CPQT2: 2 Analog outputs / CPQT4: 4 Analog outputs

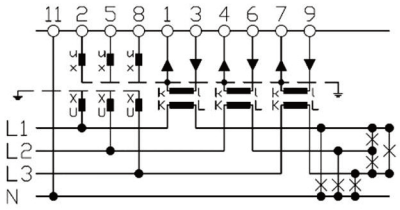
DIN rail, fully programmable, high accuracy, the multi-transducer, can be used with 50, 60 or 16⅔ Hz rated frequencies with a wide range of AC and DC auxiliary supply. This transducer can measure active and reactive powers, power factors, and all other electrical quantities including voltage and current for any 3-phase system. The CPQT can be easily programmed through its USB micro standard port and ConfigLQT free software.

Technical Data

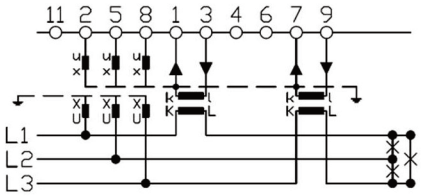
Input	
Voltage range (Un)	100 – 400 V (L-L) main voltage (nominal)
Measuring range	1 – 520 V TRMS L-L 50/60 Hz 1 - 520 V TRMS L-L 16⅔ Hz
Configurable measuring range	0 - 500 V L-L / 0 - 300 V L-N
Frecuency	50/60 Hz (10...40....70...120 Hz) 16⅔ Hz (10...15....18...120 Hz)
Overload voltage	1.5 x Un – continuously, 2 x Un – 10 s
Consumption	Un x 1 mA / Phase
Current Input (In)	1 – 5 A
Measuring range	5 mA – 10 A TRMS
Configurable measuring range	0 – 10 A
Overload current	2 x In continuously, 10 x In 15 s, 40 x In 1 s
Auxiliary power supply	24 – 230 VDC / 90 – 230 V AC ±10 %
Burden	max 7.2 W / 15 VA
Outputs	
Analog outputs	2 or 4
Programmable range	±20 mA, ±5 mA, ±10 V (settings within the range)
External resistance load	Current output: max 750 Ω (15 V) Voltage output: min 750 Ω
Response time	<100 msec
Digital outputs	2 (Energy pulse output)
Analogue output ripple	≤0.2%
Communication	Modbus RS485 (RTU)
Measured quantities	F, U12, U23, U31, U, I, P, S, IS, LF, PF, QF, PA
Accuracy	0.2 (Ref. temp. 23 °C)
Galvanic isolation	Supply, in- and output are galvanically isolated
Connection terminals/Torque	
Humidity	
USB	95% non-condensing
Temperature range	Operation: -10 to +55 C° Storage -40 to +70 C°
Temperature coefficient	< 0.1% / 10 C°
Test voltage	4 kV AC / min
Inputs	Overvoltage cat. III
Pollution degree	2
Dimensions (w x h x d)	70 x 132 x 101 mm – DIN-rail
Weight	approx. 300 gr
Protection	IP40 (housing), IP20 (terminals)
Standard	SS-EN 60688: 2021 Transducers SS-EN 601010 -1 Safety EN 61000-6-2 / -6-4 / -6-5

Configurable system connection

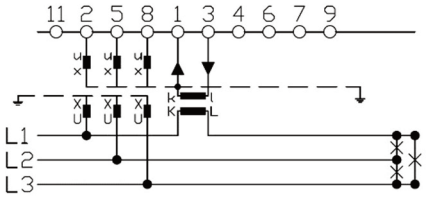
Code	Application	I1	I2	I3	N	U1	U2	U3	U12	U23	U31
00	4 wire, 3 phases symmetric load	x	-	-	x	x	-	-	-	-	-
01	1 wire, 1 phase	x	-	-	x	x	-	-	-	-	-
02	3 wire, 3 phase symmetric load	x	-	-	-	-	-	-	x	-	-
03	3 wire, 3 phase symmetric load	x	-	-	-	-			-	x	-
04	3 wire, 3 phase symmetric load	x	-	-	-	-	-	-	-	-	x
05	3 wire, 3 phase symmetric load	x	-	-	-	x	x	x	x	x	x
09	3 wire, 3 phase asymmetric load	x	-	x	-	x	x	x	x	x	x
11	4 wire, 3 phase asymmetric load	x	x	x	x	x	x	x	x	x	x
11	4 wire, 3 phase asymmetric load	x	x	x	-	x	x	x	x	x	x



Connection -11



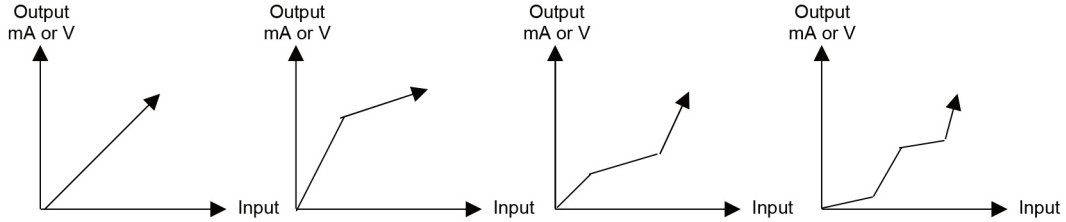
Connection -09



Connection -05

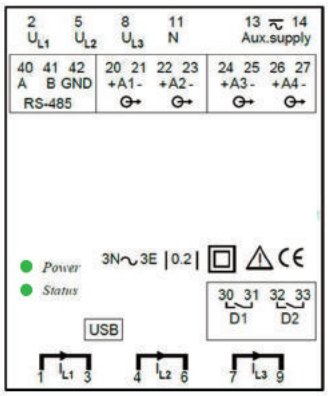
Configurable characteristic point (analog outputs)

Up to setting 5 points

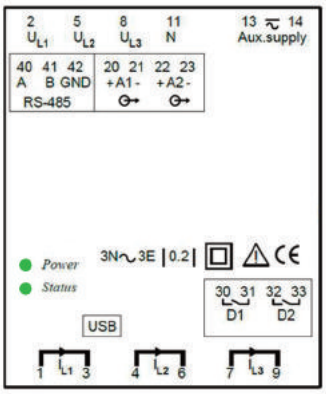


Connections:

CPQT-4



CPQT-2



Dimensions:

Celsa Messgerate España S.L.
www.celsamessgerate-spain.com
info@celsaspain.com / +34 96 130 93 78

Configurable system connection

Quantity	Unit	Description	Measured	Value
F	Hz	Frequency	System	F
I	A	Current	System	I = (I1+I2+I3)/3
I1	A	Phase current	L1	I1
I2	A	Phase current	L2	I2
I3	A	Phase current	L3	I3
U	V	Voltage	System	U = (U1+U2+U3)/3
U1	V	Phase voltage	L1-N	U1
U2	V	Phase voltage	L2-N	U2
U3	V	Phase voltage	L3-N	U3
U12	V	Phase-phase voltage	L1-L2	U12
U23	V	Phase-phase voltage	L2-L3	U23
U31	V	Phase-phase voltage	L3-L1	U31
P	W	Active power	System	P = (P1+P2+P3)/3
P1	W	Active power	L1	P1
P2	W	Active power	L2	P2
P3	W	Active power	L3	P3
Q	Var	Reactive power	System	Q = (Q1+Q2+Q3)/3
Q1	Var	Reactive power	L1	Q1
Q2	Var	Reactive power	L2	Q2
Q3	Var	Reactive power	L3	Q3
S	VA	Apparent power	System	S = (S1+S2+S3)/36
S1	VA	Apparent power	L1	S1 = U1*I1
S2	VA	Apparent power	L2	S2 = U2*I2
S3	VA	Apparent power	L3	S3 = U3*I3
PF	-	Active power factor (cosϕ)	System	PF = (1+2+3)/3
PF1	-	Active power factor (cosϕ1)	L1	PF1
PF2	-	Active power factor (cosϕ2)	L2	PF2
PF3	-	Active power factor (cosϕ3)	L3	PF3
QF	-	Reactive power factor (sinϕ)	System	QF = (1+2+3)/3
QF1	-	Reactive power factor (sinϕ1)	L1	QF1
QF2	-	Reactive power factor (sinϕ2)	L2	QF2
QF3	-	Reactive power factor (sinϕ3)	L3	QF3
LF	-	LF Factor	System	LF = sign(Q)*(1-(PF))
LF1	-	LF Factor	L1	LF1 = sign(Q1)*(1-(PF1))
LF2	-	LF Factor	L2	LF2 = sign(Q2)*(1-(PF2))
LF3	-	LF Factor	L3	LF3 = sign(Q3)*(1-(PF3))
PA	Deg	Phase angle ϕ	System	PA = (1+2+3)/3
PA1	Deg	Phase angle ϕ1	L1	PA1
PA2	Deg	Phase angle ϕ2	L2	PA2
PA3	Deg	Phase angle ϕ3	L3	PA3
IS	A	Bidirectional current	System	IS = (1+2+3)/3
IS1	A	Bidirectional current	L1	IS1
IS2	A	Bidirectional current	L2	IS2
IS3	A	Bidirectional current	L3	IS3

Order information required:

- number of analog outputs: 2 (CPQT-2) or 4(CPQT-4)
- Range of analog outputs: ±20 mA, ±5 mA or ±10 V
- Frequency: 50/60Hz or 16⅔ Hz

Order example:

- CPQT4 with 4 analog outputs, 2 digital, RS485, ±20 mA, 50/60 Hz with standard configuration
- CPQT2 with 2 analog outputs, 2 digital, RS485, ±10 V, 50/60 Hz with standard configuration
- CPQT2 with 2 analog outputs, 2 digital, RS485, ±20 mA, 16⅔ Hz, with standard configuration