

CIRWATT C

Digital multi-function three-phase meter



Description

Digital multi-function three-phase meter, with 2 or 4 quadrants, with type-1 accuracy in active energy and type-2 accuracy in reactive energy, direct or indirect metering, with the possibility of programming up to 3 contracts.

In accordance with the demands and needs of the electricity market, **CIRCUTOR** has included 2 communications ports (on demand), respecting the IEC and MODBUS communications protocols. It is committed to future technologies, adapting a range of Type C meters to the new communications system, PLC.

The main display shows the following visual indicators in standby mode:

- Energy direction
- Reactive capacitive / reactive
- Quadrant being used
- Phases activated and their direction
- Active rate per contract
- The meter also has 3 alarms to indicate the status of the contact or the installation: critical, non-critical and battery.

Application

CIRWATT C is ideal for LV and MV power supplies up to 450 kW.

Special 4Q meter for FV plants, with an endless number of communications options.

Features

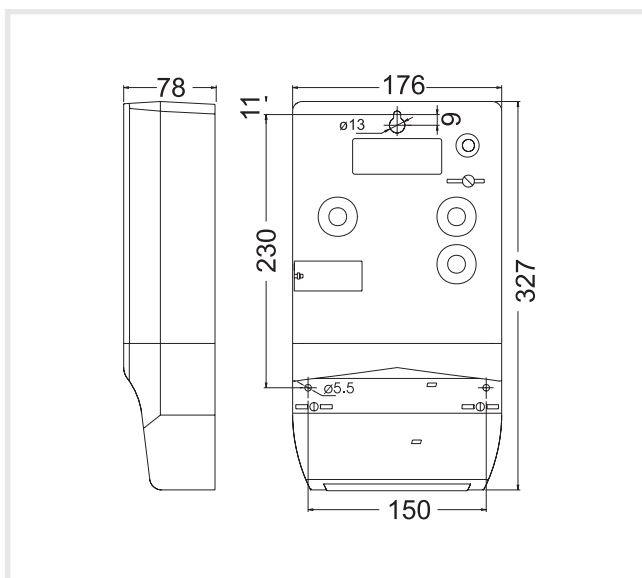
Power supply circuit	Self-powered
Nominal voltage	Multi-range, from 3x57.7/100 V to 3x230/400 Vac
Tolerance	± 20 %
Consumption	< 2 W / 10 V·A
Frequency	50 ... 60 Hz
Operating temperature	- 20 °C ... + 60 °C
Metering circuit	
Connection	3 or 4 wires from the same unit
Reference voltages	Multi-range, from 3x57.7/100 V to 3x230/400 Vac
Frequency	50 ... 60 Hz
Current circuit	
Nominal base currents	.../5 or .../1 A (indirect metering); 10 A (direct metering)
Maximum current	10 or 2 A ($2 \times I_n$) (indirect metering); 100 A ($10 \times I_n$) (direct metering)
Accuracy	
Active Energy	Class 1 (IEC 61036)
Reactive Energy	Class 1 (IEC 61268)
Data memory	FLASH (non-volatile memory)
Capacity	Events: 512 records / Billing closing: 64 / Load curve: 213 days / 2nd programmable load curve: 5,120 records
Clock maintenance battery	Lithium
Working Life	10 years (50% load)
Operation with no battery or voltage	Maximum 24 hours
Clock	
Type	Quartz oscillator / grid synchronism (adjustable by the programmer)
Quartz oscillator drift	< 0.5 s/day at 25 °C
Digital inputs (on demand)	4 inputs (60...300 Vac)
Digital outputs (on demand)	3 mechanical relay outputs (up to 400 Vac) optoMOS
Verification LED output	
Rate	20 000 impulses / kW·h or kvar·h, in terms of secondary values (indirect metering); 1 000 impulses / kW·h (direct metering)
Communications	
Optical interface	IEC-61107
COM 1	RS-232 / RS-485 / Ethernet / PLC (depending type)
Protocols	IEC-870-5-102, IEC-61107
Build features	
Enclosure	In compliance with DIN 43859
Weight	1.9 kg

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Dimensions

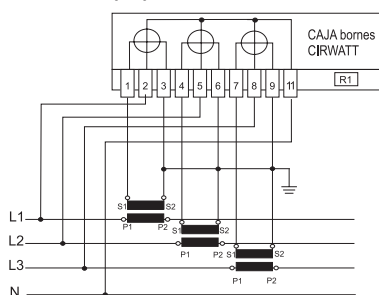


Standards

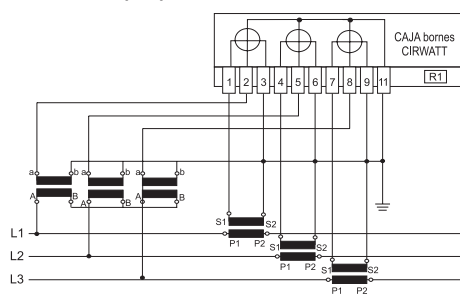
IEC60687	Static active energy meters for ac, Class 0.5S, 0.2S
IEC61036	Static active energy meters for ac, Class 1
IEC61268	Static reactive energy meters for ac, Class 1 and 2
EN -50081-1	Residential emissions
EN -50082-2	Industrial immunity
EN 55022	Driven emissions: Class B / Radiated emissions: Class B
EN 61000-4-6	Immunity to RF fields coupled to cables (common mode): 10 V
EN 61000-4-8	Immunity to magnetic fields and grid frequency: 30 A/m

Connections

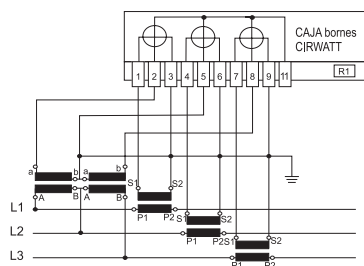
3 / 4 Wire Connection (LV)



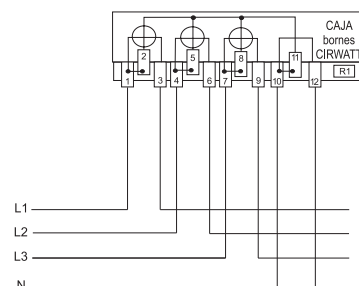
3 Wire Connection (MV)



3 Wire Connection (MV)



Direct metering



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References

Class (active/reactive)	Quadrants	Measuring range V	Measuring range A	Input / Output relays	Input impulses	Communication COM1	Communication COM2	Type	Code
Standard									
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	-	CIRWATT C 410-UD1C-10C0	Q1C521
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS485	-	CIRWATT C 410-UD1C-20C0	Q1C525
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	-	-	ETHERNET	-	CIRWATT C 410-UD1C-30C0	Q1C52D
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	RS232	CIRWATT C 410-UD1C-70C0	Q1C52W
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS485	RS485	CIRWATT C 410-UD1C-80C0	Q1C52U
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	RS485	CIRWATT C 410-UD1C-90C0	Q1C52T
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	ETHERNET	CIRWATT C 410-UD1C-A0C0	Q1C52V
1/2	2	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	-	CIRWATT C 410-UT5C-10C0	Q1C511
1/2	2	3x57/110 V a 3x230/400 V	.../5A	-	-	RS485	-	CIRWATT C 410-UT5C-20C0	Q1C515
1/2	2	3x57/110 V a 3x230/400 V	.../5A	-	-	ETHERNET	-	CIRWATT C 410-UT5C-30C0	Q1C51D
1/2	2	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	RS232	CIRWATT C 410-UT5C-70C0	Q1C51W
1/2	2	3x57/110 V a 3x230/400 V	.../5A	-	-	RS485	RS485	CIRWATT C 410-UT5C-80C0	Q1C51U
1/2	2	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	RS485	CIRWATT C 410-UT5C-90C0	Q1C51T
1/2	2	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	ETHERNET	CIRWATT C 410-UT5C-A0C0	Q1C51V
4 quadrants - Energy generation									
1/2	4	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	-	CIRWATT C 410-UD1C-10C1	Q1C421
1/2	4	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS485	-	CIRWATT C 410-UD1C-20C1	Q1C425
1/2	4	3x57/110 V a 3x230/400 V	10 (100)A	-	-	ETHERNET	-	CIRWATT C 410-UD1C-30C1	Q1C42D
1/2	4	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	RS232	CIRWATT C 410-UD1C-70C1	Q1C42W
1/2	4	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS485	RS485	CIRWATT C 410-UD1C-80C1	Q1C42U
1/2	4	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	RS485	CIRWATT C 410-UD1C-90C1	Q1C42T
1/2	4	3x57/110 V a 3x230/400 V	10 (100)A	-	-	RS232	ETHERNET	CIRWATT C 410-UD1C-A0C1	Q1C42V
1/2	4	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	-	CIRWATT C 410-UT5C-10C1	Q1C411
1/2	4	3x57/110 V a 3x230/400 V	.../5A	-	-	RS485	-	CIRWATT C 410-UT5C-20C1	Q1C415
1/2	4	3x57/110 V a 3x230/400 V	.../5A	-	-	ETHERNET	-	CIRWATT C 410-UT5C-30C1	Q1C41D
1/2	4	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	RS232	CIRWATT C 410-UT5C-70C1	Q1C41W
1/2	4	3x57/110 V a 3x230/400 V	.../5A	-	-	RS485	RS485	CIRWATT C 410-UT5C-80C1	Q1C41U
1/2	4	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	RS485	CIRWATT C 410-UT5C-90C1	Q1C41T
1/2	4	3x57/110 V a 3x230/400 V	.../5A	-	-	RS232	ETHERNET	CIRWATT C 410-UT5C-A0C1	Q1C41V
Inputs / outputs									
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	4 / 3	Opto	RS232	-	CIRWATT C 410-UD1C-14C0	Q1C522
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	4 / 3	Rele	RS232	-	CIRWATT C 410-UD1C-15C0	Q1C523
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	4 / 3	Opto	RS485	-	CIRWATT C 410-UD1C-24C0	Q1C526
1/2	2	3x57/110 V a 3x230/400 V	10 (100)A	4 / 3	Rele	RS485	-	CIRWATT C 410-UD1C-25C0	Q1C527
1/2	2	3x57/110 V a 3x230/400 V	.../5A	4 / 3	Opto	RS232	-	CIRWATT C 410-UT5C-14C0	Q1C512
1/2	2	3x57/110 V a 3x230/400 V	.../5A	4 / 3	Rele	RS232	-	CIRWATT C 410-UT5C-15C0	Q1C513
1/2	2	3x57/110 V a 3x230/400 V	.../5A	4 / 3	Opto	RS485	-	CIRWATT C 410-UT5C-24C0	Q1C516
1/2	2	3x57/110 V a 3x230/400 V	.../5A	4 / 3	Rele	RS485	-	CIRWATT C 410-UT5C-25C0	Q1C517