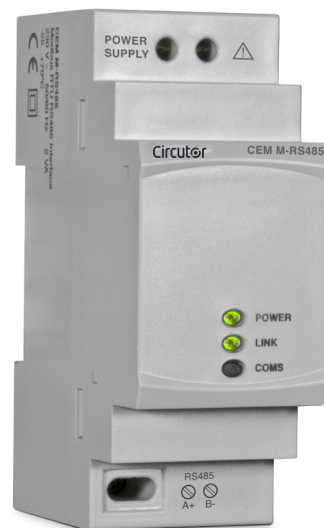# Circutor

Communications interface

CEM M-RS485

INSTRUCTION MANUAL

(M014B01-03-20A)

CE

SAFETY PRECAUTIONS

Follow the warnings described in this manual with the symbols shown below.

⚠	**DANGER** Warns of a risk, which could result in personal injury or material damage.

⚠	**ATTENTION** Indicates that special attention should be paid to a specific point.

If you must handle the unit for its installation, start-up or maintenance, the following should be taken into consideration:

⚠	Incorrect handling or installation of the unit may result in injury to personnel as well as damage to the unit. In particular, handling with voltages applied may result in electric shock, which may cause death or serious injury to personnel. Defective installation or maintenance may also lead to the risk of fire. Read the manual carefully prior to connecting the unit. Follow all installation and maintenance instructions throughout the unit's working life. Pay special attention to the installation standards of the National Electrical Code.

⚠	**Refer to the instruction manual before using the unit** In this manual, if the instructions marked with this symbol are not respected or carried out correctly, it can result in injury or damage to the unit and /or installations.

CIRCUTOR, SA reserves the right to modify features or the product manual without prior notification.

DISCLAIMER

CIRCUTOR, SA reserves the right to make modifications to the device or the unit specifications set out in this instruction manual without prior notice.

CIRCUTOR, SA on its web site, supplies its customers with the latest versions of the device specifications and the most updated manuals.

www.circutor.com

CONTENTS

REVISION LOG

Table 1: Revision log.

Date	Revision	Description
07/14	M014B01-03-14A	Initial Version
01/15	M014B01-03-15A	Changes in the following sections: 4.4.4.
01/16	M014B01-03-16A	Changes in the following sections: 4.4.1.
09/16	M014B01-03-16B	Changes in the following sections: 4.4.4.3.
07/20	M014B01-03-20A	Changes in the following sections: 2.- 4.2.

Note: *The images of the devices are solely for the purpose of illustration and may differ from the original unit.*

1.- VERIFICATION UPON RECEPTION

Check the following points upon receiving the device:

a) The device meets the specifications described in your order.
b) The device has not suffered any damage during transport.
c) Perform an external visual inspection of the device prior to switching it on.
d) Check that it has been delivered with the following:
- An installation guide,.

⚠	If any problem is noticed upon reception, immediately contact the transport company and/or **CIRCUTOR's** after-sales service.

2.- PRODUCT DESCRIPTION

The **CEM M-RS485** optical-electric interface converts the optical service port of any device of the **CEM** range into an RS-485 port with **MODBUS** protocol.

The device features:

- **3 indicator LEDs**: **POWER**, **LINK** and **COMS**.

The device is installed on 2-step DIN rails, on the left of any device of the **CEM** range.

3.- DEVICE INSTALLATION

3.1.- PRELIMINARY RECOMMENDATIONS

⚠	In order to use the device safely, it is critical that the individuals who handle it follow the safety measures set out in the standards of the country where it is being used, use the necessary personal protective equipment and pay attention to the various warnings indicated in this instruction manual.

The **CEM M-RS485** device must be installed by authorised and qualified staff.

The power supply plug must be disconnected before handling, altering the connections or replacing the device. It is dangerous to handle the device while it is powered.

Also, it is critical to keep the cables in perfect condition in order to avoid accidents, personal injury and damage to installations.

The manufacturer of the device is not responsible for any damage resulting from failure by the user or installer to observe the warnings and/or recommendations set out in this manual, nor for damage resulting from the use of non-original products or accessories or those made by other manufacturers.

If an anomaly or malfunction is detected in the device, do not use the device to take any measurements.

Inspect the work area before taking any measurements. Do not take measurements in dangerous areas or where there is a risk of explosion.

⚠	Disconnect the device from the power supply (device and measuring system power supply) before maintaining, repairing or handling the device's connections. Please contact the after-sales service if you suspect that there is an operational fault in the device.

Circutor

3.2.- INSTALLATION

On the side of the device are all of the indications adjusted to the CEI 62052-11 standard.

The device is installed on a DIN rail.

Before connecting the device, you must couple it to a **CEM** energy meter as shown in **Figure 1** and **Figure 2**.
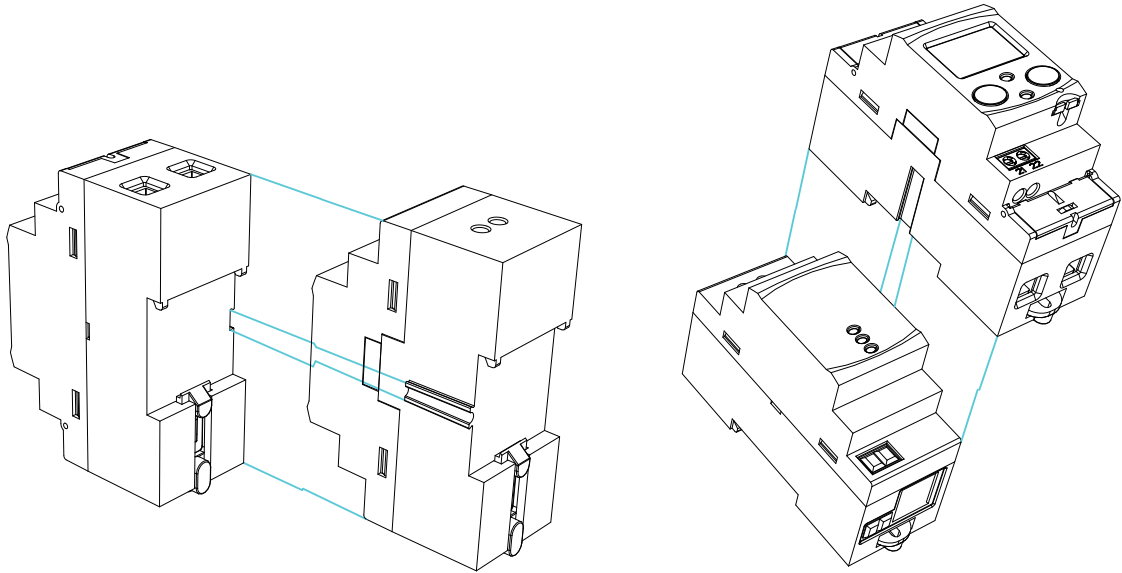
Figure 1: Coupling the CEM M-RS485 to a CEM energy meter.
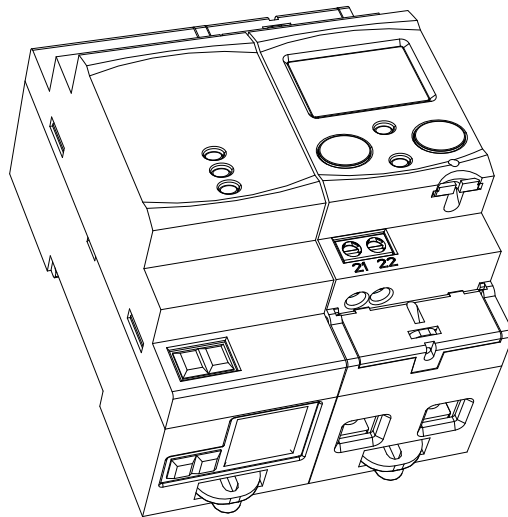
Figure 2: Coupled CEM M-RS485 and CEM.

⚠️	Terminals, opening covers or removing elements can expose parts that are hazardous to the touch while the device is powered. Do not use the device until it is fully installed.

The device must be connected to a power circuit that is protected with gL fuses (IEC 269) or M fuses, with a rating of 0.5 to 2 A. It must be fitted with a circuit breaker switch or equivalent device for disconnecting the device from the power supply mains.

The RCCB or equivalent device must be in the immediate vicinity of the device and must be easily accessible.

The power circuit is connected with a cable with a section measuring up to 2.5 mm^2.
The RS-485 connector enables cables of up to 1.5 mm^2 to be inserted.

⚠	The device's operating temperature is between -25ºC and +70ºC; always use connection cables that can withstand these temperatures.

3.3.- DEVICE TERMINALS

Table 2:List of CEM M-RS485 terminals.

Device terminals	
1: Auxiliary power supply.	**3: A(+)**, RS-485
2: Auxiliary power supply.	**4: B(-),** RS-485
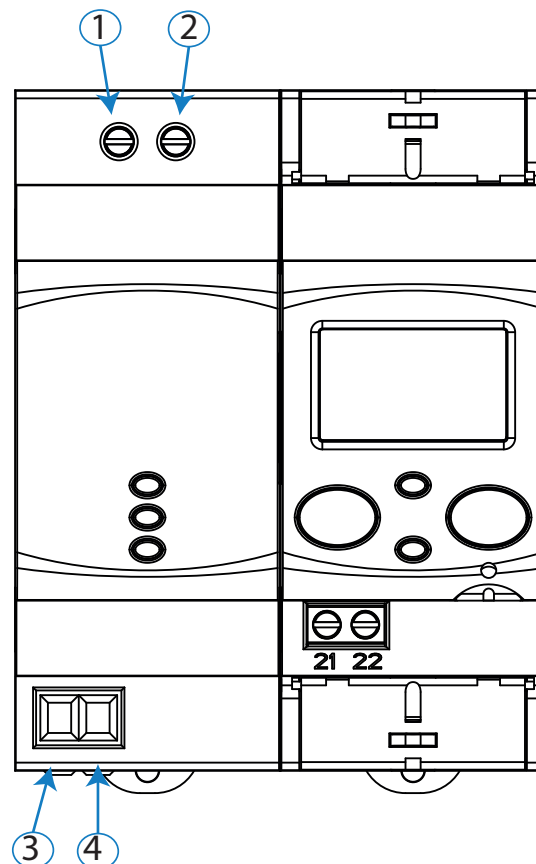
Figure 3:CEM M-RS485 terminals.

Circutor

3.4.- CONNECTION DIAGRAM

The RS-485 cable must be made up of a twisted pair cable with a braided shield with a maximum distance of 1,200 metres between the **CEM M-RS485** and the master device.
A maximum of 32 devices can be connected to this bus.

Use an intelligent RS-232 to RS-485 network protocol converter to establish communications with the master device.
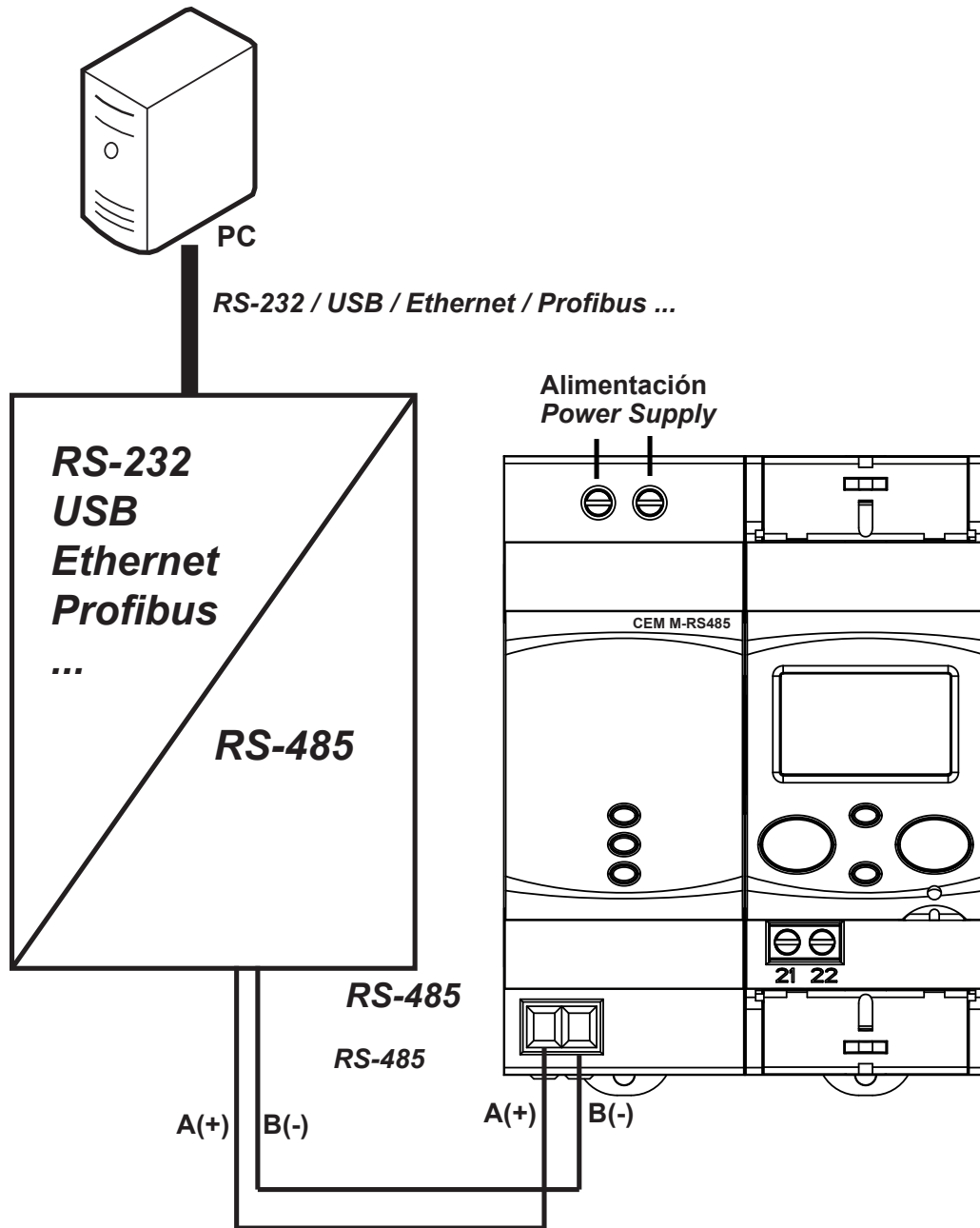
Figure 4: CEM M-RS485 connection diagram.

4.- OPERATION

The **CEM M-RS485** is designed to be used as a RS-485 electrical port for any device in the **CEM** family, using the mechanical coupling next to the optical port.

4.1.- OPERATING PRINCIPLE

The **CEM M-RS485** is an optional accessory for electrical energy meters from the **CEM** range that are mounted on DIN rails.

The **CEM M-RS485** provides **CEM** devices with RS-485 communications with the **MODBUS** protocol.

Once the device is coupled to the **CEM** energy meter (See *"3.2.- INSTALLATION"*) the **LINK** LED turns green to let the user know that the link has been made correctly.

From this point onward, the new **CEM** energy meter + **CEM M-RS485** assembly functions as a single device.
This assembly operates the same as any standard slave device with a RS-485 bus, responding to **MODBUS** requests from the bus's master peripheral.

4.2.- LED INDICATORS

The device has three indicator LEDs:
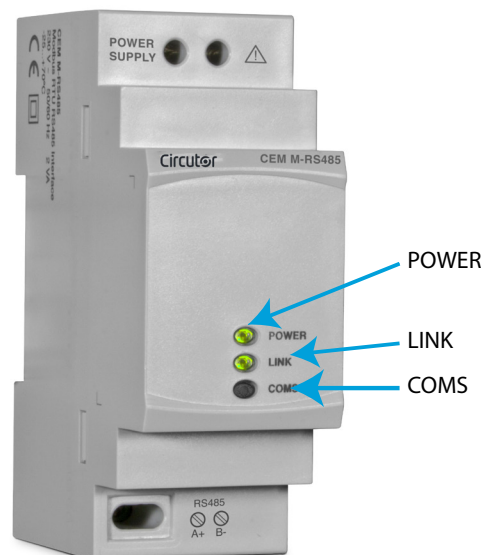
Figure 5:CEM M-RS485 indicator LEDs.

✓**POWER** LED: Indicates that the device is connected to a power supply**.**
✓**LINK** LED: Indicates the status of the link with the **CEM** device. (**Table 3**)

Table 3:LINK LED, colour codes.

LINK LED	
Colour	**Status**
Flashing red	Device not linked
Steady green	Device linked

✓**COMS** LED: Flashes with each transmission made by the RS-485 port.

4.3.- OPTICAL COMMUNICATIONS PORT

The device has an optical serial communications port on its right side, in accordance with the UNE EN 62056-21:2003 standard, in order to communicate with other devices in the **CEM** family.

4.4- RS-485 COMMUNICATIONS

4.4.1.- MODBUS PROTOCOL

The **MODBUS** protocol is a communication standard in the industry that enables the network connection of multiple devices, where there is a master and multiple slaves. Within the **MODBUS** protocol the **CEM M-RS485** uses the RTU (Remote Terminal Unit) mode.

In RTU mode, message starts and ends are detected with silences of at least 3.5 characters, and the 16-bit CRC error-detection method is used.

The **MODBUS** functions implemented in the device are:

Functions 03 and 04. Reading logs.
Function 10. Writing multiple logs.

⚠	Due to the communication time between the **CEM M-485** and the measurement module, the minimum time between questions, to different devices connected to the same bus, should not be less than 250 ms.

4.4.2.- READ COMMANDS

The **CEM M-RS485** supports integer type read functions: 0x03 and 0x04.
The device's Modbus variables are specified in **Table 4**.

Example: Reading of the device's serial number with peripheral number 01.

We will send the following Modbus frame:

Address	Function	Initial log	Log no.	CRC
01	04	2710	0002	CRC

The device will respond to us with the next frame:

Address	Function	No. of bytes	Serial no.	CRC
01	04	04	XXXX XXXX	CRC

Note: The values are shown in hexadecimal.

The number of requested logs must be the same as the size of the variable requested.
It is possible to read several consecutive addresses, if the request meets the correct format.

4.4.3.- WRITE COMMANDS

The **CEM M-RS485** supports integer type write functions: 0x01.
The device's Modbus variables are specified in **Table 4**.

Example: Changing the Modbus address of peripheral 01 to the address 0x000A.

We will send the following Modbus frame:

Address	Function	Initial log	Log no.	No. bytes	Data	CRC
01	10	03E8	0001	02	000A	CRC

The device will respond to us with the next frame:

Address	Function	Initial log	Log no.	CRC
01	10	03E8	0001	CRC

Note: The values are shown in hexadecimal.

The number of logs to write must be the same as the size of the variable that is being accessed.
It is possible to write several consecutive addresses, if the request meets the correct format.

4.4.4.- VARIABLES MODBUS

All **MODBUS** map addresses are hexadecimal.

4.4.4.1.- Configuration variables

The **Read** and **Write** functions are implemented for these variables.

Table 4:Modbus configuration variables CEM M-RS485.

Description	Address	Size	Valid data range	Default value
Modbus address	0x03E8	16 bits	1 ... 254	1
Transmission speed (Baudrate)	0x03E9	16 bits	**0:** 9600, **1:**19200, **2:** 38400	**0:** 9600
Communications configuration	0x03EA	16 bits	**0:** 8N1 (8 bits - No parity -1 stop bit) **1:** 8E1 (8 bits - Even parity -1 stop bit) **2:** 8O1 (8 bits - Odd parity -1 stop bit) **3:** 8N2 (8 bits - No parity -2 stop bit) **4:** 8E2 (8 bits - Even parity -2 stop bit) **5:** 8O2 (8 bits - Odd parity -2 stop bit)	0
Impulse output type	0x0080	16 bits	**0:** Active energy**, 1:** Reactive energy	0
Impulse output weight	0x0081	16 bits	Wh/impulse 0 ... 99999	-
Cost per kWh	0x00B0	32 bits	0.0000 ... 9999.9999 with 4 decimal places of resolution	-
KgCO$_2$	0x00B2	32 bits	0.0000 ... 9.0000 with 4 decimal places of resolution	-

Note: Some *MODBUS* variables may not be available depending on the CEM energy meter coupled to the *CEM M-RS485.* See *"4.4.4.7.- Available addresses by device"*

4.4.4.2.- Energy

The **Read** function is implemented for these variables.

Table 5: Modbus variables: Energy

Description	Address	Size	Units
Total values			
Imported active energy	0x0000	32 bits	Wh
Exported active energy	0x0002	32 bits	Wh
Q1 reactive energy	0x0004	32 bits	varh
Q2 reactive energy	0x0006	32 bits	varh
Q3 reactive energy	0x0008	32 bits	varh
Q4 reactive energy	0x000A	32 bits	varh
Partial values			
Partial imported active energy	0x0030	32 bits	Wh
Partial exported active energy	0x0032	32 bits	Wh
Q1 partial reactive energy	0x0034	32 bits	varh
Q2 partial reactive energy	0x0036	32 bits	varh
Q3 partial reactive energy	0x0038	32 bits	varh
Q4 partial reactive energy	0x003A	32 bits	varh

Note: Some *MODBUS* variables may not be available depending on the CEM energy meter coupled to the *CEM M-RS485.* See *"4.4.4.7.- Available addresses by device"*

4.4.4.3.- Operating time, cost and KgCO2 atmospheric emissions

The **Read** function is implemented for these variables.

Table 6: Modbus variables: Operating time, costs and KgCO$_2$

Description	Address	Size	Units
Cost of the partial consumption	0x00C0	32 bits	-
KgCO2 atmospheric emissions of the partial consumption	0x00C2	32 bits	-
Hours of partial operation in seconds	0x00C4	32 bits	-
Hours of total operation in seconds	0x00C6	32 bits	-

Note: Some **MODBUS** variables may not be available depending on the CEM energy meter coupled to the **CEM M-RS485.** See *"4.4.4.7.- Available addresses by device"*

4.4.4.4.- Instantaneous values

The **Read** function is implemented for these variables.

Table 7: Modbus variables: Instantaneous values.

Description	Address	Size	Units
Phase 1 voltage	0x0732	32 bits	V (1 primary decimal place)
Phase 2 voltage	0x0734	32 bits	V (1 primary decimal place)
Phase 3 voltage	0x0736	32 bits	V (1 primary decimal place)
Phase 1 current	0x0738	32 bits	A (2 primary decimal places)
Phase 2 current	0x073A	32 bits	A (2 primary decimal places)
Phase 3 current	0x073C	32 bits	A (2 primary decimal places)
Phase 1 cos φ	0x073E	32 bits	2 decimal places
Phase 2 cos φ	0x0740	32 bits	2 decimal places
Phase 3 cos φ	0x0742	32 bits	2 decimal places
Phase 1 active power	0x0746	32 bits	W
Phase 2 active power	0x0748	32 bits	W
Phase 3 active power	0x074A	32 bits	W
Total active power	0x074C	32 bits	W
Phase 1 reactive power	0x074E	32 bits	var
Phase 2 reactive power	0x0750	32 bits	var
Phase 3 reactive power	0x0752	32 bits	var
Total reactive power	0x0754	32 bits	var
Phase 1 apparent power	0x0756	32 bits	VA
Phase 2 apparent power	0x0758	32 bits	VA
Phase 3 apparent power	0x075A	32 bits	VA
Total apparent power	0x075C	32 bits	VA

Note: Some **MODBUS** variables may not be available depending on the CEM energy meter coupled to the **CEM M-RS485.** See *"4.4.4.7.- Available addresses by device"*

4.4.4.5.- Other parameters

The **Read** function is implemented for these variables.

Table 8: Modbus variables: Other parameters.

Description	Address	Size	Units
Energy meter model[1]	0xF010	6x16 bits	12 bytes in ASCII format
Serial no	0x2710	32 bits	-
Transformation ratios			
Voltage primary	0x044C	32 bits	V (1 decimal place)
Voltage secondary	0x044E	32 bits	V (1 decimal place)
Current primary	0x0450	32 bits	A (1 decimal place)
Current secondary	0x0452	32 bits	A (1 decimal place)
Energy meter firmware version			
Higher firmware version	0x0050	16 bits	-
Lower firmware version	0x0051	16 bits	-
Revised firmware version	0x0052	16 bits	-
Communications module firmware version			
Higher firmware version	0x0578	16 bits	-
Lower firmware version	0x0579	16 bits	-
Revised firmware version	0x057A	16 bits	-

Note: Some *MODBUS* variables may not be available depending on the CEM energy meter coupled to the *CEM M-RS485.* See *"4.4.4.7.- Available addresses by device"*

[1] Energy meter model description table, **Table 9.**

Table 9: Energy meter model description table.

Options		C10	C20	C30	bytes in ASCII format
Connection mode	2 wires	✓			2
	4 wires		✓	✓	4
Accuracy	Class B active / Does not measure reactive energy	✓	✓	✓	10
	Class B active / Class 2.0 reactive	✓	✓	✓	12
Measurement voltage	1x230	✓			E
	1x127	✓			B
	3x127/220 ... 3x230/400 V		✓		U
	3x127/220 V		✓	✓	N
	3x230/400 V		✓	✓	Q
	3x57/100 ... 3x230/400 V			✓	V
	3x57/100 V			✓	L
	3x63.5/110 V			✓	M
Current measurement	Shunt 10(60) A	✓			S4
	Shunt 5(65) A	✓			S7
	Direct 10(60)A		✓		D4
	Direct 5(65)A		✓		D7
	Transformer 5(10) A			✓	T5
	Transformer 5(6) A			✓	T6

Table 9 (Continuation): Energy meter model description table.

Opciones		C10	C20	C30	bytes en formato ASCII
Frequency	50Hz	✓	✓	✓	A
	60 Hz	✓	✓	✓	B
	Automatic (50/60Hz)	✓	✓	✓	C
Communications	Without communications	✓	✓	✓	0
	Side optical service port	✓	✓	✓	1
Expansion	Without inputs/outputs	✓	✓	✓	0
	Input/Output (Optocoupler)	✓	✓	✓	1
Model	Box for assembly on DIN rail	✓	✓	✓	E
Number of quadrants	2 quadrants	✓	✓	✓	0
	4 quadrants	✓	✓	✓	1
	Storage in both directions	✓	✓	✓	2
Additional features	No special features	✓	✓	✓	0

4.4.4.6.- Partial energy reset

The **0x05** function is implemented for this variable.

Table 10: Modbus variables: Energy

Description	Address	Activation
Partial energy reset	0x0800	0xFF00

4.4.4.7.- Available addresses by device

Table 11: Modbus variables: Available addresses by device.

Address	C10	C20	C30	Description
0x03E8	✓	✓	✓	Modbus Address
0x03E9	✓	✓	✓	Transmission speed
0x03EA	✓	✓	✓	Communications configuration
0x0080	✓	✓	✓	Impulse output type
0x0081	✓	✓	✓	Impulse output weight
0x00B0	✓	✓	✓	Cost per kWh
0x00B2	✓	✓	✓	$KgCO_2$
0x0000	✓	✓	✓	Imported active energy
0x0002	✓	✓	✓	Exported active energy
0x0004	✓	✓	✓	Q1 reactive energy
0x0006	✓	✓	✓	Q2 reactive energy
0x0008	✓	✓	✓	Q3 reactive energy
0x000A	✓	✓	✓	Q4 Reactive energy
0x0030	✓	✓	✓	Partial imported active energy
0x0032	✓	✓	✓	Partial exported active energy
0x0034	✓	✓	✓	Q1 partial reactive energy
0x0036	✓	✓	✓	Q2 partial reactive energy
0x0038	✓	✓	✓	Q3 partial reactive energy
0x003A	✓	✓	✓	Q4 partial reactive energy

Table 11 (Continuation): Modbus variables: Available addresses by device.

Dirección	C10	C20	C30	Descripción
0x00C0	✓	✓	✓	Cost of the partial consumption
0x00C2	✓	✓	✓	KgCO$_2$ atmospheric emissions of the partial consumption
0x00C4	✓	✓	✓	Partial operating time
0x00C6	✓	✓	✓	Total operating time
0x0732	✓	✓	✓	Phase 1 voltage
0x0734		✓	✓	Phase 2 voltage
0x0736		✓	✓	Phase 3 voltage
0x0738	✓	✓	✓	Phase 1 current
0x073A		✓	✓	Phase 2 current
0x073C		✓	✓	Phase 3 current
0x073E	✓	✓	✓	Phase 1 cos φ
0x0740		✓	✓	Phase 2 cos φ
0x0742		✓	✓	Phase 3 cos φ
0x0746	✓	✓	✓	Phase 1 active power
0x0748		✓	✓	Phase 2 active power
0x074A		✓	✓	Phase 3 active power
0x074C	✓	✓	✓	Total active power
0x074E	✓	✓	✓	Phase 1 reactive power
0x0750		✓	✓	Phase 2 reactive power
0x0752		✓	✓	Phase 3 reactive power
0x0754	✓	✓	✓	Total reactive power
0x0756	✓	✓	✓	Phase 1 apparent power
0x0758		✓	✓	Phase 2 apparent power
0x075A		✓	✓	Phase 3 apparent power
0x075C	✓	✓	✓	Total apparent power
0xF010	✓	✓	✓	Energy meter model
0x2710	✓	✓	✓	Serial no.
0x044C			✓	Voltage primary
0x044E			✓	Voltage secondary
0x0450			✓	Current primary
0x0452			✓	Current secondary
0x0050	✓	✓	✓	Higher firmware version
0x0051	✓	✓	✓	Lower firmware version
0x0052	✓	✓	✓	Revised firmware version

5.- TECHNICAL FEATURES

Power supply	
Rated voltage	230 V~ ± 20%
Maximum power consumption	4 VA
Frequency	50/60 Hz with no differentiation

Insulation	
AC voltage	4kV RMS 50Hz during 1 minute

Overimpulse	
1.2/50ms 0Ω source impedance	6 kV at 60º and 240º, with positive and negative polarization

Memory	
Setup, events, load curve	Non-volatile EEPROM memory

User interface	
LED	3 LEDs (**POWER - LINK - COMS**)

RS-485 communication	
Communications protocol	Modbus
Baud rate	9600, 19200, 38400
Stop bits	1
Parity	no parity

Environmental features	
Operating temperature	-25ºC... +70ºC
Storage temperature	-35ºC... +80ºC
Relative humidity (non-condensing)	5 ... 95%
Maximum altitude	2,000 m

Mechanical features	
Dimensions	**Figure 6**
Enclosure	ABS + V0 polycarbonate
Weight	115 gr
Protection degree	IP 51 installed IP 40 in the terminal area

| Standards	
Safety requirements for electrical units for measurement, control and laboratory use. Part 1: General requirements.	EN 61010-1: 2010
Electromagnetic compatibility (CEM). Part 6-2: Generic standards. Immunity for industrial environments.	EN 61000-6-2: 2005
Electromagnetic compatibility (CEM). Part 6-3: Generic standards. Emission standard for residential, commercial and light industry environments.	EN 61000-6-3: 2007
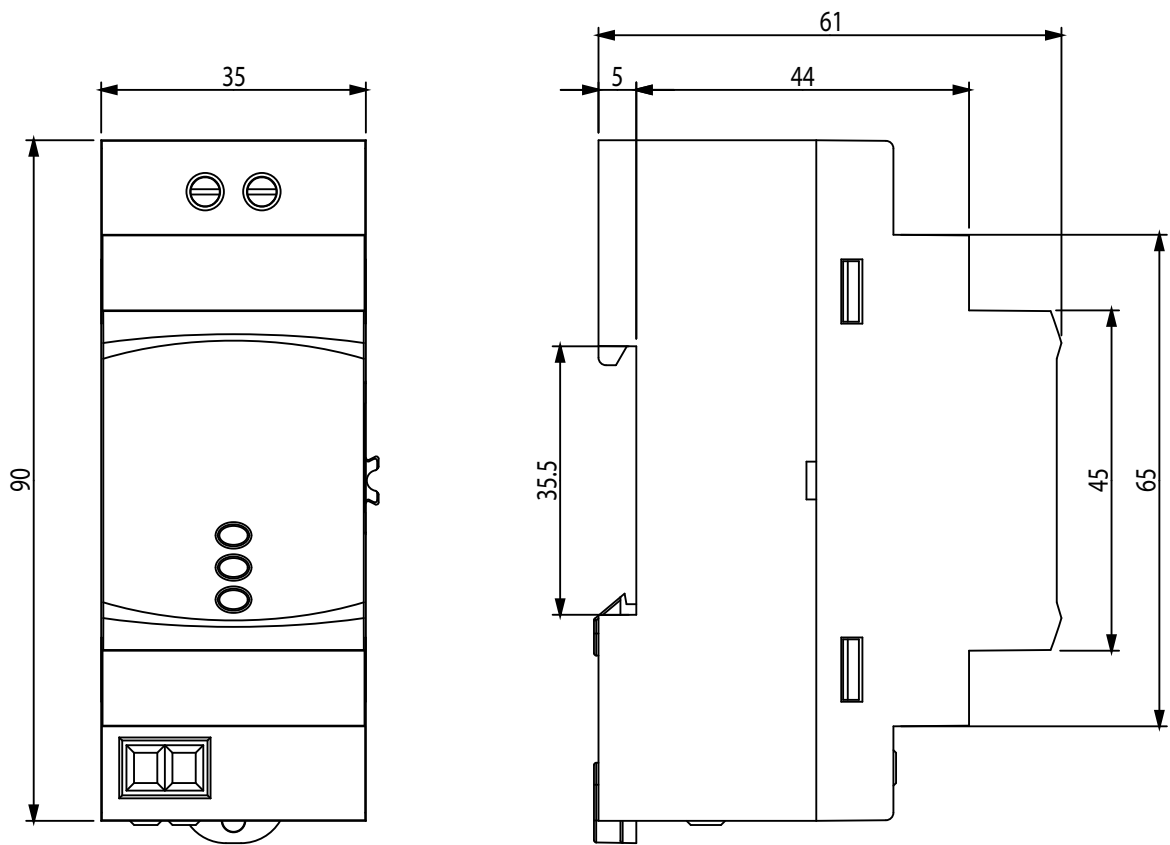
Circutor

Figure 6: CEM M RS-485 dimensions.

6.- MAINTENANCE AND TECHNICAL SERVICE

The unit does not need any type of maintenance.

In the case of any query in relation to unit operation or malfunction, please contact the **CIRCUTOR, SA** Technical Support Service.

Technical Assistance Service
Vial Sant Jordi, s/n, 08232 - Viladecavalls (Barcelona)
Tel: 902 449 459 (España) / +34 937 452 919 (outside of Spain)
email: sat@circutor.es

7.- GUARANTEE

CIRCUTOR guarantees its products against any manufacturing defect for two years after the delivery of the units.

CIRCUTOR will repair or replace any defective factory product returned during the guarantee period.

⚠️	• No returns will be accepted and no unit will be repaired or replaced if it is not accompanied by a report indicating the defect detected or the reason for the return. •The guarantee will be void if the units has been improperly used or the storage, installation and maintenance instructions listed in this manual have not been followed. "Improper usage" is defined as any operating or storage condition contrary to the national electrical code or that surpasses the limits indicated in the technical and environmental features of this manual. • **CIRCUTOR** accepts no liability due to the possible damage to the unit or other parts of the installation, nor will it cover any possible sanctions derived from a possible failure, improper installation or "improper usage" of the unit. Consequently, this guarantee does not apply to failures occurring in the following cases: - Overvoltages and/or electrical disturbances in the supply; - Water, if the product does not have the appropriate IP classification; - Poor ventilation and/or excessive temperatures; - Improper installation and/or lack of maintenance; - Buyer repairs or modifications without the manufacturer's authorisation.

8.- CE CERTIFICATE

Circutor

CIRCUTOR, SA – Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
(+34) 937 452 900 – info@circutor.com

(ES) DECLARACIÓN CONFORMIDAD CE

Por la presente CIRCUTOR, SA con dirección en
Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) España,
declaramos bajo nuestra responsabilidad que el

Producto:

Contadores de energía monofásicos con módulo comunicaciones

Serie:

**CEM-C10-212, CEM-C10-212 MID +
CEM M-RS-485, CEM-M-ETH**

Marca:

CIRCUTOR

Siempre que sea instalado, mantenido y usado en la aplicación
para la que ha sido fabricado, de acuerdo con las normas de
instalación aplicables y las instrucciones del fabricante, Cumple
con las prescripciones de la(s) Directiva(s):

2014/32/CE: Measuring Instrument Directive   R.D.1110/2013
2014/35/UE: Low Voltage Directive   2014/30/UE: Electromagnetic Compatibility Directive

Está en conformidad con la(s) siguiente(s) norma(s) u otro(s)
documento(s) normativos(s):

IEC 61000-6-3:2007
EN 50470-1:2006   EN 50470-3:2006
IEC 62053-21:2003   IEC 62053-23:2003
IEC 61010-1:2010   IEC 61000-6-2:2005

Año de marcado "CE":

2014

(EN) CE DECLARATION OF CONFORMITY

We hereby CIRCUTOR, SA With address in
Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spain,
we declare under our responsibility that the

Product:

Single-phase energy meters with communication module

Series:

**CEM-C10-212, CEM-C10-212 MID +
CEM M-RS-485, CEM-M-ETH**

Brand:

CIRCUTOR

Provided that it is installed, maintained and used in application
for which it was made, in accordance with relevant installation
standards and manufacturer's instructions,, Complies with the
provisions of Directive(s):

2014/32/CE: Measuring Instrument Directive   R.D.1110/2013
2014/35/UE: Low Voltage Directive   2014/30/UE: Electromagnetic Compatibility Directive

It is in conformity with the following standard(s) or other
normative document(s):

IEC 61000-6-3:2007
EN 50470-1:2006   EN 50470-3:2006
IEC 62053-21:2003   IEC 62053-23:2003
IEC 61010-1:2010   IEC 61000-6-2:2005

Year of affixing "CE" marking:

2014

(FR) DECLARATION DE CONFORMITE CE

Par le présent CIRCUTOR, SA avec adresse à
Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Epagne,
nous déclarons sous notre responsabilité que le

Produit:

mesureurs d'énergie monophaseés avec module comunication

Série:

**CEM-C10-212, CEM-C10-212 MID +
CEM M-RS-485, CEM-M-ETH**

Marque:

CIRCUTOR

Toujours qu'il soit installé, maintenu et utilisé pour l'application
par laquelle il a été fabriqué, d'accord avec les normes
d'installation 1plicables et suivant les instructions du fabricant,,
Accomplie avec les prescriptions de la (les) Directive(s):

2014/32/CE: Measuring Instrument Directive   R.D.1110/2013
2014/35/UE: Low Voltage Directive   2014/30/UE: Electromagnetic Compatibility Directive

Il est en conformité avec la (les) norme(s) suivante(s) ou
autre(s) document(s) normatif (ves):

IEC 61000-6-3:2007
EN 50470-1:2006   EN 50470-3:2006
IEC 62053-21:2003   IEC 62053-23:2003
IEC 61010-1:2010   IEC 61000-6-2:2005

An de mise en application du marquage "CE":

2014

CIRCUTOR, S.A.
NIF A-08513178
Vial Sant Jordi, s/n.
08232 VILADECAVALLS
(Barcelona) Spain
Tel. (+34) 93 745 29 00

General Manager: Ferran Gil Torné
10/01/2017

CIRCUTOR, SA – Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
(+34) 937 452 900 – info@circutor.com

(IT) DICHIARAZIONE DI CONFORMITÀ UE

con la presente **CIRCUTOR, SA** con indirizzo in **Vial Sant Jordi, s/n – 08232** Viladecavalls (Barcelona) España, Dichiariamo sotto la nostra responsabilità che il

prodotto:

Contatori di energia monofase con modulo comunicazioni

Serie:

CEM-C10-212, CEM-C10-212 MID + CEM M-RS-485, CEM-M-ETH

MARCHIO:

CIRCUTOR

A condizione che sia installato mantenuto e utilizzato nelle applicazioni per cui è stato realizzato, in accordo con le corrispondenti norme di installazione e le istruzioni d'uso del fabricante, L'oggetto della dichiarazione di cui sopra è conforme alla pertinente normativa di armonizzazione dell'Unione:

2014/32/CE: Measuring Instrument Directive   R . D . 1 1 1 0 / 2 0 1 3
2014/35/UE: Low Voltage Directive   2014/30/UE: Electromagnetic Compatibility Directive

Riferimento alle pertinenti norme armonizzate utilizzate o riferimenti alle altre specifiche tecniche in relazione alle quali è dichiarata la conformità:

I E C 6 1 0 0 0 - 6 - 3 : 2 0 0 7
E N 5 0 4 7 0 - 1 : 2 0 0 6   E N 5 0 4 7 0 - 3 : 2 0 0 6
I E C 6 2 0 5 3 - 2 1 : 2 0 0 3   I E C 6 2 0 5 3 - 2 3 : 2 0 0 3
I E C 6 1 0 1 0 - 1 : 2 0 1 0   I E C 6 1 0 0 0 - 6 - 2 : 2 0 0 5

Anno di apposizione della marcatura CE
2014

General Manager: Ferran Gil Torné
10/01/2017

(PT) DECLARAÇÃO DE CONFORMIDADE CE

Pela presente **CIRCUTOR, SA** com a seguinte morada **Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spain**, declaramos sob nossa responsabilidade que o

Producto:

Contadores de energía monofásicos e modulo de comunicação

Série:

CEM-C10-212, CEM-C10-212 MID + CEM M-RS-485, CEM-M-ETH

Marca:

CIRCUTOR

Sempre que seja instalado, intervencionado e utilizado na aplicação para a qual tenha sido fabricado, de acordo com as normas de instalação aplicáveis e as instruções do fabricante, cumpre com as prescrições das Directiva(s):

2014/32/CE: Measuring Instrument Directive   R . D . 1 1 1 0 / 2 0 1 3
2014/35/UE: Low Voltage Directive   2014/30/UE: Electromagnetic Compatibility Directive

Esta em conformidade com as seguintes normas ou outros documentos normativo(s):

I E C 6 1 0 0 0 - 6 - 3 : 2 0 0 7
E N 5 0 4 7 0 - 1 : 2 0 0 6   E N 5 0 4 7 0 - 3 : 2 0 0 6
I E C 6 2 0 5 3 - 2 1 : 2 0 0 3   I E C 6 2 0 5 3 - 2 3 : 2 0 0 3
I E C 6 1 0 1 0 - 1 : 2 0 1 0   I E C 6 1 0 0 0 - 6 - 2 : 2 0 0 5

Ano de marcação "CE":
2014

(DE) DECLARACIÓN CONFORMIDAD CE

Das Unternehmen CIRCUTOR, S.A., mit Sitz in Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spanien, erklärt hiermit eigenverantwortlich, dass das

Produkt:

Einphasen-Energiezähler und Kommunikationmodule

Serie:

CEM-C10-212, CEM-C10-212 MID + CEM M-RS-485, CEM-M-ETH

Marke:

CIRCUTOR

– sofern es gemäß den geltenden Installationsnormen und den Herstelleranweisungen zu dem vorgesehenen Zweck installiert, gewartet und verwendet wird – den Vorschriften der Richtlinie(n):

2014/32/CE: Measuring Instrument Directive   R . D . 1 1 1 0 / 2 0 1 3
2014/35/UE: Low Voltage Directive   2014/30/UE: Electromagnetic Compatibility Directive

entspricht und folgende Norm(en) oder anderen einschlägige Dokumente erfüllt:

I E C 6 1 0 0 0 - 6 - 3 : 2 0 0 7
E N 5 0 4 7 0 - 1 : 2 0 0 6   E N 5 0 4 7 0 - 3 : 2 0 0 6
I E C 6 2 0 5 3 - 2 1 : 2 0 0 3   I E C 6 2 0 5 3 - 2 3 : 2 0 0 3
I E C 6 1 0 1 0 - 1 : 2 0 1 0   I E C 6 1 0 0 0 - 6 - 2 : 2 0 0 5

Jahr der CE-Kennzeichnung:
2014

![CIRCUTOR logo]

Deklaracja Zgodności CE

Niniejszym CIRCUTOR, SA z siedzibą w
Vial Sant Jordi, s/n – 08232 Viladecavalls (Barcelona) Spain.
Deklarujemy z pełną odpowiedzialnością, że t...

produk:

Jednofazowe liczniki energii i Moduły komunikacyjne

Seria:

**CEM-C10-212, CEM-C10-212 MID +
CEM M-RS-485, CEM-M-ETH**

marka:

CIRCUTOR

Pod warunkiem, że jest zainstalowany, utrzymany i używany
zgodnie z przeznaczeniem w nawiązaniu do odpowiednich norm,
standardów i instrukcji producenta. Zgodne z dyrektywą

2014/32/CE: Measuring Instrument Directive   R . D . 1 1 1 0 / 2 0 1 3
2014/35/UE: Low Voltage Directive   2014/30/UE: Electromagnetic Compatibility Directive

Jest zgodny z obowiązującymi standardami lub innym
dokumentem normatywnym

I E C 6 1 0 0 0 - 6 - 3 : 2 0 0 7
E N 5 0 4 7 0 - 1 : 2 0 0 6   E N 5 0 4 7 0 - 3 : 2 0 0 6
I E C 6 2 0 5 3 - 2 1 : 2 0 0 3   I E C 6 2 0 5 3 - 2 3 : 2 0 0 3
I E C 6 1 0 1 0 - 1 : 2 0 1 0   I E C 6 1 0 0 0 - 6 - 2 : 2 0 0 5

Rok nadania znaku CE   2014

General Manager: Ferran Gil Torné
10/01/2017