

Metering

Multifunction electrical energy meters

Table: multi-function electrical energy meters Selection.....	76
CIRWATT B III, Three-phase energy meters (Measuring, load profiling, multi configurable billing calendar).....	77
CIRWATT B II, Single-phase energy meter	77

PRIME Remote Management

Compact-DC, PRIME PLC Concentrator.....	78
CIRWATT B III PRIME, Three-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar).....	78
CIRWATT B II PRIME, Single-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar).....	78
CIRWATT-repeater, Repeater for amplification of the PLC signal for the PRIME system.....	78

Advanced low voltage monitoring

R-SABT, Advanced Low-voltage Remote Monitoring.....	79
CMBT-SABT, Advanced low-voltage monitoring cabinets.....	79
MyCLAMP, Portable clamp meter.....	79

Accessories

kit3-TRMC210, Kit of 3 current transformers for energy meters, primary winding.....	80
kit3-TRMC400, Sets of 3 current transformers for energy meters.....	80
TRMCx3, Current transformers for energy meters	80
LOC, CIRWATT optical reader.....	81
ReadWatt, Impulse collection with communication	81
Modems, Communication accessories	81
RS2RS/TCPRS/CMBUS/MBUS, Communication converters	81
PowerWatt, Software for energy meters.....	81

Partial consumption energy meters

Table: Selection of partial consumption electrical energy meters.....	83
CEM-C5, Direct Single-phase active energy meter	83
CEM-C6, Direct Single-phase energy meter with basic analyser parameters.....	83
CEM-C, Energy meter	84
Change PowerStudioSCADA physical licence to virtual licence.....	85
Communication converters.....	85
Communications accessories.....	85
PowerStudio, Energy management software.....	85

Multifunction electrical energy meters

Table: multi-function electrical energy meters Selection

		B502	B505	B410T	B410D	B410TP	B410DP	B410 RCP	B200 RCP	B101	B102
											
Connection	2 wires	–	–	–	–	–	–	–	•	•	•
	4 wires Direct	–	–	–	•	•	–	•	–	–	–
	3/4 wires Indirect	•	•	•	–	–	•	–	–	–	–
Measurement	4 Quadrants	•	•	•	•	•	•	•	•	•	•
Voltage	1x230 V _{ca}	–	–	–	–	–	–	–	•	•	•
	3x63,5/110 V _{ca}	T	T	T	–	–	–	–	–	–	–
	3x127/220 V _{ca}	T	T	T	T	T	T	T	–	–	–
	3x230/400 V _{ca}	T	T	T	T	T	T	T	–	–	–
	3x127/220 V _{ca} ...3x230/400 V _{ca}	–	–	–	T	–	–	–	–	–	–
	3x57/100 V _{ca} ...3x230/400 V _{ca}	T	T	T	–	–	–	–	–	–	–
Frequency	50 Hz	T	T	T	T	T	T	T	T	T	T
	60 Hz	T	T	T	T	T	T	T	T	T	T
Protocol	IEC 870	•	•	•	•	–	–	–	–	–	–
	DLMS	–	–	–	–	•	•	•	•	–	–
	IEC 62056-21	–	–	–	–	–	–	–	–	•	T
	Modbus/RTU	•	•	•	•	–	–	–	–	–	T
Communications	RS-485	–	–	–	–	–	–	–	–	–	•
	PRIME	–	–	–	–	•	•	•	•	–	–
	RS-232/232	T	T	T	T	–	–	–	–	–	–
	RS-485/485	T	T	T	T	–	–	–	–	–	–
	RS-232/485	T	T	T	T	–	–	–	–	–	–
	RS-232/Ethernet	T	T	T	T	–	–	–	–	–	–
	RS-485/Ethernet	T	T	T	T	–	–	–	–	–	–
Circuit breaker		–	–	–	–	–	–	•	•	–	–
	Page	77	77	77	77	78	78	78	78	77	77
	OP - Optional / T - According to type										



CIRWATT B III

Three-phase energy meters (Measuring, load profiling, multi configurable billing calendar)

Type	Code	Class (Active/ Reactive)	Quadrants	Measurement Range (V)	Measurement Range (A)	Freq. (Hz)	Communications
CIRWATT B 502							
402-VT5A-90B10	[1] QBL10	0.2S/0.5	4	3x57/100 ... 3x230/400	.../5	50	RS-232 RS-485
402-VT5A-80B10	[1] QBL80	0.2S/0.5	4	3x57/100 ... 3x230/400	.../5	50	RS-485 RS-485
402-VT5A-A0B10	[1] QBL20	0.2S/0.5	4	3x57/100 ... 3x230/400	.../5	50	RS-232 Ethernet
402-VT5B-90B10	[1] QBL50	0.2S/0.5	4	3x57/100 ... 3x230/400	.../5	60	RS-232 RS-485
402-VT5B-A0B10	[1] QBL60	0.2S/0.5	4	3x57/100 ... 3x230/400	.../5	60	RS-232 Ethernet
CIRWATT B 505							
405-VT5A-90B10	[1] QBK10	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../5	50	RS-232 RS-485
405-VT5A-80B10	[1] QBK80	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../5	50	RS-485 RS-485
405-VT5A-A0B10	[1] QBK20	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../5	50	RS-232 Ethernet
405-VT5B-90B10	[1] QBK50	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../5	60	RS-232 RS-485
405-VT5B-A0B10	[1] QBK60	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../5	60	RS-232 Ethernet
405-VT7A-90B10	[1] QBN00	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1	50	RS-232 RS-485
405-VT7A-A0B10	[1] QBN10	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1	50	RS-232 Ethernet
405-VT7B-90B10	[1] QBN30	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1	60	RS-232 RS-485
410-VT7B-A0B10	[1] QBN40	C (0,5S)/1	4	3x57/100 ... 3x230/400	.../ 1	60	RS-232 Ethernet
CIRWATT B 410T							
410-QT5A-80B10	[1] QB8A0	B (1) / 2	4	3x230/400	.../5	50	RS-485 RS-485
410-QT5A-90B10	[1] QB870	B (1) / 2	4	3x230/400	.../5	50	RS-232 RS-485
410-QT5A-A0B10	[1] QB880	B (1) / 2	4	3x230/400	.../5	50	RS-232 Ethernet
410-VT5A-90B10	[1] QB110	B (1) / 2	4	3x57/100 ... 3x230/400	.../5	50	RS-232 RS-485
410-VT5A-A0B10	[1] QB120	B (1) / 2	4	3x57/100 ... 3x230/400	.../5	50	RS-232 Ethernet
410-QT5B-90B10	[1] QB8D0	B (1) / 2	4	3x230/400	.../5	60	RS-232 RS-485
410-QT5B-A0B10	[1] QB8E0	B (1) / 2	4	3x230/400	.../5	60	RS-232 Ethernet
410-VT5B-90B10	[1] QB160	B (1) / 2	4	3x57/100 ... 3x230/400	.../5	60	RS-232 RS-485
410-VT5B-A0B10	[1] QB170	B (1) / 2	4	3x57/100 ... 3x230/400	.../5	60	RS-232 Ethernet
410-QT7A-90B10	[1] QBN0B	B (1) / 2	4	3x230/400	.../ 1	50	RS-232 RS-485
410-QT7A-A0B10	[1] QBN1B	B (1) / 2	4	3x230/400	.../ 1	50	RS-232 Ethernet
410-VT7A-90B10	[1] QBN0J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1	50	RS-232 RS-485
410-VT7A-A0B10	[1] QBN1J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1	50	RS-232 Ethernet
410-QT7B-90B10	[1] QBN2B	B (1) / 2	4	3x230/400	.../ 1	60	RS-232 RS-485
410-QT7B-A0B10	[1] QBN3B	B (1) / 2	4	3x230/400	.../ 1	60	RS-232 Ethernet
410-VT7B-90B10	[1] QBN2J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1	60	RS-232 RS-485
410-VT7B-A0B10	[1] QBN3J	B (1) / 2	4	3x57/100 ... 3x230/400	.../ 1	60	RS-232 Ethernet
CIRWATT B 410D							
410-QD1A-90B10	[1] QB4B0	B (1) / 2	4	3x230/400	10 (100)	50	RS-232 RS-485
410-QD1A-80B10	[1] QB4E0	B (1) / 2	4	3x230/400	10 (100)	50	RS-485 RS-485
410-QD1A-A0B10	[1] QB4C0	B (1) / 2	4	3x230/400	10 (100)	50	RS-232 Ethernet
410-QD1B-90B10	[1] QB4H0	B (1) / 2	4	3x230/400	10 (100)	60	RS-232 RS-485
410-QD1B-A0B10	[1] QB4I0	B (1) / 2	4	3x230/400	10 (100)	60	RS-232 Ethernet



CIRWATT B II

Single-phase energy meter

Type	Code	Class (Active/ Reactive)	Qua- drants	Measu- rement Range (V)	Measu- rement Range (A)	Freq. (Hz)	Tariff	Impulse output	Output relay	Change tariff input	Certifi- cation	Communications
CIRWATT B101												
210-ES7A-01B20	[1] QBM03	B (1)	Abs.	230	5 (65)	50	3	1	-	-	IEC	-
210-ES7A-0EB20	[1] QBM07	B (1)	Abs.	230	5 (65)	50	2	-	-	1	IEC	-
CIRWATT B102												
212-ES7A-21B20	[1] QBM83	B (1) / 2	Abs.	230	5 (65)	50	3	1	-	-	IEC	RS-485 (IEC 62056-21)
212-ES7A-23B20	[1] QBM85	B (1) / 2	Abs.	230	5 (65)	50	3	-	1	-	IEC	RS-485 (IEC 62056-21)
212-ES7A-2EB20	[1] QBM87	B (1) / 2	Abs.	230	5 (65)	50	2	-	-	1	IEC	RS-485 (IEC 62056-21)
212-ES7A-21B20	[1] QBMD3	B (1) / 2	Abs.	230	5 (65)	50	3	1	-	-	IEC	RS-485 (Modbus/RTU)
212-ES7A-23B20	[1] QBMD5	B (1) / 2	Abs.	230	5 (65)	50	3	-	1	-	IEC	RS-485 (Modbus/RTU)
212-ES7A-2EB20	[1] QBMD7	B (1) / 2	Abs.	230	5 (65)	50	2	-	-	1	IEC	RS-485 (Modbus/RTU)

PRIME Remote Management



Compact-DC PRIME PLC Concentrator

Type	Code	Digital inputs	Communications	LV supervisor	2° transformer connection	Size (mm) width x height x depth
Compact DC-S 3G BAT	[1] Q46274.	-	PRIME 3G	1	-	241x120x130
Compact DC-S MINI	[1] Q4628C.	-	PRIME	No	-	127x120x130
Compact DC-S 3G	[1] Q46210.	-	PRIME 3G	1	-	203x120x130
Compact DC-S 4I	[1] Q46220.	4	PRIME	1	-	203x120x130
Compact DC-S SBT	[1] Q46230.	-	PRIME	1	-	165x120x130
Compact DC-S BASIC	[1] Q46240.	-	PRIME 3G	No	-	165x120x130
Compact DC 2	[1] Q46050.	4	PRIME	2	●	279x120x130
Compact DC 2 3G	[1] Q46090.	-	PRIME 3G	2	●	279x120x130
COMPACT DC TGB	[1] Q46070IB000000	-	PRIME 3G	1	-	203x120x130
COMPACT DC CCT	[1] Q460B0IB000000	-	PRIME	1	-	216x132x135



CIRWATT B III PRIME

Three-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar)

Type	Code	Class (Active/Reactive)	Quadrants	Measurement Range (V)	Measurement Range (A)	Freq. (Hz)	Output relay	Discon. relay	Communications
CIRWATT B 410TP, indirect connection									
410-QT5A-B0B10	[1] QB810	B (1) / 2	4	3x230/400	.../5	50	-	-	RS-232 PRIME
CIRWATT B 410DP, direct connection									
410-QD1A-B0B10	[1] QB4N0	B (1) / 2	4	3x230/400	10 (100)	50	-	-	RS-232 PRIME
CIRWATT B 410RCP, direct connection with internal disconnection relay									
410-QD1A-B0B16	[C] QB4P0	B (1) / 2	4	3x230/400	10 (100)	50	-	●	- / PRIME
410-QD1A-B3B16	[C] QB4P1	B (1) / 2	4	3x230/400	10 (100)	50	1	●	- / PRIME



CIRWATT B II PRIME

Single-phase energy meters with PLC system (measuring, load profiling, multi configurable billing calendar)

Type	Code	Class (Active/Reactive)	Quadrants	Measurement Range (V)	Measurement Range (A)	Freq. (Hz)	Output relay	Discon. relay	Communications
CIRWATT B 200RCP									
212-ES4A-B0B17	[1] QB3C0	B / 2	4	230	10 (60)	50	-	●	PRIME
212-ES4A-BFB-17	[1] QB3C3	B / 2	4	230	10 (60)	50	1	●	PRIME



CIRWATT-repeater

Repeater for amplification of the PLC signal for the PRIME system

Type	Code	Description
CIRWATT Repeater	[C] QM4011.	Three-phase repeater to amplify the PLC system of the PRIME system (3 x 127/200 ... 3 x 230/ 400 V)

Advanced low voltage monitoring



R-SABT

Advanced Low-voltage Remote Monitoring

Type	Code	Description
Advanced Low-voltage Remote Monitoring		
R-SABT	[C] Q46300.	Advanced low voltage remote monitoring
Advanced Low-voltage Monitoring Cards		
T-SABT	[C] Q32000.	Advanced low voltage monitoring card
T-SABT-BRIDGE	[C] Q32400.	Bridge card for backup line
Advanced Monitoring Accessories		
VTN	[C] Q32200.	Neutral to earth voltage monitor
Feeder supervisor		
CAP-CRADY-T2 400A	[C] Q32100.	Low voltage output module for vertical three-pole base 400A, size 2 Crady
CAP-PRONUTEC-T2 400A	[C] Q32101.	Low voltage output module for vertical three-pole base 400A, size 2 Pronutec
CAP-JEANMULLER-T2 400A	[C] Q32102.	Low voltage output module for vertical three-pole base 400A, size 2 Jean Muller



CMBT-SABT

Advanced low-voltage monitoring cabinets

Type	Code	Device	Surge Protection (SPD)	Cabinet	Communications	Size (mm) width x height x depth
Indoor						
CMBT-SABT-INT-1	[C] Q5WGC0.	1 R-SABT	-	Reinforced polyester	Ethernet	360x315x180
CMBT-SABT-INT-2	[C] Q5WLJ0.	1 R-SABT 1 VTN	●	Reinforced polyester	Ethernet	360x315x180
Outdoor						
CMBT-SABT-TP-EXT-1	[C] Q54LL40080100	1 R-SABT 3 T-SABT 1 VTN	●	Reinforced polyester	Ethernet 3G	600x500x250
CMBT-SABT-TP-EXT-2	[C] Q54LL40080200	1 R-SABT 6 T-SABT 1 VTN	●	Reinforced polyester	Ethernet 3G	600x500x250
CMBT-SABT-TP-EXT-3	[C] Q54LL40080300	1 R-SABT 9 T-SABT 1 VTN	●	Reinforced polyester	Ethernet 3G	600x500x250

CMBT-SABT-ext requires current transformers that are not included (3 transformers with .../1 A secondary for each LV output)



MyCLAMP

Portable clamp meter

Type	Code	Description
MyCLAMP BT	[C] Q31400.	Portable amperimetric clamp with Bluetooth communications for Low Voltage laying (50/60 Hz)
P-64	[C] Q39970.	Insulating pole for Low Voltage cables. 6,4 m (1.6 m retracted)

MyCLAMP APP: Free application for managing fraud (downloadable from google play)

Accessories

kit3-TRMC210

Kit of 3 current transformers for energy meters, primary winding

Type	kit3-TRMC210			kit3-TRMC210-05			kit3-TRMC210.2		
	Size (mm) width xheight xdepth 145x110x86								
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
100/5	0.5S	10	[3] Q309010000001	0.5	10	[3] Q309610000001	0.5S	2,5	[3] Q309810000001
150/5	0.5S	10	[3] Q309020000001	0.5	10	[3] Q309620000001	0.5S	2,5	[3] Q309820000001
200/5	0.5S	10	[3] Q309030000001	0.5	10	[3] Q309630000001	0.5S	2,5	[3] Q309830000001
300/5	0.5S	10	[3] Q309040000001	0.5	10	[3] Q309640000001	0.5S	2,5	[3] Q309840000001
400/5	0.5S	10	[3] Q309050000001	0.5	10	[3] Q309650000001	0.5S	2,5	[3] Q309850000001
500/5	0.5S	10	[3] Q309060000001	0.5	10	[3] Q309660000001	0.5S	2,5	[3] Q309860000001
600/5	0.5S	10	[3] Q309070000001	0.5	10	[3] Q309670000001	0.5S	2,5	[3] Q309870000001

Check availability.../1 A

kit3-TRMC400

Sets of 3 current transformers for energy meters

Type	kit3-TRMC400			kit3-TRMC400-05			kit3-TRMC400.2		
	Size (mm) width xheight xdepth 99x160x68								
Flat strip(mm)	100x20 mm								
A/V-A	Class	VA	Code	Class	VA	Code	Class	VA	Code
750/5	0.5S	10	[3] Q309110000001	0.5	10	[3] Q309710000001	0.5S	2,5	[3] Q309A10000001
1000/5	0.5S	10	[3] Q309120000001	0.5	10	[3] Q309720000001	0.5S	2,5	[3] Q309A20000001
1500/5	0.5S	10	[3] Q309130000001	0.5	10	[3] Q309730000001	0.5S	2,5	[3] Q309A30000001
2000/5	0.5S	10	[3] Q309140000001	0.5	10	[3] Q309740000001	0.5S	2,5	[3] Q309A40000001
3000/5							0.5S	2,5	[3] Q309A60000001

Check availability.../1 A



TRMCx3

Current transformers for energy meters

Type	Code	Measurement Range (A)	Class 0,5S Power (VA)	Usefull diam.(mm)	Cable (m)
Indoor					
TRMC-X3 100/5	[*] Q301T1.	100/5	2.5	38	1.5
TRMC-X3 200/5	[*] Q301T2.	200/5	2.5	38	1.5
TRMC-X3 300/5	[*] Q301T3.	300/5	2.5	38	1.5
TRMC-X3 400/5	[*] Q301T4.	400/5	2.5	38	1.5
Outdoor					
TRMC-X3 100/5 Ext	[C] Q301T1010E000	100/5	2.5	38	7
TRMC-X3 200/5 Ext	[C] Q301T2010E000	200/5	2.5	38	7
TRMC-X3 300/5-ext	[C] Q301T3010E000	400/5	2.5	38	7
TRMC-X3 400/5 Ext	[C] Q301T4010E000	300/5	2.5	38	7



LOC

CIRWATT optical reader

Type	Code	Description
Loc-USB	[*] Q30302.	CIRWATT optical reader with USB port



ReadWatt

Impulse collection with communication

Type	Code	Description
PS 100..240Vcc	[*] M62331.	ReadWatt power supply
ReadWatt	[*] M62311.	Impulse collector with RS232/RS485 Modbus communications. Built in transistor output. PowerStudio supported



Modems

Communication accessories

Type	Code	Description
CM-GSM/3G	[*] Q30251.	RS-232/RS-485 GSM/3G Modem
SGE-3G/GPRS	[*] Q30230.	GPRS-3G Modem with Ethernet communications (includes PS + antenna + cable)
ANTENA GSM	[1] Q4994E.	Antenna 9 dB (for GSM modem)



RS2RS/TCPRS/CMBUS/MBUS

Communication converters

Type	Code	Description
RS		
RS2RS	[*] M62141.	RS-232/485 Intelligent converter and amplifier (RTS control) for PC
USB		
USB-RS 485	[*] M54040.	USB to RS-485 Converter
USB-RS 232	[*] M54050.	USB to RS-232 Converter
M-BUS		
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
LoRa		
LR1RS+PSAC	[2] M6215A.	LoRa to RS-485 Converter (Modbus/RTU) . AC power supply (110...264 Vac)
LR1RS+PSDC	[2] M6215C.	LoRa to RS-485 Converter (Modbus/RTU) . DC power supply (12 Vdc)
Ethernet		
Line-TCPRS1	[C] M62411.	RS-485/RS-232 to Ethernet/Wi-Fi converter (ModbusTCP/TCP/UDP) Integrated web server and mobile app (MyConfig) for configuration

Line-TCPRS1: Power supply 100... 264 VAC/100... 300 VDC

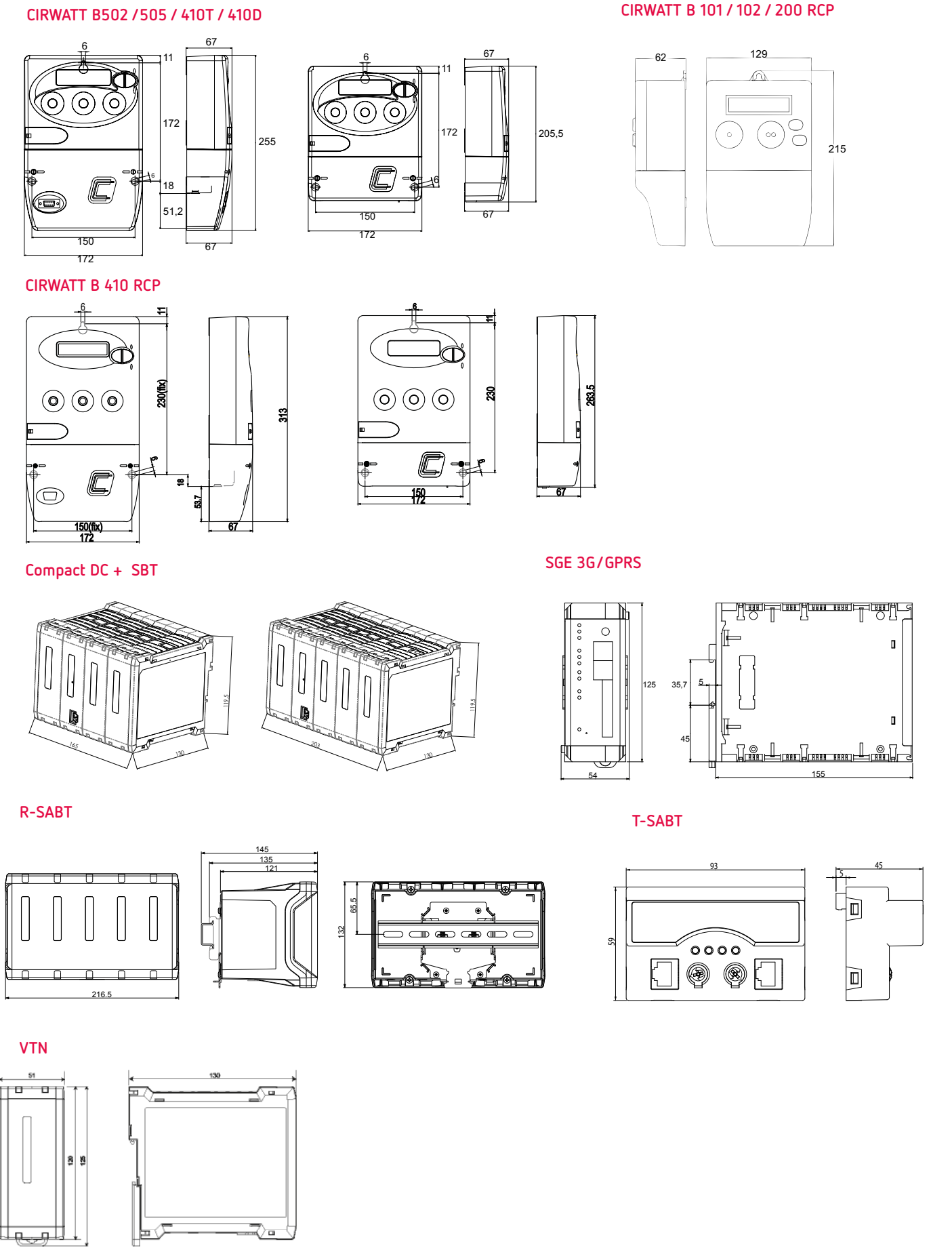


PowerWatt

Software for energy meters

Type	Code	Description
PowerWatt LT SQL	[*] Q30423.	Software for downloading information from CIRWATT IEC meters (load curves, bill closures and events)

Dimensions



Partial consumption energy meters

Table: Selection of partial consumption electrical energy meters

		CEM-C5	CEM-C6	CEM-C10	CEM-C21-T1	CEM-C21-DS	CEM-C31-T1	CEM-C31-DS
								
Mounting	DIN rail (modules)	1	1	2	3	3	3	3
AC measurement	Three-phase 3/4 wires	-	-	-	•	•	•	•
	Single-phase	•	•	•	-	-	-	-
	Quadrants	2	4	ABS	ABS	ABS	ABS	ABS
Parameters	Active energy (kWh)	•	•	•	•	•	•	•
	Reactive energy (kvarh)	-	•	•	•	•	•	•
	V, A, W, Hz, FP	-	•	•	•	•	•	•
	Tariffs	1	1	1	1	2	1	2
	Cost	-	-	•	•	•	•	•
	CO ₂ emissions	-	-	•	•	•	•	•
	Working time	-	-	•	•	•	•	•
Current Input	Direct	5 (50) A	10 (100) A	5 (65) A 10(60) A	5 (60) A 10(60) A	5 (60) A 10(60) A	-	-
	Indirect	-	-	-	-	-	.../5(10) A	.../5(10) A
Communications	RS-485	-	•	OP	T	•	T	•
	Ethernet	-	-	OP	OP (T)	OP (T)	OP (T)	OP (T)
Inputs/outputs	Digital inputs	-	-	-	-	1	-	1
	Digital outputs	1	-	1	1	-	1	-
Optional	MID certification	-	• (T)	• (T)	• (T)	• (T)	• (T)	• (T)
	IEC certification	•	• (T)	• (T)	• (T)	• (T)	• (T)	• (T)
	Auxiliary power supply	-	-	-	•	•	•	•
	Sealable	•	•	•	•	•	•	•
	Page	89	89	90	90	90	90	90

T - Depending on the Type / OP - Optional



CEM-C5

Direct Single-phase active energy meter

Type	Code	Quadrants	Measurement Range (V)	Measurement Range (A)	Transistor output	Certification	Módulos	Display
CEM-C5	[*] Q25112.	2	1 x 230	5 (50) A	1	IEC	1	LCD

Frequency: 50/60 Hz. Parameters: kWh



CEM-C6

Direct Single-phase energy meter with basic analyser parameters

Type	Code	Quadrants	Measurement Range (V)	Measurement Range (A)	Certification	Módulos	Communications	Protocol
CEM-C6	[*] Q26112.	4	1 x 230	10 (100) A	IEC	1	RS-485	Modbus/RTU
CEM-C6-MID	[*] Q26115.	2	1 x 230	10 (100) A	MID	1	RS-485	Modbus/RTU

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



CEM-C

Energy meter

Power supply 230 Vac, 50 ... 60 Hz

Type	Code	Quadrants	Measurement Range (V)	Measurement Range (A)	I Max. (A)	Tariff	Tr. output	Digital inputs	Certification	Modules	Communications	Protocol
Direct single-phase												
CEM C10 212	[*] Q21112.	Abs.	1 x 230	5 (65) A	65	1	1	-	IEC	2	-	-
CEM C10 212 MID	[*] Q21114.	Abs.	1 x 230	5 (65) A	65	1	1	-	MID	2	-	-
Direct three-phase												
CEM-C21-T1	[*] Q22411.	Abs.	3 x 127/220...3 x 230/400	5 (65) A	65	1	1	-	IEC	4	-	-
CEM-C21-485-T1	[*] Q22421.	Abs.	3 x 127/220...3 x 230/400	5 (65) A	65	1	1	-	IEC	4	RS-485	Modbus/RTU
CEM-C21-485-DS	[*] Q22431.	Abs.	3 x 127/220...3 x 230/400	5 (65) A	65	2	-	1	IEC	4	RS-485	Modbus/RTU
CEM-C21-T1-MID	[*] Q22412.	Abs.	3 x 127/220...3 x 230/400	5 (65) A	65	1	1	-	MID	4	-	-
CEM-C21-485-T1-MID	[*] Q22422.	Abs.	3 x 127/220...3 x 230/400	5 (65) A	65	1	1	-	MID	4	RS-485	Modbus/RTU
CEM-C21-485-DS-MID	[*] Q22432.	Abs.	3 x 127/220...3 x 230/400	5 (65) A	65	2	-	1	MID	4	RS-485	Modbus/RTU
Indirect three-phase												
CEM-C31-T1	[*] Q23511.	Abs.	3 x 57/100...3 x 230/400	.../ 5 (10) A	10	1	1	-	IEC	4	-	-
CEM-C31-485-T1	[*] Q23521.	Abs.	3 x 57/100...3 x 230/400	.../ 5 (10) A	10	1	1	-	IEC	4	RS-485	Modbus/RTU
CEM-C31-485-DS	[*] Q23531.	Abs.	3 x 57/100...3 x 230/400	.../ 5 (10) A	10	2	-	1	IEC	4	RS-485	Modbus/RTU
CEM-C31-T1-MID	[*] Q23512.	Abs.	3 x 57/100...3 x 230/400	.../ 5 (10) A	10	1	1	-	MID	4	-	-
CEM-C31-485-T1-MID	[*] Q23522.	Abs.	3 x 57/100...3 x 230/400	.../ 5 (10) A	10	1	1	-	MID	4	RS-485	Modbus/RTU
CEM-C31-485-DS-MID	[*] Q23532.	Abs.	3 x 57/100...3 x 230/400	.../ 5 (10) A	10	2	-	1	MID	4	RS-485	Modbus/RTU

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

CEM-XXX-T1 encoding table - Devices with pulse output (transistor)

CEM-XXX-DS-Devices with digital input for tariff change and impulse meter



Communication module

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

Compatible with CEM-C10 and CEM-C21/C31 meters without built-in RS-485 communications

TABLE OF ADDITIONAL FEATURES

CEM-10 / CEM-C21/ CEM-C31

Q	2	X	X	X	X	0	0	X	X	X	X	X
Code	Internal code										↑	↑
	Standard (ABS)										0	0
Quadrants	2										0	1
	4										0	2

ABS = Energy Consumed + Energy Generated

LM Impulse centralisers, see section **Measurement/Control devices**



Communication converters

Type	Code	Description
RS		
RS2RS	[*] M62141.	RS-232/485 Intelligent converter and amplifier (RTS control) for PC
USB		
USB-RS 485	[*] M54040.	USB to RS-485 Converter
USB-RS 232	[*] M54050.	USB to RS-232 Converter
M-BUS		
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
LoRa		
LR1RS+PSAC	[2] M6215A.	LoRa to RS-485 Converter (Modbus/RTU) . AC power supply (110...264 Vac)
LR1RS+PSDC	[2] M6215C.	LoRa to RS-485 Converter (Modbus/RTU) . DC power supply (12 Vdc)
Ethernet		
Line-TCPRS1	[C] M62411.	RS-485/RS-232 to Ethernet/Wi-Fi converter (ModbusTCP/TCP/UDP) Integrated web server and mobile app (MyConfig) for configuration
Line-TCPRS1: Power supply 100... 264 VAC/100... 300 VDC		



Communications accessories

Type	Code	Description
CM-GSM/3G	[*] Q30251.	RS-232/RS-485 GSM/3G Modem
SGE-3G/GPRS	[*] Q30230.	GPRS-3G Modem with Ethernet communications (includes PS + antenna + cable)
ANTENA GSM	[1] Q4994E.	Antenna 9 dB (for GSM modem)



PowerStudio Energy management software

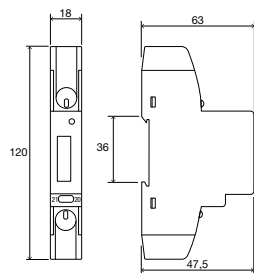
Type	Code	Description
SCADA software		
PowerStudio	[*] M90211.	Configuration, monitoring in real time, display of graphs and tables
PowerStudio-Scada	[*] M90231.	Software with USB HASP licence. Configuration, monitoring in real time, display of graphs and tables, generation of reports, creation of SCADA 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 Server 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 is a software tool for the integration of data from PS/PSS/PSSD to a new or existing SQL database.
License 4.0 version 4.0		

Change PowerStudioSCADA physical licence to virtual licence

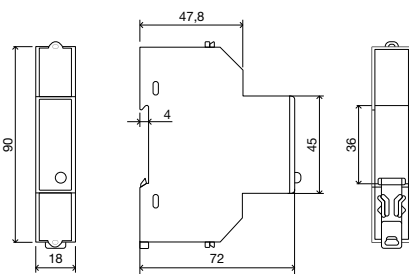
Type	Code	Description
Phi-to-Vir-PSS	[1] M902310055000	Replacement of physical USB licence for PowerStudioSCADA with software licence (requires returning physical licence)
Phi-to-Vir-PSS-Deluxe	[1] M902410055000	Replacement of physical USB licence for PowerStudioSCADA Deluxe with software licence (requires returning physical licence)

Dimensions

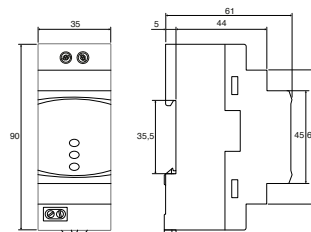
CEM-C5



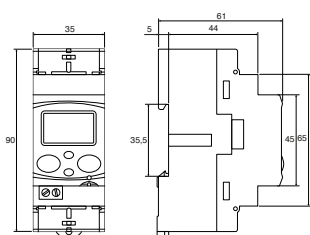
CEM-C6



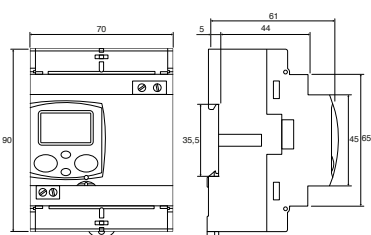
CEM-M



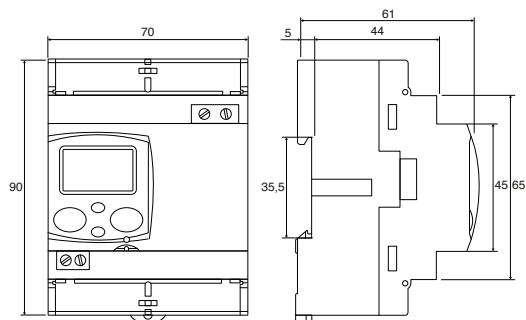
CEM-C10



CEM-C21 / CEM-C31



CEM-C21-485



CEM-C31-485

