up to 2 pulse outputs (option)
- AC or Universal power supply
- Automatic range of nominal current (max. 12.5A) and voltage
- Protective cover for terminal
- USB service port (option)

## DESCRIPTION

The meter is intended for energy measuring in single-phase or three-phase electrical power network. The meter measure according to the principle of fast sampling of voltage and current signals. A built-in microprocessor calculates energy, power and power factor from the measured signals.

## USE

The meter is intended for monitoring and measuring electrical quantities of three-phase electric-energy distribution system. Meter record energy in all four quadrants. Up to 2 pulse outputs are available for measurements control.

## COMPLIANCE WITH STANDARDS:

Standard EN	Description
61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use
60529	Degrees of protection provided by enclosures (IP code)
60051-1	Direct acting indicating analogue electrical measuring instruments and their accessories
61326	Electrical equipment for measurement, control and laboratory use - EMC requirements
62052-11*	Electricity metering equipment – General requirements, tests and test conditions
62053-21*	Electricity metering equipment (a.c.) Particular requirements
62053-31*	Electricity metering equipment (a.c.) Particular requirements

\* – Partial compliance

## DESCRIPTION OF PROPERTIES

### MEASURANDS

- Measurements of energy in all 4 quadrants
- Measurements of momentary active, reactive power and power factor (only WQ0207 and WQ2207)

### ELECTROMECHANICAL REGISTER

The meter is available with one or with two (WQ1217 only) electromechanical registers. Registers have 7 digits.

### ANALOGUE POINTER

Two types of pointers are available WQ0207 have 90° analogue pointer. WQ2207 have 240° analogue pointer. Pointer can show momentary active or reactive power or power factor.

### OUTPUT MODULES

The meter is available without or with two pulse output modules. Available are relay or SO pulse output modules. Modules have three terminals.

### SUPPLY

Power supply connection of the meters is adaptive. Standard is AC power supply enables connection of the meter to AC voltage (57.7 & 63.5 / 100 & 110 / 230 / 400). Option is a universal power supply enables connection of the meter to DC (120–300 V) or AC voltage (85–264 V / 40-65 Hz).

### USB SERVICE COMMUNICATION (OPTION)

Before use input voltage and power supply connection on the meter must be disconnected. For setting use MiQen software. Communication works only 1000 s after connection.

## TECHNICAL DATA

### EU DIRECTIVES:

Decree on electrical equipment designed for use within certain voltage limits **URLRS 53/00**

(Directive **2014/35/EU** on low voltage):

#### EN 61010-1

Safety requirements for electrical equipment for measurement, control and laboratory use, part 1: General requirements

Decree on electromagnetic compatibility (EMC)

#### URLRS 61/00

(Directive **2014/30/EU** on electromagnetic compatibility):

#### EN 61326-1

### SAFETY:

Protection class: **II**  
**600 V rms**, installation category **II**  
**300 V rms**, installation category **III**  
 pollution degree **2**  
 in compliance with **EN 61010-1**

Enclosure material: **PC/ABS**  
 Incombustibility-self-extinguishability,  
 complying with **UL 94 V-0**

Enclosure protection: **IP 52** (IP 00 for terminals)  
 in compliance with **EN 60529**

Cutting for installation: **92<sup>+0.8</sup> mm**

Converter mass: **max. 600 g.**

### AMBIENT CONDITIONS:

Temperature range of operation: **-10 to +55°C**

Storage temperature range: **-40 to +70°C**

Average annual humidity: **≤ 75% r.h.**

### INPUTS

Input signals	Current	Voltage
Nominal frequency range		50, 60 Hz
Measuring frequency range		16 – 400 Hz
Nominal value (I <sub>n</sub> , U <sub>n</sub> )	1 / 5 A	75, 120, 250, 500 V <sub>L-N</sub>
Maximal value	12.5 A	600 V <sub>L-N</sub>
Consumption	< 0.1 VA	< 0.1 VA

### POWER SUPPLY

Power supply	Universal	AC
Nominal voltage AC	85–264 V	57.7 & 63.5 / 100 & 110 / 230 / 400
Nominal frequency	40–65 Hz	40–65 Hz
Nominal voltage DC	120–300 V	–
Consumption	< 3 VA	< 3 VA

### REFERENCE CONDITIONS

Ambient temperature: **-10 ... 23 ... 55°C**

Voltage input: **+/- 20% U<sub>n</sub>**

Current input: **0 ... 100 % I<sub>n</sub>**

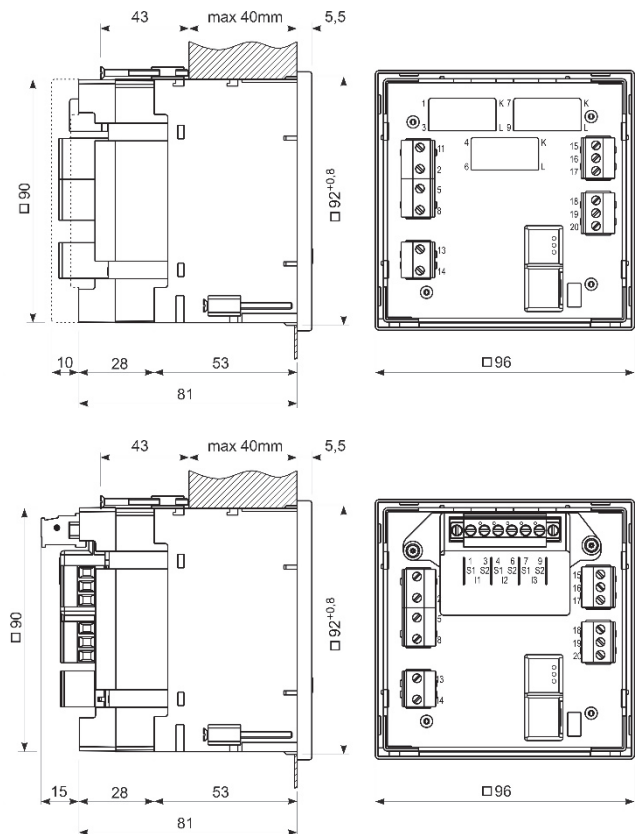
Active/reactive power, factor: **cos φ = 1 / sin φ = 1**

Waveform: **Sinus**

### ACCURACY

Measurand		Accuracy
Active, reactive and apparent power		1.5
Power factor (PF)		1.5
Active energy	EN 62053-21	Class 1
Reactive energy	EN 62053-23	Class 2

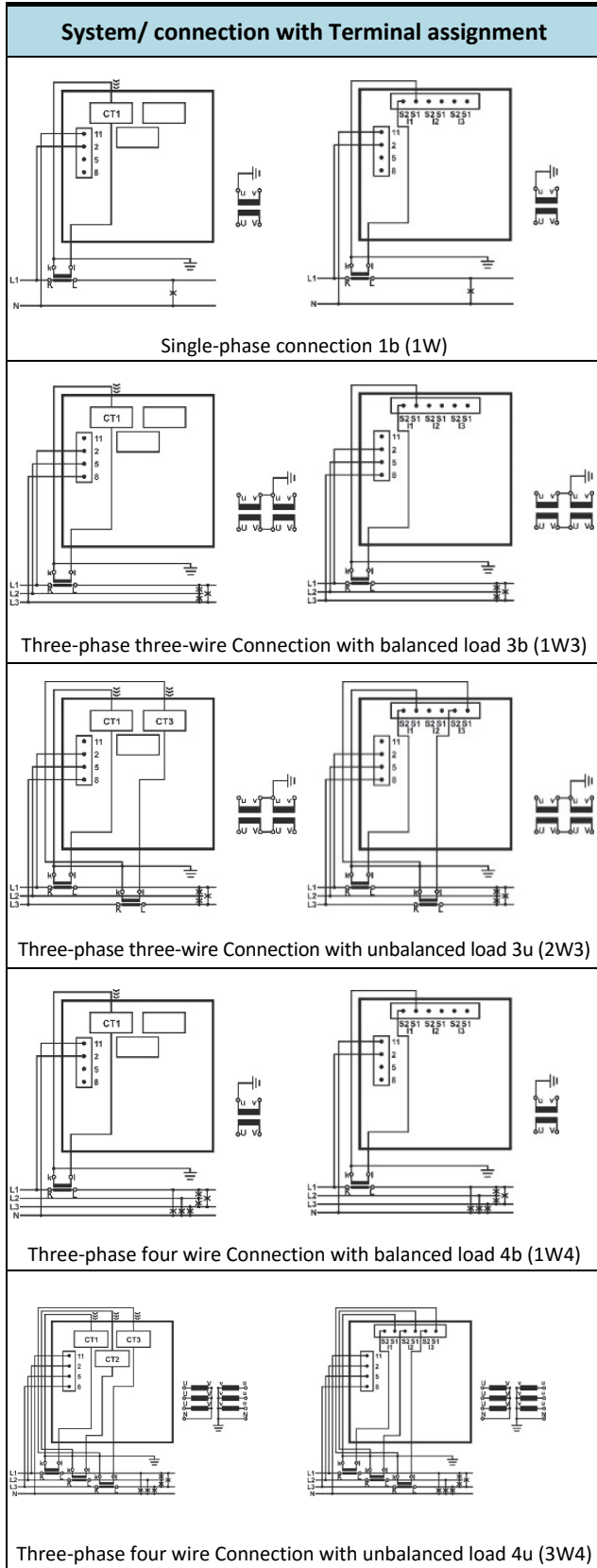
### DIMENSIONAL DRAWING



**CONNECTION**

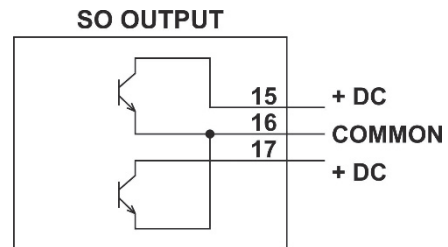
Voltage inputs can be connected either directly to low-voltage network or via a high-voltage transformer to high-voltage network.

Current inputs shall be connected to network via a corresponding current transformer



Inputs / Quantities		Terminals	
Measuring inputs:	AC current	IL1	1, 3
		IL2	4, 6
		IL3	7, 9
	AC voltage	UL1	2
		UL2	5
		UL3	8
N		11	
Auxiliary power supply:		+ / AC <sub>L</sub>	13
		- / AC <sub>N</sub>	14
Output modules	Output	Out -1	15
		C-12	16
		Out -2	17

**OUTPUT MODULE CONNECTION**



**TERMINALS**

Connection	Max. conductor cross-sections
Voltage inputs (4)	≤ 2.5 mm <sup>2</sup> ; one conductor
Current inputs (3)	≤ Ø 6 mm; one conductor with insulation
Power supply (2)	≤ 2.5 mm <sup>2</sup> ; one conductor
Modules (3)	≤ 2.5 mm <sup>2</sup> ; one conductor







**EXAMPLE OF ORDERING:**

The WQ0207 meter is connected directly to phase voltage 230 V<sub>L-N</sub> (4u) and 2000/5 A current transformer. External power supply is 400 Vac. Measured parameter on register is total absolute active energy and has resolution 1 pulse for 10 kWh. Analogue pointer has range 0 ... 1.5 MW (total absolute active energy).

**ORDERING CODE:****Hardware configuration:****WQ0207 SL4U230V5ASFTNNAASSY****Configuration settings:****200A/5A / REG = P 5M2 / INX = P 0...1.5MW****DICTIONARY:**

<i>RMS</i>	<i>Root Means Square</i>
<i>PF</i>	<i>Power factor</i>
<i>MiQen</i>	<i>Software for MC meters</i>
<i>AC</i>	<i>Alternating quantity</i>
<i>USB</i>	<i>Universal serial bus for service and setting</i>