











Partial consumption energy meters

Table: Selection of partial consumption electrical energy meters

		CEM-5	CEM-6	CEM-10	CEM-20/21	CEM-30/31	EDMK	CirCAMP-4DP	CirCAMP-2IP
									
Mounting	DIN rail (modules)	1	1	2	4	4	3	11	11
DC measurement		-	-	-	-	-	-	-	-
AC measurement	Three-phase 3/4 wires	-	-	-	•	•	•	•	•
	Single-phase	•	•	•	-	-	-	•	-
	Quadrants	2	4	2, 4 or ABS	2, 4 or ABS	2, 4 or ABS	4	2	2
Parameters	Active energy (kWh)	•	•	•	•	•	•	•	•
	Reactive energy (kvarh)	-	•	•	•	•	•	-	-
	V, A, W, Hz, FP	-	•	•	•	•	-	•	•
	Tariffs	1	1	1	1 / 2 (T)	1 / 2 (T)	1 / 3 - T	-	-
Current Input	Direct	5 (50) A	10 (100) A	5 (65) A	5 (65) A	-	-	5 (32) A	-
	Indirect	-	-	-	-	/ 5 A	T	-	/ 5 A
	MC System	-	-	-	-	-	T	-	-
Communications	RS-485	-	•	OP	OP	OP	T	-	-
	Ethernet	-	-	OP	OP	OP	-	-	-
	PLC (OFDM)	-	-	-	-	-	-	•	•
Inputs/outputs	Digital inputs	-	-	-	1 (T)	1 (T)	-	4	2
	Digital outputs	1	-	1	1 (T)	1 (T)	1/2	-	-
	Relay outputs	-	-	-	-	-	-	4	4
Optional	MID certification	-	T	T	T	T	T	-	-
	Auxiliary power supply	-	-	-	•	•	•	-	-

T - Depending on the Type/ OP - Optional



CirCAMP, Meters for managing multiple supplies

Type	Code	Measurement Range (A)	System	Output relay	Digital inputs	Communications	Work mode
CirCAMP-4DP	[C] QM4000.	32	4 single-phase or 1 three-phase	4	4	PLC	Post-pay/prepay
CirCAMP-2IP	[C] QM4001.	.../5	2 indirect three-phase	4	2	PLC	Post-pay/prepay



CirMANAGER, Concentrator for managing the CirCAMP system

Type	Code	Energy measurement (SBT)	Measurement Range (A)	Communications	Size (mm) width xheight xdepth
CirMANAGER SBT	[C] Q47001.	kWh	.../5 A	-	165x120x130
CirMANAGER SBT 3G	[C] Q47009.	kWh	.../5 A	3G	203x120x130

Type	Code	Description
CirCAMP Repeater	[C] QM4010.	Three-phase repeater for amplification of the PLC signal for the CirCAMP system



CEM-C, Three-phase energy meter

Type	Code	Measurement Range (V)	Input current	Tariff	Transistor output	Digital inputs	Certification	Communications	Módulos
CEM-C21	[*] Q22332.	3 x 127/220...3 x 230/400	5 (65) A	1	1	-	IEC	RS-485	4
CEM-C31	[*] Q23442.	3 x 57/100...3 x 230/400	.../ 5 (6) A	1	1	-	IEC	RS-485	4
CEM-C21-DS	[*] Q22333.	3 x 127/220...3 x 230/400	5 (65) A	2	-	1	IEC	RS-485	4
CEM-C31-DS	[*] Q23443.	3 x 57/100...3 x 230/400	.../ 5 (6) A	2	-	1	IEC	RS-485	4

Parameters measured: V, A, kW, kWh, kvar, kvarh, PF - Frequency: 50/60 Hz

Delivery time: [*] immediate
[x] working weeks
[c] consult



CEM, Single-phase and three-phase energy meters

Type	Code	Measurement Range (V)	Input current	Frequency (Hz)	System	Power supply	Certification	Phases order	Módulos
CEM C10 212	[*] Q21112.	1 x 230	5 (65) A	50/60	Single-phase	230 Vac	IEC	Direct	2
CEM C10 212 MID	[*] Q21114.	1 x 230	5 (65) A	50/60	Single-phase	230 Vac	MID	Direct	2
CEM C20 312	[*] Q22312.	3x127/220... 3x 230/400	5 (65) A	50/60	Three-phase	230 Vac	IEC	Direct	4
CEM C20 312 MID	[*] Q22314.	3x127/220... 3x 230/400	5 (65) A	50/60	Three-phase	230 Vac	MID	Direct	4
CEM C30 312	[*] Q23422.	3x127/220... 3x 230/400	.../ 5 (6) A	50/60	Three-phase	230 Vac	IEC	Indirect	4
CEM C30 312 MID	[*] Q23424.	3x127/220... 3x 230/400	.../ 5 (6) A	50/60	Three-phase	230 Vac	MID	Indirect	4

Parameters measured: V, A, kW, kWh, kvar, kvarh, PF - Frequency: 50/60 Hz

CEM-M, Communication module

Type	Code	Communications	Protocol
CEM-M-RS485	[*] Q23100.	RS-485	Modbus/RTU
CEM-M-ETH	[C] Q23400.	Ethernet	Modbus-TCP



EDMk, Three-phase energy meters, external current transformer

Type	Code	Tariff	Transistor output	Communications	Módulos	Units
EDMK-ITF-RS485-C2	[*] M31751.	1	2	RS-485	3	kWh, kvarLh, kvarCh
MID						
EDMK-MID-ITF-RS485-C	[*] M317C4.	1	1	RS-485	3	kWh, kvarLh, kvarCh
Efficient measuring Systems - Current transformers not included						
EDMK-MC-ITF-RS485-C2	[*] M31781.	1	2	RS-485	3	kWh, kvarLh, kvarCh

230 Vac power supply - Please check the encoding table for other values

NEW

CEM-5, Single-phase active energy meter

Type	Code	Measurement Range (V)	Input current	System	Transistor output	Power supply	Certification	Phases order	Módulos
CEM-C5	[*] Q25112.	1 x 230	5 (50) A	Single-phase	1	230 Vac	IEC	Direct	1

Parameters measured: kWh - Frequency: 50/60 Hz

NEW

CEM-6, Single-phase energy meter with basic analyser parameters

Type	Code	Measurement Range (V)	Input current	System	Power supply	Certification	Communications	Phases order	Módulos
CEM-C6	[*] Q26112.	1 x 230	10 (100) A	Single-phase	230 Vac	IEC	RS-485	Direct	1
CEM-C6-MID	[*] Q26115.	1 x 230	10 (100) A	Single-phase	230 Vac	MID	RS-485	Direct	1
CEM-C6-110	[1] Q261120010000	1 x 110	10 (100) A	Single-phase	110 Vac	IEC	RS-485	Direct	1

Parameters measured: V, A, kW, kWh, kvar, kvarh, PF - Frequency: 50/60 Hz

CODIFICATION TABLE

CEM		Q	2	X	X	X	X	0	0	X	X	X	X	X	Delivery time
Meas.V	CEM10	Standard (1x230 V)	0												-
		1x127 V _{ac}	1												2
Current input	CEM 10	Standard (5 (65) A)	0												-
	CEM 20	10 (60) A	1												2
	CEM 30	Standard (5 (6) A)	0												-
5 (10) A		1													2
Energy measure	Standard (Active+reactive)		0												-
	Active		1												2
Quadrants	Standard (ABS)		0	0											-
	2		0	1	2										
	4		0	2	2										

EDMk		M	3	X	X	X	X	0	0	X	0	0	X	X	Delivery time
Code	Standard (230 V _{ac})		0												-
	Power supply voltage	85...265 V _{ac}													-
		95...300 V _{dc}	C												1
Others	Standard (without battery)								0	0					-
	With battery (it is used to read energy meters only in event of no mains supply)										3	0		1	

Delivery time: [*] immediate
 [x] working weeks
 [c] consult

**LM Impulse centralisers, see section Measurement/Control devices****MC3, Three-phase current transformers**

Type	Code	A Max.	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC3 - 63 A	[*] M73121.	63	0,1	Three-phase	7,1
MC3 - 125 A	[*] M73122.	125	0,1	Three-phase	14,6
MC3 - 250 A	[*] M73123.	250	0,1	Three-phase	26

**MC1, Triple scale single-phase efficient transformers**

Type	Code	Measurement Range (A)	A Max.	Class 0,5 Power (VA)	System	Usefull diam.(mm)
MC1-15-75	[*] M73112.	75	75	0,25	Single-phase	15
MC1-20-50/100/150 A	[*] M73118.	50/100/150	150	0,25	Single-phase	20
MC1-35-50/100/150 A	[*] M73116.	50/100/150	150	0,25	Single-phase	35
MC1-20-150/200/250 A	[*] M73113.	150/200/250	250	0,25	Single-phase	20
MC1-30-250/400/500 A	[*] M73114.	250/400/500	500	0,25	Single-phase	30
MC1-55-500/1000/1500 A	[*] M73115.	500/1000/1500	1500	0,25	Single-phase	55
MC1-80 1000/1500/2000 A	[*] M73117.	1000/1500/2000	2000	0,25	Single-phase	80

**RS2RS/TCP2RS/CMBUS, Communication converters**

Type	Code	Description
LR1RS+PSAC	[2] M6215A.	LORA to RS-485 Cnverter (Modbus/RTU) . AC power supply (110...265 Vac)
LR1RS+PSDC	[2] M6215C.	LORA to RS-485 Ccnverter (Modbus/RTU) . DC power supply (12 Vdc)
RS2RS	[*] M62141.	RS-232/485 Intelligent converter and amplifier (RTS control) for PC
USB-RS 485	[*] M54040.	USB to RS-485 Converter
USB-RS 232	[*] M54050.	USB to RS-232 Converter
TCP1RS+	[*] M62121.	RS-485 / Ethernet modbus/TCP Converter
TCP2RS+	[*] M54033.	RS-232/485 Converter / Ethernet Modbus/TCP. Built-in web server and web set-up
CMBUS-8	[*] M540A0.	M-Bus to Modbus Converter, up to 8 Mbus slaves
CMBUS-24	[*] M540B0.	M-Bus to Modbus Converter, up to 24 Mbus slaves

Modems, Communication accessories

Type	Code	Description
CM-GSM/GPRS	[I] Q30250.	GSM RS-232/485 Modem (includes antenna)
SGE-3G/GPRS	[*] Q30230.	GPRS-3G Modem with Ethernet communications (includes PS + antenna + cable)
ANTENA GSM UT-35 9dB	[1] Q4994E.	Antenna 9 dB (for GSM modem)

**PowerStudio, Energy management software**

Type	Code	Description
Software SCADA		
PowerStudio	[*] M90211.	Software with USB HASP licence. Configuration, monitoring in real time, display of graphs and tables
PowerStudio-Scada	[*] M90231.	Software with USB HASP licence. Configuration, monitoring in real time, display of graphs and tables, generation of reports, creation of SCADA screens and alarms
PowerStudio-Deluxe	[C] M90241.	Software with USB HASP licence. Software PowerStudio-Scada with Generic Modbus driver used to connect to other devices available in the market
OPC Server PS/PSS	[1] M91111.	Software with USB HASP licence. OPC Sever for PowerStudio is an integration platform that can easily integrate the parameters received from PowerStudio (or any of its versions) in any SCADA platform available in the market with a simple approach.
SQL DATA EXPORT	[1] M91301.	Software with USB HASP licence. SQL Data Export for PS/PSS is a software tool for the integration of data from PS/PSS to a new or existing SQL database.

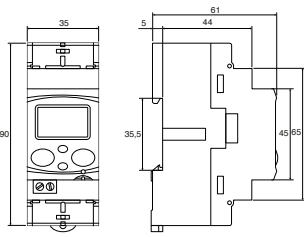
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Delivery time: [*] immediate
 [x] working weeks
 [c] consult

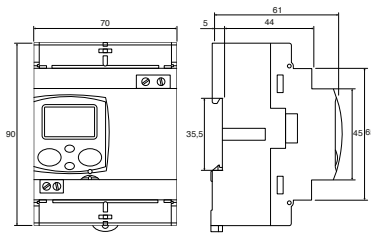


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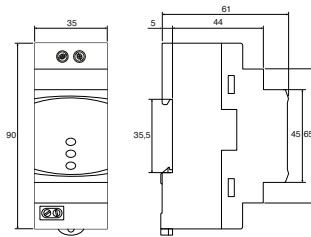
CEM-10



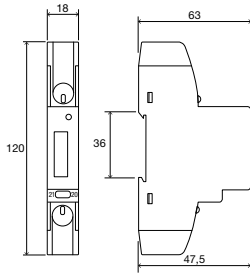
CEM-20 / CEM-30



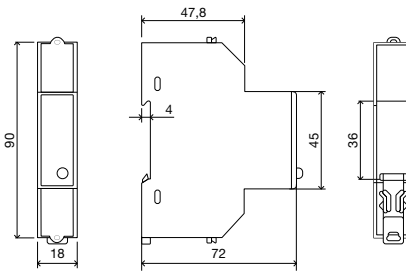
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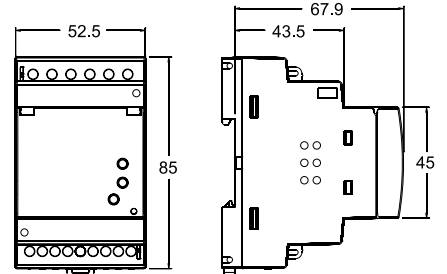
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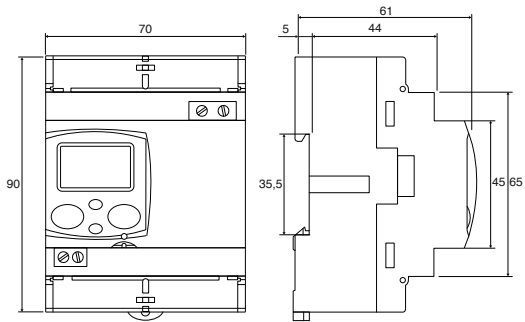
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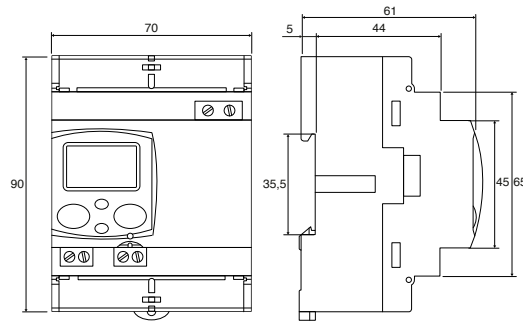
EDMk



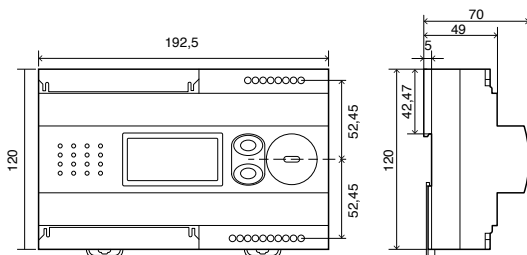
CEM-C21



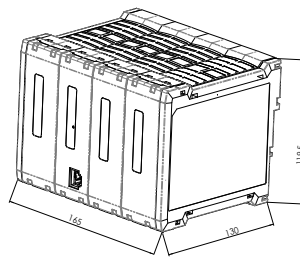
CEM-C31



CirCAMP-4DP / CirCAMP-2IP



CirMANAGER



CirMANAGER SBT 3G

