

CEM-C31-T1-MID, Indirect three-phase energy meter with MID certificate

Code: Q23512.

- > Módules: 4
- > Tariff: 1
- > Certification: MID
- > Transistor output: 1
- > System: Three-phase
- > Measure: Indirect
- > Measurement Range (V): $3 \times 57/100...3 \times 230/400$
- > Measurement Range (A): .../ 5 (10) A
- > Max. Current (A): 10

Description

Three-phase electrical energy meter with indirect measurement, 5(10)A (, CEM-C31), direct measurement 65 A (CEM-C21) or single-phase energy meter (CEM-C10).

Built-in LCD display (7 digits) with rotating screen system. It can have integrated RS-485 communications, depending on the model. Also features

2 buttons (1 sealable button) for viewing all the measured information. Other features include:

- MID certification, module B+D (depending on the type)
- Class 1 active energy (Class B, in accordance with MID), Class 2 reactive energy
- Complies with the EN 50470 (MID European standards) or IEC 62052-11 standards (international standards), depending on the type.
- Compact size (CEM-C10: 2 modules, 36 mm, CEM-C21 y CEM-C31: 4 modules, 72 mm)
- Resettable partial meter
- 1 programmable impulse output, in accordance with DIN 43864 (CEM-C10, CEM-C31-T1, CEM-C21-T1 models)
- 1 Digital input for Tariff selection and impulse count (CEM-C31-D, CEM-C21-DS)
- Indicates bad connections on the screen
- Energy storage, even in the case of bad connections

Application

- Redundant meter for verifying the energy allocated by the energy provider.
- $\circ~$ Energy consumption report sent to a remote system (PLC/BMS).
- Cost control for achieving a high consumption/unit ratio in industrial processes.
- Display of electrical parameters (V, A, kW, kW⋅h, PF, etc.), per phase and three-phase.

Circutor



Energy meter for DIN rail mounting

Code: Q23512.

Specifications

Size (nm) width x height x depth 70 x 90 x 64 (nm) Weight (kg) 0,25 Environmental characteristics 5 95 % Current measurement circuit 5 95 % Consumption 0.3 VA 10 A Reference current (Iref) 5 A Maximum current 10 A Minimum current measurement circuit 0.050 A Yotage measurement circuit 0.25 A Consumption 0.25 A Yotage measurement circuit 0.25 A Votage measurement circuit 0.25 A Consumption 2.24 × 10VA (In, Vref) Nominal frequency 50 / 60 Hz Nominal voltage 3 x 127/220 3 x 230/400 V ~ Electrical characteristics Insulation voltage, circuit Akv RMS 50 Hz durante 1 min Standards Electrical safety, Maximum height (m) 2000 Standards Electrical safety, Maximum height (m)	AC power supply					
Frequency 5060 Hz Nominal voltage 230 V / 400 V - (± 20 %) Adebanical characteristics 70.400 X - (± 20 %) Size (nm) witht x height x depth 70.4 90 x 64 (mm) Weight (kg) 0.25 Relative humidity (without condensation) 5 95 % Consumption 0.3 VA 10 A Reference current (iref) 5 A Maximu current 0.050 A Transition current 0.050 A Nominal requency 0.50 A Nominal requency 50 / 60 Hz Nominal voltage 3 x 127/22 3 x 230/400 V ~ Electrical characteristics 1 Electrical safety, Maximum height (m) 2000 Standards EN S0470-1, EN S0470-3, IEC 62053-21, IEC 62053-23, EN 62055-23, EN	Installation category	CAT III 300 V				
Nominal voltage 20 V / 400 V - (± 20 %) Mechanical characteristics 70 × 90 × 64 (mm) Size (mm) width x height x depth 70 × 90 × 64 (mm) Weight (kg) 0,25 Anvironmental characteristics 5 95 % Current measurement circuit 5 95 % Current measurement circuit 5 A Reference current (iref) 5 A Maximum current measurement 0.050 A Transition current 0.050 A Transition current 0.25 A Adage measurement circuit 0.25 A Consumption <2 W, <100X (in, Vref)	Consumption	< 2 W, 10 VA				
Archanical characteristics 70 × 90 × 64 (mm) Weight (kg) 0.25 Archanical characteristics 5 95 % Relative humidity (without condensation) 5 95 % Consumption 0.3 VA 10 A Reference current (iref) 5.A Mainum current 0.4 A Mainum current measurement 0.050 A Transition current 0.25 A Argenesurement circuit 0.4 (In, Vref) Nominal requency 5 / 60 Hz Nominal requency 5 / 60 Hz Nation voltage, circuit 4 kV RMS 50 Hz durante 1 min Standards E Electrical safety, Maximum height (m) 2000 Standards EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-2	Frequency					
Size (mm) width x height x depth 70 x 90 x 64 (mm) Weight (kg) 0.25 Avigant Characteristics 5 95 % Relative humidity (without condensation) 5 95 % Consumption 0.3 VA 10 A Reference current (iref) 5 A Maximum current 10 A Minimum current 0.050 A Transition current 0.25 A Valage measurement circuit 0.25 A Consumption 2.28 (A) Minimum current 0.050 A Transition current 0.25 A Valage measurement circuit 228 (A) Consumption <2W, <10VA (in, Vief)	Nominal voltage	230 V / 400 V ~ (± 20 %)				
Weight (kg)0.25Auronnental characteristicsRelative humidity (without condensation)5 95 %Current measurement circuitConsumption0.3 VA 10 AReference current (Iref)5 AMaximum current10 AMinimum current measurement0.050 ATransition current0.25 AAuronnal frequency50 / 60 HzNominal requency50 / 60 HzNominal voltage3 x 127/220 3 x 230/400 V ~Electrical safety, Maximum height (m)200StandardsElectrical safety, Maximum height (m)LED2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarhKeyboard2 KeysDisplay typeLCD	Mechanical characteristics					
Arrian mental characteristics Relative humidity (without condensation) \$95 % Current measurement circuit Consumption 0.3 VA10 A Reference current (Iref) 5 A Maximun current 0.050 A Transition current measurement 0.050 A Transition current measurement 0.25 A Votage measurement circuit 22W, < 10VA (In, Vref)	Size (mm) width x height x depth	70 x 90 x 64 (mm)				
Relative humidity (without condensation) 5 95 % Consumption 0.3 VA 10 A Reference current (Iref) 5 A Maximum current 10 A Minimum current measurement 0.050 A Transition current 0.25 A Voltage measurement circuit 22 A Consumption < 2W, < 10VA (In, Vref)	Weight (kg)	0,25				
Current measurement circuit 0.3 VA 10 A Consumption 0.3 VA 10 A Reference current (Iref) 5 A Maximum current 10 A Minimum current measurement 0.050 A Transition current 0.25 A <2W, <10VA (In, Vref)	Environmental characteristics					
Consumption 0.3 VA 10 A Reference current (Iref) 5 A Maximum current 10 A Minimum current measurement 0.050 A Transition current 0.25 A Arole and a consumption Consumption < 2W , < 10VA (In, Vref)	Relative humidity (without condensation)	5 95 %				
Reference current (iref) 5 A Maximum current 10 A Minimum current measurement 0.050 A Transition current 0.25 A Voltage measurement circuit Consumption <2W , <10VA (in, Vref)	Current measurement circuit					
Maximum current10 AMinimum current measurement0.050 ATransition current0.25 AAddama currentAddama curre	Consumption	0.3 VA 10 A				
Minimum current measurement0.050 ATransition current0.25 AVoltage measurement circuit0.25 AConsumption< 2W, <10VA (In, Vref)	Reference current (Iref)	5 A				
Transition current 0.25 A Adtage measurement circuit Consumption < 2W, < 10VA (In, Vref)	Maximum current	10 A				
Xoltage measurement circuit Consumption < 2W, < 10VA (In, Vref)	Minimum current measurement	0.050 A				
Consumption< 2W , < 10VA (In, Vref)Nominal frequency50 / 60 HzNominal voltage3 x 127/220 3 x 230/400 V ~Electrical characteristicsInsulation voltage, circuit4 kV RMS 50 Hz durante 1 minStandardsElectrical safety, Maximum height (m)2000StandardsEN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-2Jser interfaceLED2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarhKeyboard2 KeysDisplay typeLCD	Transition current	0.25 A				
Nominal frequency50 / 60 HzNominal voltage3 x 127/220 3 x 230/400 V ~Electrical characteristics4 kV RMS 50 Hz durante 1 minInsulation voltage, circuit4 kV RMS 50 Hz durante 1 minElectrical safety, Maximum height (m)2000StandardsEN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-2Jer interfaceLEDLED2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarhKeyboard2 KeysDisplay typeLCD	Voltage measurement circuit					
Nominal voltage 3 x 127/220 3 x 230/400 V ~ Electrical characteristics 4 kV RMS 50 Hz durante 1 min Insulation voltage, circuit 4 kV RMS 50 Hz durante 1 min Standards 2000 Electrical safety, Maximum height (m) 2000 Standards EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-22 Jer interface ELED LED 2 LED: kWh, 20000 imp / kW, kvarh, 20000 imp / kvarh Keyboard 2 Keys Display type LCD	Consumption	< 2W , < 10VA (In, Vref)				
Electrical characteristics Insulation voltage, circuit 4 kV RMS 50 Hz durante 1 min Standards Electrical safety, Maximum height (m) 2000 Standards EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-2 Jser interface LED 2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarh Keyboard 2 Keys Display type LCD	Nominal frequency	50 / 60 Hz				
Insulation voltage, circuit4 kV RMS 50 Hz durante 1 minStandardsElectrical safety, Maximum height (m)2000StandardsEN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-2Jser interfaceLED2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarhKeyboard2 KeysDisplay typeLCD	Nominal voltage	3 x 127/220 3 x 230/400 V ~				
Standards Electrical safety, Maximum height (m) 2000 Standards EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-2 Jser interface ED LED 2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarh Keyboard 2 Keys Display type LCD	Electrical characteristics					
Electrical safety, Maximum height (m) 2000 Standards EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-2 Jser interface 2 LED 2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarh Keyboard 2 Keys Display type LCD	Insulation voltage, circuit	4 kV RMS 50 Hz durante 1 min				
Standards EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-2 Jser interface Jser interface LED 2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarh Keyboard 2 Keys Display type LCD	Standards					
Jser interface LED 2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarh Keyboard 2 Keys Display type LCD	Electrical safety, Maximum height (m)	2000				
LED2 LED: kWh, 2000 imp/kW, kvarh, 2000 imp/kvarhKeyboard2 KeysDisplay typeLCD	Standards	EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-21				
Keyboard2 KeysDisplay typeLCD	User interface					
Display type LCD	LED	2 LED: kWh, 20000 imp/kW, kvarh, 20000 imp/kvarh				
	Keyboard	2 Keys				
Maximum value 999999.9 kWh	Display type	LCD				
	Maximum value	999999.9 kWh				





Energy meter for DIN rail mounting

Code: Q23512.

Digital transistor outputs

Quantity

1



Energy meter for DIN rail mounting

Code: Q23512.

Pulse output, time period (Ton / Toff) Ton: 40 ms			
Maximum current	50 mA		
Maximum voltage	24 Vcc		
Measurement accuracy			
Reactive energy measurement (kvarh)	Class 2.0 (IEC 62053-23)		
Active energy measurement (kWh)	Class B (EN 50470)		
Serial communication			
Protocol	Modbus RTU		
Wireless communication			
Technology / Type	Optical IR port (additional external receiver required)		

CEM-C

Energy meter

CODE	TYPE	Measurement Range (V)	Measurement Range (A)	Communications	Protocol	Transistor output	Digital inputs	Tariff	Certification
Direct th	ree-phase								
Q22411.	CEM-C21-T1	3 x 127/2203 x 230/400	5 (65) A	-	-	1	-	1	IEC
Q22421.	CEM-C21-485-T1	3 x 127/2203 x 230/400	5 (65) A	RS-485	Modbus/RTU	1	-	1	IEC
Q22431.	CEM-C21-485-DS	3 x 127/2203 x 230/400	5 (65) A	RS-485	Modbus/RTU	0	1	2	IEC
Q22412.	CEM-C21-T1-MID	3 x 127/2203 x 230/400	5 (65) A	-	-	1	-	1	MID
Q22422.	CEM-C21-485-T1-MID	3 x 127/2203 x 230/400	5 (65) A	RS-485	Modbus/RTU	1	-	1	MID
Q22432.	CEM-C21-485-DS-MID	3 x 127/2203 x 230/400	5 (65) A	RS-485	Modbus/RTU	0	1	2	MID
Indirect t	hree-phase								
Q23511.	CEM-C31-T1	3 x 57/1003 x 230/400	/ 5 (10) A	-	-	1	-	1	IEC
Q23521.	CEM-C31-485-T1	3 x 57/1003 x 230/400	/ 5 (10) A	RS-485	Modbus/RTU	1	-	1	IEC
Q23531.	CEM-C31-485-DS	3 x 57/1003 x 230/400	/ 5 (10) A	RS-485	Modbus/RTU	0	1	2	IEC
Q23512.	CEM-C31-T1-MID	3 x 57/1003 x 230/400	/ 5 (10) A	-	-	1	-	1	MID
Q23522.	CEM-C31-485-T1-MID	3 x 57/1003 x 230/400	/ 5 (10) A	RS-485	Modbus/RTU	1	-	1	MID
Q23532.	CEM-C31-485-DS-MID	3 x 57/1003 x 230/400	/ 5 (10) A	RS-485	Modbus/RTU	0	1	2	MID

CEM-C10 and CEM-C21/C31 without built-in RS-485 communications can optionally communicate with CEM-M-ETH and CEM-M-RS485 modules. Devices with absolute measurements (Abs). For 2 or 4 quadrants, see the Aditional table

Frecuency: 50/60 Hz. Parameters: V, A, kW, kVA, kWh, cos phi

CEM-XXX-TI encoding table - Devices with pulse output (transistor) CEM-XXX-DS-Devices with digital input for tariff change and impulse meter





Energy meter for DIN rail mounting

Code: Q23512.

Dimensions

Connections

×

×

