EN

www.qeed.it

D.E.M.

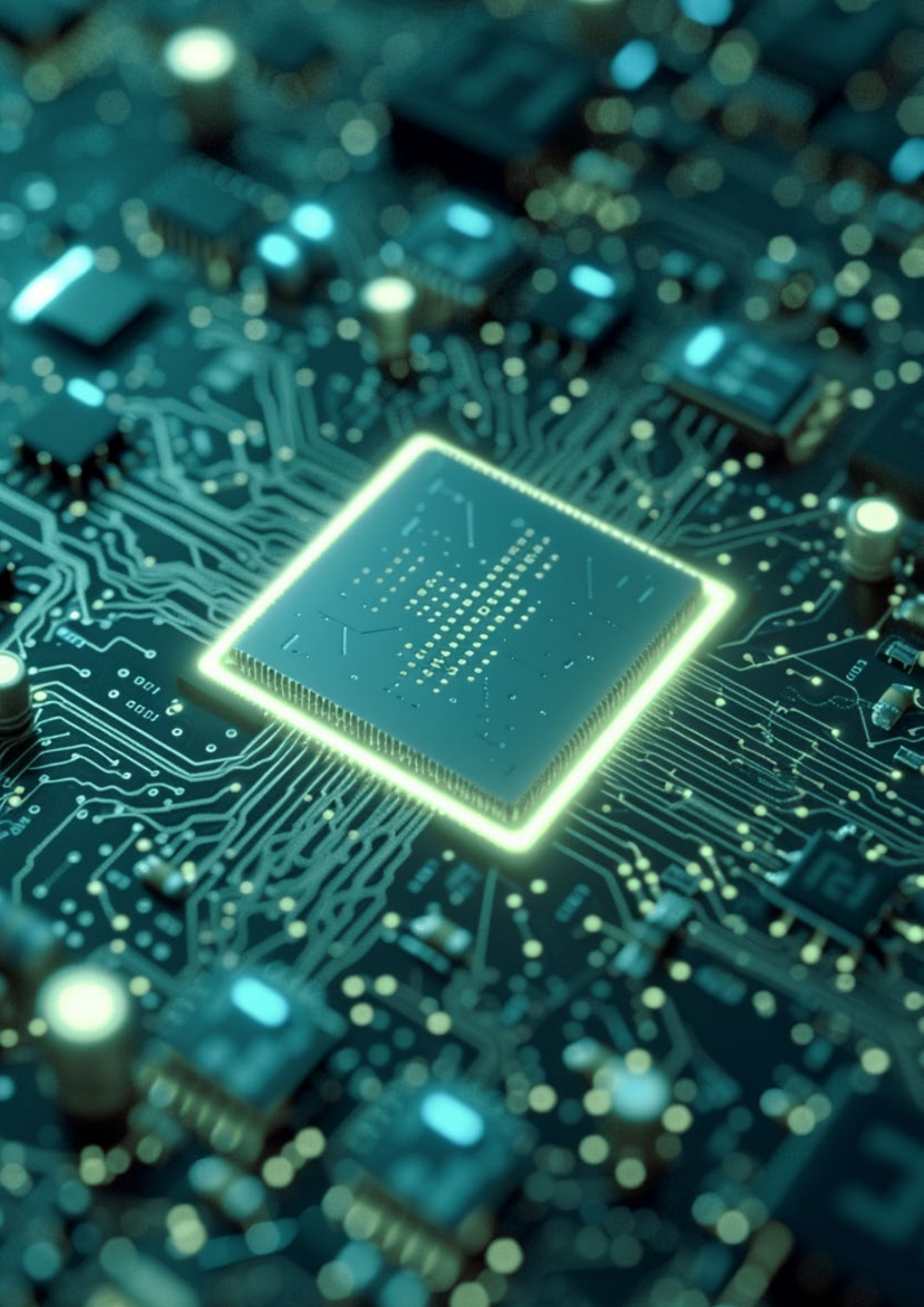
ELECTRONIC PERFORMANCE

QEED

QUALITY ELECTRONIC DESIGN

www.dem-it.com

MADE IN ITALY



D.E.M. ELECTRONIC PERFORMANCE

INDEX

D.E.M.
ELECTRONIC PERFORMANCE

DEM SpA is a European leader in the design and production of **anti-interference filters (RFI)** for the household appliance sector. We produce electronic boards in partnership or on behalf of third parties with leading multinational companies and, since 2013, with **the QEED brand** we create interfaces for automation; we also develop and produce custom electronic boards for the market, turnkey.
The company, based in Veneto and with two production sites, in Croatia and Bosnia, is constantly growing, thanks to an excellent research and development department.


DEM SPA

ITALY
Headquarters
ADMINISTRATIVE HEADQUARTERS
2,000 m² with over 50 people

DEM DOO

CROATIA
Production branch
PRODUCTION HEADQUARTERS
3,400 m² with over 230 people

FEAG DOO

BOSNIA
Production branch
PRODUCTION HEADQUARTERS
1.300 m² with over 150 people

The activity of **R&D** is confirmed by our laboratory EMC tests, thanks to which we can support customers in the development of their products and find the best solution for EMC inconsistencies. **DEM follows the study of the product** in all its aspects, up to the supply of the finished and certified product. **All DEM proprietary products are tested and proven** before being released, to ensure the highest possible quality and reliability.

QUALITY ELECTRONIC DESIGN

According to customers' needs and product series,
our filters can be certified with the brands:

In addition to the series present in the catalogue, we are able to create CUSTOM solutions to customer specifications. For any details, contact the sales office.

OUR CERTIFICATIONS

Ferrite core

Ferrite core which works in a broadband frequency range
Variety of codes for the best possible interference suppression

CODICE DEM	DIAMETRO (mm)	TIPOLOGIA
182002804	13	toroidale
185625001	25	toroidale
185636000	36	toroidale
182001204	13	A pinza
182002800	13	A pinza
182002808	5,2	A pinza
182002812	7,5	A pinza
182002816	9,5	A pinza

APPLICATIONS

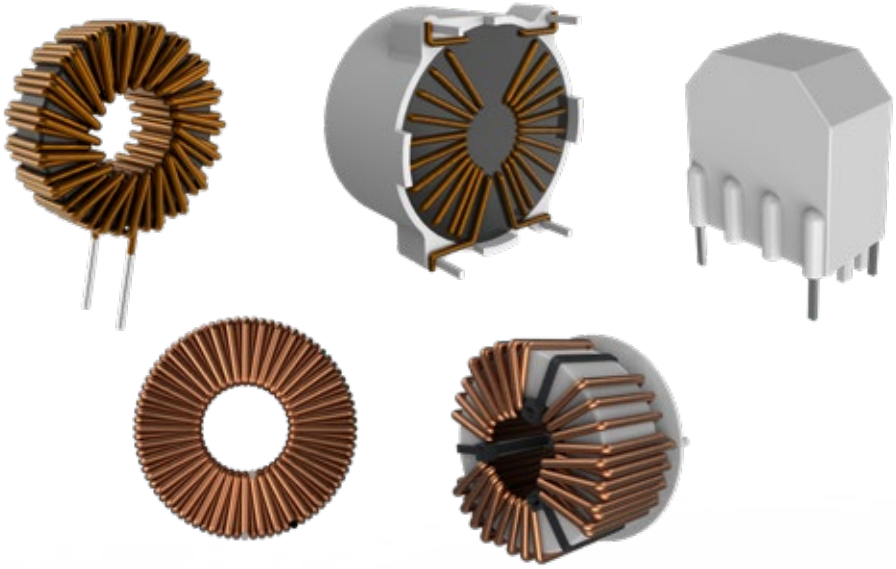
Wires

Coaxial cables

Wire-wrapping cables, Multiconductor wires

Data cable and gage signal lines

FL series



INDUCTORS

CHARACTERISTICS	
RANGE OF VALUES	custom
VOLTAGES [V]	250V or 450V
CURRENT [A]	0.5A ≤ I ≤ 100A
TERMINATIONS	pins or wires
HOUSING	various

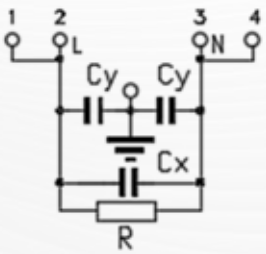
HOUSEHOLD APPLIANCE AND SIMILAR

F3CC_F series

CAPACITIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 0.22µF 2.7nF ≤ Cy ≤ 27nF 1MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
TERMINATIONS	faston
ASSEMBLY	metal bracket
HOUSING	plastic case 38x43.5mm

WIRING DIAGRAMS



APPLICATIONS

Relay

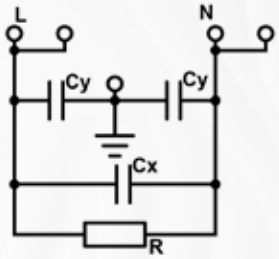
Contactors

F3CF_L series

CAPACITIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 0.47µF 2.7nF ≤ Cy ≤ 27nF 0.68MΩ ≤ R ≤ 2.2MΩ
VOLTAGES [V]	250V
TERMINATIONS	faston
ASSEMBLY	metal bracket
HOUSING	plastic case 38x38 mm

WIRING DIAGRAMS



APPLICATIONS

Relay

Contactors

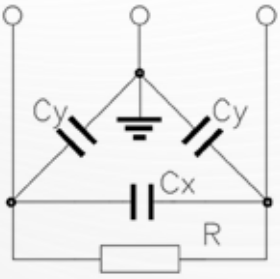
HOUSEHOLD APPLIANCE AND SIMILAR

FC_F series

CAPACITIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 0.47µF 2.7nF ≤ Cy ≤ 33nF 0.68MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
TERMINATIONS	wires with faston / eyelet
ASSEMBLY	free installation
HOUSING	plastic case 30x40mm

WIRING DIAGRAMS



APPLICATIONS

Relay

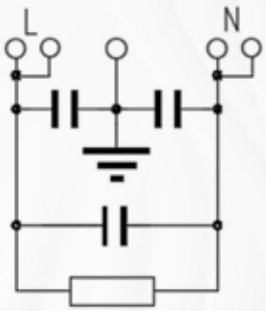
Contactors

FCN series

CAPACITIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 0.47µF 2.7nF ≤ Cy ≤ 27nF
VOLTAGES [V]	250V
TERMINATIONS	faston
ASSEMBLY	metal bracket
HOUSING	plastic case 31x43mm

WIRING DIAGRAMS



APPLICATIONS

Relay

Contactors

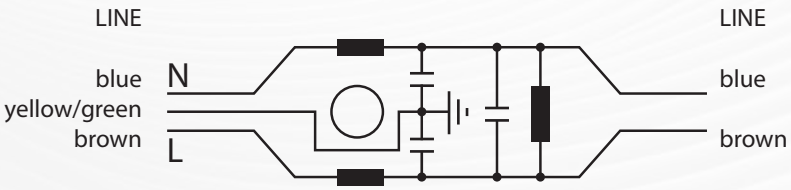
HOUSEHOLD APPLIANCE AND SIMILAR

PC/FLPC

CAPACITIVE / INDUCTIVE FILTER

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 0.27µF 2.7nF ≤ Cy ≤ 27nF 1A ≤ L = 0.5mH ≤ 3A 1MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	I ≤ 3A
TERMINATIONS	cable
ASSEMBLY	metal bracket
HOUSING	plastic case 41x21x74mm

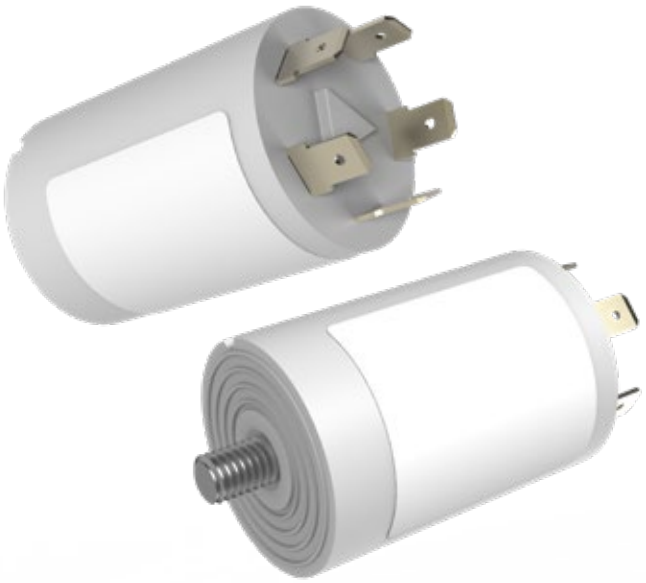
WIRING DIAGRAMS



APPLICATIONS

Hoods

FLC series

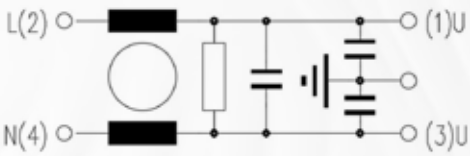


CAPACITIVE / INDUCTIVE FILTER
general purpose

CE

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 1.0µF 1.0 nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 6.0mH 0.68MΩ ≤ R ≤ 1.5MΩ
VOLTAGES [V]	250V
CURRENT [A]	1A ≤ I ≤ 16A
TERMINATIONS	faston
ASSEMBLY	M8 threaded shank
HOUSING	plastic case 38x56 mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

Catering

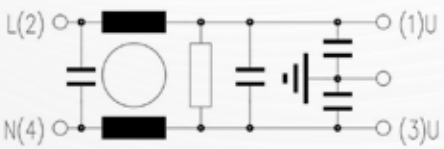
HOUSEHOLD APPLIANCE AND SIMILAR

FLC2H/FLC2H_E series

CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.47µF ≤ Cx ≤ 1.0µF 2.2 nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 4.0mH 0.33MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	10A ≤ I ≤ 16A
TERMINATIONS	faston
ASSEMBLY	metal bracket / M8 threaded shank
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

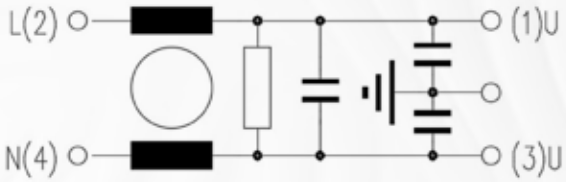
Catering

FLCB series

CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 0.47µF 2.7nF ≤ Cy ≤ 27nF 0.3mH ≤ L ≤ 2.0mH 0.68MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	I ≤ 10A
TERMINATIONS	faston
ASSEMBLY	metal bracket / M8 threaded shank
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

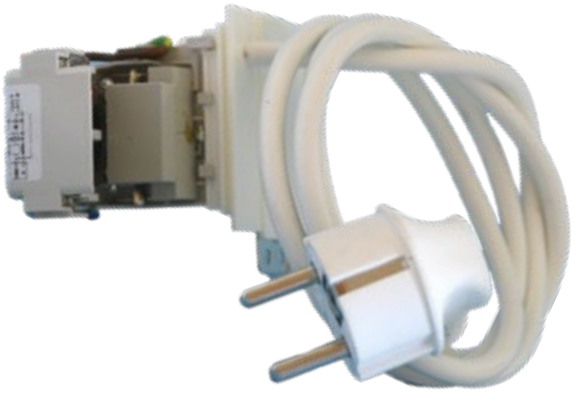
Vending machines

Refrigeration

Catering

HOUSEHOLD APPLIANCE AND SIMILAR

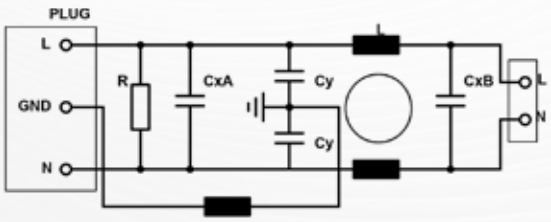
FLCF series



CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 1.5µF 2.7nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 2.5mH 0.68MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	I = 3A / 10A / 16A
TERMINATIONS	cable with integrated plug
ASSEMBLY	M8 threaded shank
HOUSING	plastic case 38x38mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

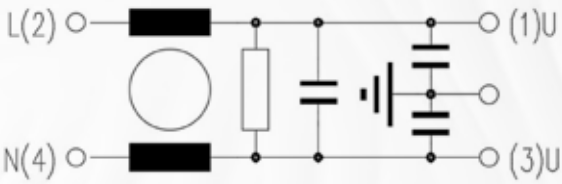
Catering

FLCH series

CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	Cx = 1.0µF 2.7nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 2.0mH 0.68MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	10A ≤ I ≤ 16A
TERMINATIONS	faston
ASSEMBLY	metal bracket / M8 threaded shank
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

Catering

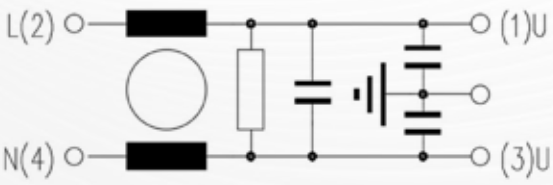
HOUSEHOLD APPLIANCE AND SIMILAR

FLCR series

CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx ≤ 1.0µF 1.0nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 6.0mH 0.68MΩ ≤ R ≤ 1.5MΩ
VOLTAGES [V]	250V
CURRENT [A]	1A ≤ I ≤ 16A
TERMINATIONS	faston
ASSEMBLY	metal bracket
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

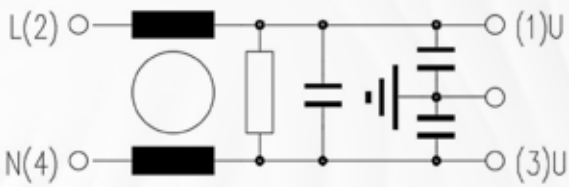
Catering

FLCR_E series

CAPACITIVE / INDUCTIVE FILTER
general purpose without epoxy resin

CHARACTERISTICS	
RANGE OF VALUES	Cx = 1.0µF 4.7nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 1.0mH 0.68MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	I ≤ 16A
TERMINATIONS	faston
ASSEMBLY	metal bracket
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

Catering

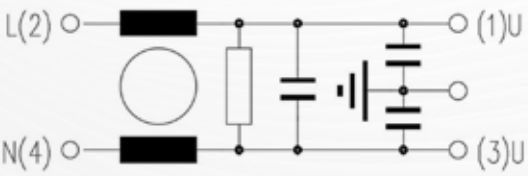
HOUSEHOLD APPLIANCE AND SIMILAR

FLCS series

CAPACITIVE / INDUCTIVE FILTER
general purpose small footprint

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx = 0.33µF 0.47 nF ≤ Cy ≤ 10nF 0.5mH ≤ L ≤ 40 mH 0.68MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	0,5A ≤ I ≤ 7A
TERMINATIONS	faston
ASSEMBLY	M8 threaded shank
HOUSING	plastic case 38x28mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Gas boilers

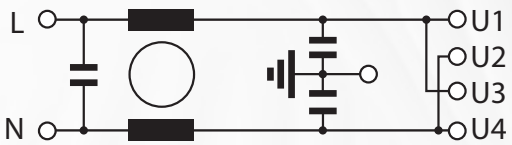
Vacuum cleaner

FLCV series

CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx = 1.0µF 2.7nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 2.0mH 0.33MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	10A ≤ I ≤ 16A
TERMINATIONS	faston
ASSEMBLY	metal bracket
HOUSING	plastic case 38x38mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

Catering

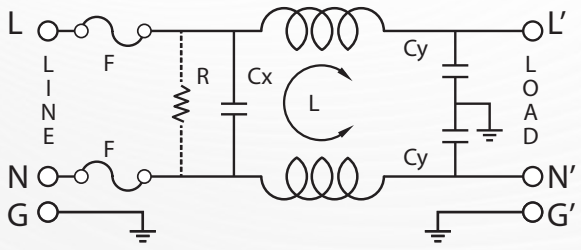
HOUSEHOLD APPLIANCE AND SIMILAR

FSLC series

CAPACITIVE / INDUCTIVE FILTER
INTEGRATED IEC socket

CHARACTERISTICS	
RANGE OF VALUES	Cx = 0.1µF Cy = 3.3nF L = 4.0mH R = 1.0MΩ
CURRENT [A]	I = 2A
ASSEMBLY	various
HOUSING	various

WIRING DIAGRAMS



APPLICATIONS

Small
home appliances

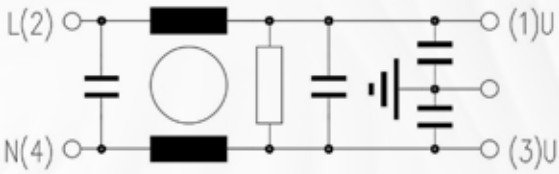
Vending
machines

FR5H series

CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx = 1.5µF 2.7nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 2.0mH 0.33MΩ ≤ R ≤ 0.68MΩ
VOLTAGES [V]	250V
CURRENT [A]	10A ≤ I ≤ 16A
TERMINATIONS	faston rast 5
ASSEMBLY	metal bracket
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

Catering

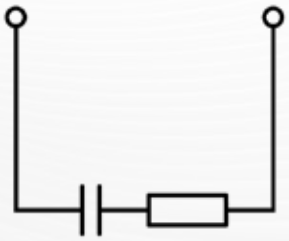
HOUSEHOLD APPLIANCE AND SIMILAR

FRC series

SNUBBER

CHARACTERISTICS	
RANGE OF VALUES	various
VOLTAGES [V]	250V
TERMINATIONS	wires
ASSEMBLY	Free installation
HOUSING	plastic case 23x42mm

WIRING DIAGRAMS



APPLICATIONS

Contactors

Switches

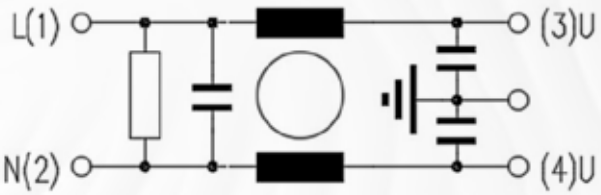
Relay

FZ series

CAPACITIVE / INDUCTIVE FILTER
general purpose

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx = 1.0 µF 1.0 nF ≤ Cy ≤ 27nF 0.5mH ≤ L ≤ 2.0mH 0.33MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
CURRENT [A]	10A ≤ I ≤ 16A I I = 20A
TERMINATIONS	various
ASSEMBLY	various
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Home appliances

Vending machines

Refrigeration

Catering

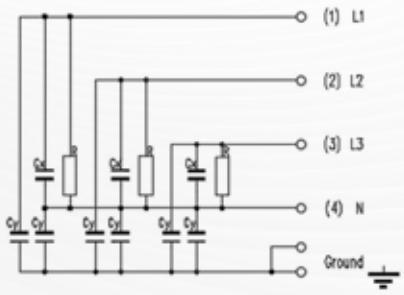
HOUSEHOLD APPLIANCE AND SIMILAR

FZP series

THREE-PHASE CAPACITIVE FILTERS

CHARACTERISTICS	
RANGE OF VALUES	0.1 µF ≤ Cx = 0.68µF 2.7nF ≤ Cy ≤ 33nF 0.68MΩ ≤ R ≤ 10MΩ
VOLTAGES [V]	250V
TERMINATIONS	various
ASSEMBLY	various
HOUSING	plastic case 38x56mm

WIRING DIAGRAMS



APPLICATIONS

Contactors

Relay

Input filters that combine an IEC input and mains filter with excellent filter attenuation in a small form factor. Practical solution in order to meet EMI limits in a short time. A wide choice on amperage, output connections and mounting.

APPLICATIONS

- Home appliances
- Vending machines
- Refrigeration
- Catering

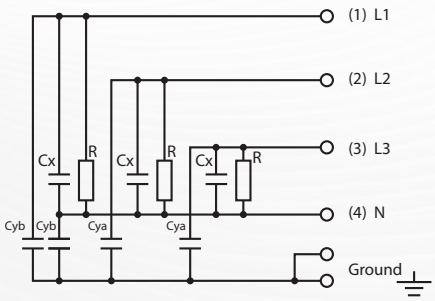
PROFESSIONAL

FCP series

FILTERS FOR RESIDENTIAL, COMMERCIAL APPLICATIONS

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx = 2.2µF 2.7nF ≤ Cy ≤ 47nF 0.68MΩ ≤ R ≤ 2.2MΩ
VOLTAGES [V]	250V / 440V
TERMINATIONS	wires / faston
ASSEMBLY	various
HOUSING	various

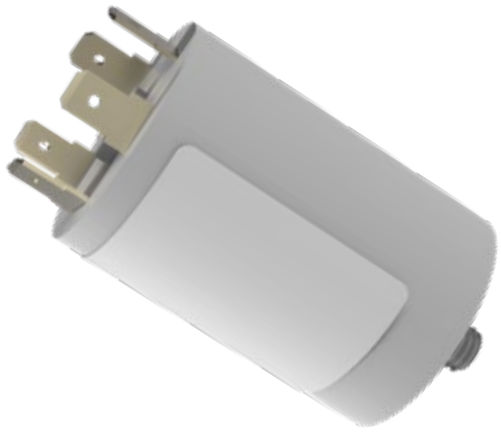
WIRING DIAGRAMS



APPLICATIONS

Professional equipment

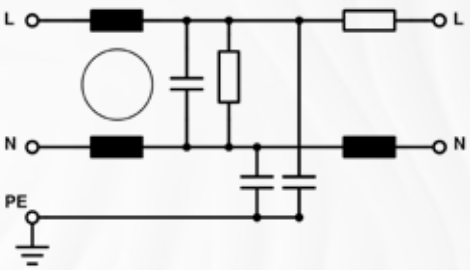
FLP series



FILTERS FOR RESIDENTIAL, COMMERCIAL APPLICATIONS

CHARACTERISTICS	
RANGE OF VALUES	0.15µF ≤ Cx = 0.47µF 10 nF ≤ Cy ≤ 27nF 35µH ≤ L ≤ 27mH 3.3Ω ≤ R ≤ 680KΩ
VOLTAGES [V]	250V
CURRENT [A]	1A ≤ I ≤ 10A
TERMINATIONS	wires / faston
ASSEMBLY	M8 threaded shank
HOUSING	metal case 50x80mm / Metal case 38x50x63mm

WIRING DIAGRAMS



APPLICATIONS

Professional equipment

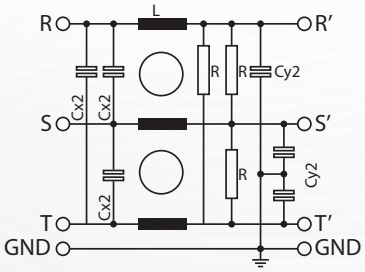
PROFESSIONAL

FLCD series

FILTERS FOR DIN RAIL MOUNTING

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx = 0.47µF 3.3nF ≤ Cy ≤ 15nF 0.5mH ≤ L ≤ 8mH 0.33MΩ ≤ R ≤ 2.2MΩ
VOLTAGES [V]	250V / 440V
CURRENT [A]	1A ≤ I ≤ 25A
TERMINATIONS	screw terminal
ASSEMBLY	DIN rail
HOUSING	plastic case 52x57x95mm

WIRING DIAGRAMS



APPLICATIONS

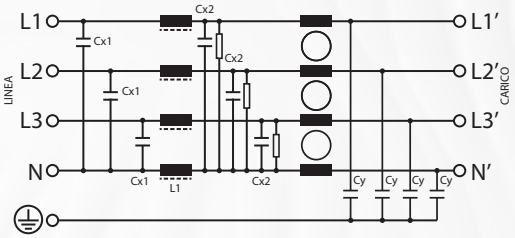
Switchboards

FLPM series

FILTERS FOR RESIDENTIAL, COMMERCIAL APPLICATIONS

CHARACTERISTICS	
RANGE OF VALUES	0.1µF ≤ Cx = 2.2 µF 4.7nF ≤ Cy ≤ 470nF 30µH ≤ L ≤ 8mH 0.15MΩ ≤ R ≤ 1.5MΩ
VOLTAGES [V]	440V
CURRENT [A]	12A ≤ I ≤ 32A
TERMINATIONS	M4 threads/screw
ASSEMBLY	holes for fixing
HOUSING	metal case 85x60x140mm

WIRING DIAGRAMS



APPLICATIONS

Professional equipment

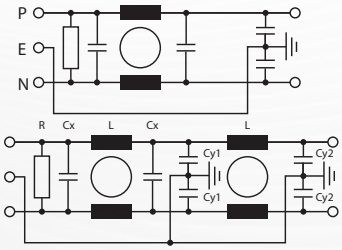
PROFESSIONAL

FLCP series

FILTERS FOR RESIDENTIAL, COMMERCIAL APPLICATIONS

CHARACTERISTICS	
RANGE OF VALUES	various
VOLTAGES [V]	various
CURRENT [A]	various
TERMINATIONS	faston
ASSEMBLY	holes for fixing
HOUSING	metal case 50x38x63mm

WIRING DIAGRAMS



APPLICATIONS

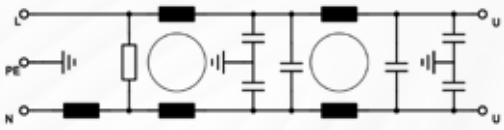
Professional equipment

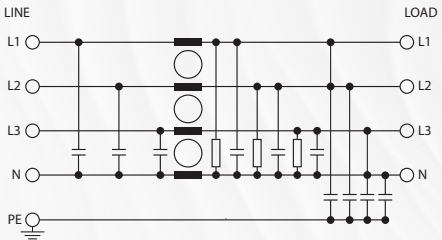
FLCM series

FILTERS FOR HIGH CURRENTS

CHARACTERISTICS		
RANGE OF VALUES	various	various
VOLTAGES [V]	230V Single Phase	440V Three Phase
CURRENT [A]	I ≤ 30A	I ≤ 30A
TERMINATIONS	M4 screw	M4 screw
ASSEMBLY	holes for fixing	holes for fixing
HOUSING	metal case 85x60x140mm	metal case 85x60x180mm

WIRING DIAGRAMS





APPLICATIONS

Data Centers

Refrigeration systems

UPS

PROFESSIONAL

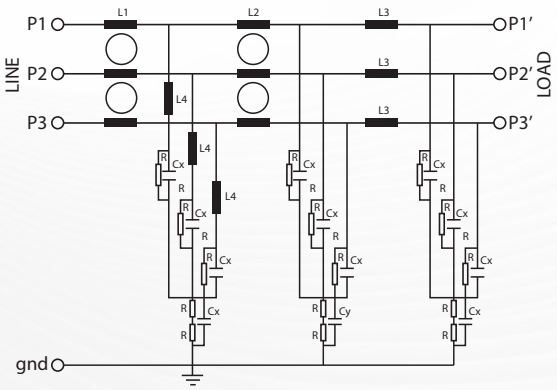
FLCM5x series

FILTERS FOR HIGH CURRENTS

CE

CHARACTERISTICS					
ITEM	VOLTAGES [V]	CURRENT [A]	TERMINATIONS	ASSEMBLY	HOUSING
FLCM589000	250V	250A	copper bars	holes for fixing	metal case
FLCM585000	440V	400A	copper bars	holes for fixing	metal case

WIRING DIAGRAMS



APPLICATIONS

Professional equipment

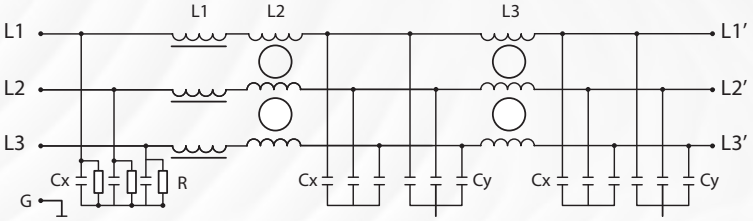
FLCM0x series

OTHERS FOR HIGH CURRENTS

CE

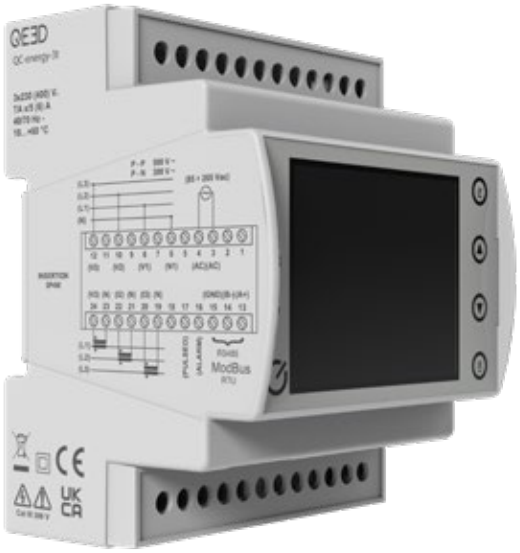
CHARACTERISTICS					
ITEM	VOLTAGES [V]	CURRENT [A]	TERMINATIONS	ASSEMBLY	METAL HOUSING
FLCM040006	250V/440V Three Phase	6A	M4 screw	holes for fixing	60x105x150mm
FLCM040010	250V/440V Three Phase	10A	M4 screw	holes for fixing	60x105x150mm
FLCM040015	250V/440V Three Phase	15A	M4 screw	holes for fixing	60x105x150mm
FLCM040020	250V/440V Three Phase	20A	M4 screw	holes for fixing	60x105x150mm
FLCM060025	250V/440V Three Phase	25A	M6 screw	holes for fixing	80x130x200mm
FLCM060030	250V/440V Three Phase	30A	M6 screw	holes for fixing	80x130x200mm
FLCM060040	250V/440V Three Phase	40A	M6 screw	holes for fixing	80x130x200mm
FLCM060050	250V/440V Three Phase	50A	M6 screw	holes for fixing	80x130x200mm
FLCM060065	250V/440V Three Phase	65A	M6 screw	holes for fixing	80x130x200mm
FLCM080080	250V/440V Three Phase	80A	M8 screw	fholes for fixing	100x170x260mm
FLCM080100	250V/440V Three Phase	100A	M8 screw	holes for fixing	100x170x260mm
FLCM080120	250V/440V Three Phase	120A	M8 screw	holes for fixing	100x170x260mm
FLCM100150	250V/440V Three Phase	150A	M10 screw	holes for fixing	100x170x260mm
FLCM100200	250V/440V Three Phase	200A	M10 screw	holes for fixing	100x220x315mm
FLCM0B0300	250V/440V Three Phase	300A	copper bars	holes for fixing	155x170x290mm
FLCM0B0400	250V/440V Three Phase	400A	copper bars	holes for fixing	155x170x290mm
FLCM0B0500	250V/440V Three Phase	500A	copper bars	holes for fixing	155x170x260mm
FLCM0B0630	250V/440V Three Phase	630A	copper bars	holes for fixing	162x205x350mm
FLCM0B0800	250V/440V Three Phase	800A	copper bars	holes for fixing	162x205x350mm
FLCM0B1000	250V/440V Three Phase	1000A	copper bars	holes for fixing	162x205x350mm

WIRING DIAGRAMS



THREE-PHASE

QC-ENERGY-3T



★ NEW ★

Three-phase AC/DC power meter capable
of managing universal inputs for current transformers
(1/5A, 333 mV, Rogowski).

- Web Server integrated on board
- Graphic display 320x240 65,536 colors
- Luminance (cd/m2) 260nit
- Modbus TCP (Ethernet e Wi-Fi STA-AP) e Modbus RTU RS485
- Bidirectional Energy measurement
- Compliant with 0.5S (kWh) class of EN62053-22
- Compliant with 0.5S (kVARh) class of EN62053-24
- Accuracy ±0.5% RDG
- Current inputs for transformers with secondary
  (1A / 5A, 0 - 333mV, Rogowski probes)
- Impulsive output for energy counter
- TRMS measurement of distorted waveforms (voltage / current)
- Neutral measurement
- 2 MOSFET outputs, one for pulsed output and one for alarms.
- 4 DIN module

CHARACTERISTICS	
POWER SUPPLY	85 - 265V_{AC}
INSULATION	4kV_{RMS} between power supply and communication ports 4kV_{RMS} between RS485 and measurement inputs 1,5kV_{RMS} between power supply and measurement
INPUT VOLTAGE	Direct connection up to 500V_{RMS} phase-phase and 300V phase-neutral maximum (40 - 70Hz) Transformation ratio for current and voltage trasformers configurable
INPUT CURRENT	1A / 5A Rogowski probes 0 - 333mV
OUTPUTS	Modbus TCP (Ethernet 10/100 e Wi-Fi AP-STA) RS485 Modbus RTU #2 open drain outputs: 1x digital output (with threshold alarm) 1x digital output with internal pull-up 3.3V (pulse meter)
TYPE OF MEASUREMENT	TRMS

APPLICATIONS

Control panels and distribution

Energy control

Control panels

Machine tools or production

QC-ENERGY-3T

MEASUREMENTS AVAILABLE	VERSION		
	STD	PLUS	PRO
I_{RMS} - V_{RMS} - I_{PK} - V_{PK} per phase	✓	✓	✓
Active power (W), Reactive power (VAR), Apparent power (VA) per phase	✓	✓	✓
Bidirectional energy (kWh), positive and negative per phase and total	✓	✓	✓
Active and reactive energy (kVARh), inductive / capacitive, per phase and total	✓	✓	✓
Power factor (inductive / capacitive) per phase and total	✓	✓	✓
Crest factor per phase and total	✓	✓	✓
Frequency	✓	✓	✓
Cosø per phase and average	✓	✓	✓
Tanø per phase and average		✓	✓
Minimum, average and max powers per phase and average		✓	✓
Power factor distortion (inductive / capacitive) per phase and average		✓	✓
THD (V, I), TDD		✓	✓
Minimum, average and max powers		✓	✓
Phase control		✓	✓
Peak power request, per phase and total		✓	✓
Monthly max power request achievement memorization (month, day, hour, minutes), per phase and total		✓	✓
Settable time beyond threshold, per phase and total		✓	✓
K factor (according to IEEE Standard 1100-1992)		✓	✓
Internal temperature [°C]		✓	✓
Harmonic analysis up to the 63rd			✓
Interharmonic analysis up to the 63rd			✓
SAG, SWELL, Voltage dips			✓
Automatic phase recognition			✓

THREE-PHASE

QE-POWER-T

PATENTED

Three-phase network analyzer with universal current input that accept on the same inputs current transformers can have both current or voltage output.
Case of only 1 DIN, ideal for electrical distribution panels.

- Equipped with RS485 Modbus RTU serial output for reading all parameters and digital for alarms
- Configuration via free software

GENERAL CHARACTERISTICS

CHARACTERISTICS		VERSION STD	PLUS	PRO
POWER SUPPLY	10 - 40V_{DC} o 19 - 28V_{AC} - 50/60Hz			
INPUT VOLTAGE	Direct connection up to 500V RMS phase-phase and 300V phase-neutral maximum (40 - 70Hz)			
MEASUREMENTS AVAILABLE	I_{RMS} - V_{RMS} - I_{PK} - V_{PK}	✓	✓	✓
	Active power (W), Reactive power (VAR), Apparent power (VA)	✓	✓	✓
	Bidirectional energy (kWh), positive and negative per phase and total	✓	✓	✓
	Active and reactive energy (kVARh), per phase and total	✓	✓	✓
	Power factor (inductive / capacitive) and crest factor per phase and total	✓	✓	✓
	Frequency	✓	✓	✓
	Tanφ per phase and average		✓	✓
	Average power factor, per phase and total		✓	✓
	Power factor distortion (inductive / capacitive) per phase and average		✓	✓
	THD (V, I) per phase and total		✓	✓
	Minimum, average and max powers per phase and total		✓	✓
	K factor (according to IEEE Standard 1100-1992)		✓	✓
	Harmonic analysis up to the 63rd			✓
	Interharmonic analysis up to the 63rd			✓
	SAG, SWELL, Voltage dips			✓
	Automatic phase recognition			✓

APPLICATIONS

Control panels and distribution

Energy control

Control panels

Machine tools or production

QC-POWER-P96

The QC-POWER-P96 is a bi-directional power meter and Network Analyzer running from panel 96 x 96mm.

- Manages current secondaries from 1 to 5A accuracy class 1 for energy measurements
- THD and harmonic analysis up to the 31st
- Bidirectional power and energy measurements

The instrument is equipped with RS485 Modbus RTU interface and pulsed output.

MAIN FEATURES	
POWER SUPPLY	100 - 230V_{AC} (-15%...+12%) @50/60Hz (±5%)
INPUT CURRENT	Rated 5A AC (minimum 11mA - max 6A)
INPUT VOLTAGE	11 - 300V_{AC} (LN), 19 - 519V_{AC} (LL), Category III
MEASUREMENTS AND PRECISION	
VOLTAGE	0.5% F.S.
CURRENT	0.5% F.S.
ACTIVE POWER	1%
REACTIVE POWER	1%
POWER FACTOR	±0,1%
FREQUENCY	±0,1% (45 - 65Hz)
OUTPUTS	RS485 Modbus RTU and Pulsed (24V_{DC} max)

APPLICATIONS

Control panels and distribution

Energy control

Control panels

Machine tools or production

SINGLE-PHASE

QI-POWER-485-xxx

The QI-POWER-485
(in its 3 current sizes 50, 100 and 300A)
is a single-phase network analyzer
with direct measurement of both AC (TRMS)
and DC current and energy without the need
of external CTs.

MAIN FEATURES			
	QI-POWER-485	QI-POWER-485-100	QI-POWER-485-300
CURRENT MEASUREMENT	50A AC/DC	100A AC/DC	300A AC / 400A DC
VOLTAGE MEASUREMENT	800 V_{AC} 1000 V_{DC}		
POWER SUPPLY	9 - 30 V_{DC} Protected against polarity reversals and overtemperatures		
ACCURACY @25°C up to 400Hz	Voltage, current, active power: <0.5% F.S. Frequency: ±0.1Hz on reading Energy: ±1% of the read value V_{PEAK} - I_{PEAK}: ±5% F.S.		
TYPE OF MEASUREMENT	RMS or DC		
OUTPUTS	RS485 Modbus RTU		
MEASUREMENT AVAILABLE VIA RS485	I_{RMS} - V_{RMS} - I_{PEAK} - V_{PEAK}		
	P: active power (W), Q: reactive power (VAR), S: apparent power (VA)		
	Bidirectional energy (kWh), positive and negative		
	Frequency, Cosφ, THD		

APPLICATIONS

- Control panels and distribution
- Energy control
- Inverter
- PV systems
- ARON connection
- Control panel
- Machine tools or production
- Charging columns
- UPS

QI-POWER-485-xxx-LV

The QI-POWER-485-xxx-LV is the low voltage version of the QI-POWER-485-xxx single-phase network analyzer, capable of measuring current in the various sizes provided with voltages up to 80 VAC / 100 VDC.

MAIN FEATURES		
	QI-POWER-485-LV	QI-POWER-485-300-LV
CURRENT MEASUREMENT	50A AC/DC	300A AC / 400A DC
VOLTAGE MEASUREMENT	$80V_{AC}$ $100V_{DC}$	
POWER SUPPLY	9 - 30 V_{DC} Protected against polarity reversals and overtemperatures	
ACCURACY @25°C up to 400Hz	Voltage, Current, Active power: <0.5% F.S. Frequency: ±0.1Hz on reading Energy: ±1% of the read value V_{PEAK} - I_{PEAK}: ±5% F.S.	
TYPE OF MEASUREMENT	RMS or DC	
OUTPUTS	RS485 Modbus RTU	
MEASUREMENTS AVAILABLE VIA RS485	I_{RMS} - V_{RMS} - I_{PEAK} - V_{PEAK}	
	P: active power (W), Q: reactive power (VAR), S: apparent power (VA)	
	EBidirectional energy (kWh), positive and negative	
	Frequency, Cosφ, THD	

APPLICATIONS

- Charging columns
- Battery monitoring
- UPS
- DC motors measurement

SINGLE-PHASE

QA-POWER-M(-LV)

★ UPDATED FEATURE ★

Direct insertion single-phase AC/DC power meter.

- Configurable via USB
- DIN rail mounting
- 4kV galvanically separated input from alarm contact and programmable analogue output, analogue output and RS485 Modbus RTU
- Customizable input for voltage transducers up to 60mV
- Datalogger via USB with pen-drive, data download in .csv format complete with date and time (integrated RTC Real Time Clock)

MAIN FEATURES		
	QA-POWER-M	QA-POWER-M-LV
INPUTS (fully configurable)	VOLTAGE: up to $600V_{AC}$ / $1000V_{DC}$	VOLTAGE up to $60V_{AC}$ / $100V_{DC}$
	CURRENT up to 10A AC/DC (higher currents with external CT setting the transformation ratio via software)	
POWEER SUPPLY	$10 - 40V_{DC}$ / $20 - 28V_{AC}$ - 50/60 Hz	
MEASUREMENT AVAILABLE VIA RS485	I_{RMS} - V_{RMS} - I_{PEAK} - V_{PEAK}	
	P: active power (W), Q: reactive power (VAR), S: apparent power (VA)	
	Bidirectional energy (kWh), positive and negative	
	Frequency, Cosφ, THD (on current channel)	
ACCURACY CLASS	0.5% F.S. for all measured quantities	

APPLICATIONS

Control panels and distribution

Control panel

Machine tools or production

Process control

Tram sector

SINGLE-PHASE

QE-POWER-M

The QE-POWER-M is the single-phase version of the QE-POWER-T, the smallest Power meter capable of managing any current sensor (1/5A, 333mV, Rogowski probes).

Designed to be integrated into systems monitoring and acquisition.

- RS485 Modbus RTU output and configurable digital contact (with threshold alarm window).
- Universal input for current transformers and two versions (STD and PLUS) to satisfy every measurement need

MAIN FEATURES			
VERSION		STD	PLUS
POWER SUPPLY	10 - 40V_{DC} or 19 - 28 V_{AC} - 50/60Hz		
INPUT VOLTAGE	Direct connection phase to phase up to 500 V_{RMS} maximum (40 - 70Hz)		
MEASUREMENTS AVAILABLE	I_{RMS} - V_{RMS} - I_{PEAK} - V_{PEAK}	✓	✓
	Active power (W), Reactive power (VAR), Apparent power (VA)	✓	✓
	Bidirectional energy (kWh), positive and negative	✓	✓
	Active and reactive energy (kVARh)	✓	✓
	Power factor (inductive / capacitive) - crest factor	✓	✓
	Frequency	✓	✓
	Tanφ per phase and average		✓
	Average power factor		✓
	Power factor distortion (inductive / capacitive)		✓
	THD (V,I)		✓
	Minimum, average and max powers		✓
	K factor (according to IEEE Standard 1100-1992)		✓

APPLICATIONS

Control panels and distribution

Process control

Control panels

Machine tools or production

SINGLE-PHASE

QC-PM-485

The QC-PM485 module is a single-phase power meter with direct insertion up to 100A, it is equipped with a backlit display and an RS485 serial port that communicates in Modbus RTU.
The device takes power directly from the mains.

CE

MAIN FEATURES	
POWER SUPPLY	$230V_{AC}$
CURRENT INPUTS	Direct 10A typical, max 100A
MEASUREMENTS AVAILABLE	Voltage, Current, Frequency, Active, Reactive, Apparent power, Power factor, Energy
SERIAL OUTPUT	RS485 Modbus RTU

APPLICATIONS

Control panels and distribution

Process control

Control panels

Machine tools or production

STANDARD

QI-50-I and QI-300-I

The QI-xxx-I is a DC and AC current transformer, galvanically isolated from the measurement circuit. The device is completely similar in function and appearance to a standard active CT, but is capable of measuring the DC and AC TRMS component.

The transducer is loop powered 4...20mA and therefore does not require direct power supply. It is the first loop-powered Hall effect transformer with 0.5% accuracy on the market.

- The product is able to measure 0 - 50A bipolar in the QI-50-I version and 0 - 300A in the QI-300-I version
- 4...20mA analogue output on loop
- scale configurable via Dip-Switch, ready for mounting on DIN rail both vertically and horizontally

MAIN FEATURES		
MODEL	QI-50-I	QI-300-I
MEASUREMENT RANGE	50A AC/DC	300A AC/DC
F.S. ACCURACY	0,5%	
TYPE OF MEASUREMENT	RMS or DC	
POWER SUPPLY	From loop	
OUTPUT	4...20mA	

APPLICATIONS

- Control panels and distribution
- Energy control
- Inverter
- PV systems
- Control panel
- Machine tools or production
- Charging columns
- UPS

STANDARD

QI-400-DC-I

The QI-400-DC-I is a direct current transformer, galvanically isolated from the measurement circuit.

The translator is powered in a 4...20mA current loop and therefore does not require an auxiliary power supply. Using the dip switch it is possible to set the measurement range 200A or 400A.

MAIN FEATURES	
MEASUREMENT RANGE	400A DC or 200A DC settable by dip-switch
POWER SUPPLY	Passive current loop, 11 - 30V_{DC}
F.S. ACCURACY	0,5%
TYPE OF MEASUREMENT	DC
OUTPUT	4...20mA

APPLICATIONS

PV systems

QI-50-V-485 and QI-300-V-485

The QI-xxx-V-485 is a DC and AC current transformer, galvanically isolated from the measurement circuit.

The device is completely similar in function and appearance to a standard active CT, but is capable of measuring the DC and AC TRMS component range 0 - 50A for QI-50-V model and range 0 - 300A for QI-300-V model.

The product is equipped with an RS485 Modbus RTU serial output and an analogical output 0 - 10V.
Through the serial port it is possible to configure span and zero and assign the Modbus address.

MAIN FEATURES		
MODELLO	QI-50-V-485	QI-300-V-485
MEASUREMENT RANGE	50A AC/DC	300A AC/DC
F.S. ACCURACY	0,5%	
TYPE OF MEASUREMENT	RMS or DC	
POWER SUPPLY	12 - 30V_{DC}	
OUTPUT	0 - 10V and RS485 Modbus RTU	

APPLICATIONS

- Control panel and distribution
- Energy control
- Inverter
- PV systems
- Control panels
- Machine tools or production
- Charging columns
- UPS

STANDARD

QI-50-DO-485

The QI-50-DO-4854 is a DC and AC current transformer, galvanically isolated from the measurement circuit.

The product is equipped with an RS485 Modbus RTU serial output and a digital output (max $30V_{DC}$, max 50mA) with clean contact.

Through the serial port it is possible to configure span and zero and assign the Modbus address.

MAIN FEATURES	
MEASUREMENT RANGE	50A AC/DC
F.S. ACCURACY	0,5%
TYPE OF MEASUREMENT	RMS or DC
POWER SUPPLY	10 - $30V_{DC}$
OUTPUT	Digital (max $30V_{DC}$, max 50mA) dry contact and RS485 Modbus RTU

APPLICAZIONI

Charging columns

PV systems

UPS

STANDARD

QI-XXX/5-XX

CURRENT TRANSFORMERS with 5A secondary.
Class 0.5/1. Predisposition for DIN rail mounting.

To be combined with our QE-POWER, QA-POWER-M, QE-CURRENT and QC-ENERGY product series

Current range 150 - 2000A

- QI-150/5-11
- QI-300/5-2
- QI-400/5-12
- QI-500/5-3
- QI-800/5-3
- QI-1000/5-3
- QI-300/5-12
- QI-300/5-3
- QI-400/5-SP
- QI-800/5-13
- QI-1000/5-13
- QI-2000/5-2

QI-ROG-XXX

Rogowski coil for the measurement of alternating currents and impulse currents up to 1000A and different cable lenght.

To be combined with our series of QE-POWER, QE-CURRENT and QC-ENERGY products.

- QI-ROG-300
- QI-ROG-400
- QI-ROG-500
- QI-ROG-600
- QI-ROG-700
- QI-ROG-1000

SPLIT CORE

QI-HSC

The QI-HSC series sensors allow the measurement of direct and alternating currents with excellent accuracy and a wide measurement range. Their installation becomes easy thanks to the split core (fast connection without disconnecting the wires) and the removable screw terminal blocks.

The sensors are available with various primary current ratings and different output signals.

Ideal for interfacing with the QE-CURRENT-485 universal current converter which powers the sensor.

- QI-HSC-50
- QI-HSC-100
- QI-HSC-104-2000-I

MAIN FEATURES			
	QI-HSC-50	QI-HSC-100	QI-HSC-104-2000-I
CURRENT NOMINAL	50A AC/DC	100A AC/DC	± 2000A
POWER SUPPLY AUXILIARY	V_+ 12...15V V_- -12...-15V		$24V_{DC}$
FREQUENCY OF WORK	from DC up to 20kHz		from DC up to 20kHz
RESISTENCE OF LOAD	min 10kΩ		max 500Ω
OUTPUT	0 - 4V	0 - 4V	4..20mA

SPLIT CORE

QI-KCT

Split core current transformers with 333mV secondary, combinable with our single-phase/three-phase power meter QE-POWER, QE-CURRENT and QC-ENERGY, of reduced size and cost.

The 333mV secondary allows the cable to be extended by several meters without affecting the measurement accuracy.

Current range 5 - 600A

- QI-KCT-06-5A/333mV
- QI-KCT-10-30A/333mV
- QI-KCT-10-50A/333mV
- QI-KCT-10-80A/333mV
- QI-KCT-16-80A/333mV
- QI-KCT-16-100A/333mV
- QI-KCT-16-200A/333mV
- QI-KCT-24-100A/333mV
- QI-KCT-24-200A/333mV
- QI-KCT-24-300A/333mV
- QI-KCT-36-300A/333mV
- QI-KCT-36-400A/333mV
- QI-KCT-36-600A/333mV

SPLIT CORE

QI-SC

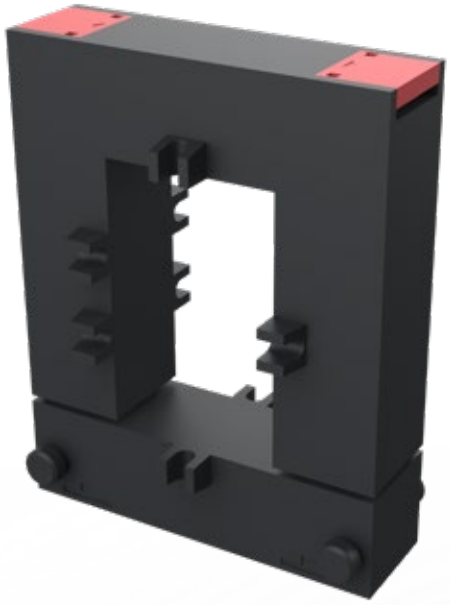
Split current transformers of QI-SC family are available with 5A secondary, 1 m of integrated cable, class 1, diameter 24/36 mm.

To be combined with our QE-POWER-M(T), QECURRENT, QI-POWER-485 and QA-POWER-M product series.

Available for 100A, 200A, 300A, 400A and 600A.

- QI-SC-24-100/5
- QI-SC-24-100/5-1
- QI-SC-24-200/5
- QI-SC-24-300/5
- QI-SC-36-300/5
- QI-SC-36-400/5
- QI-SC-36-500/5
- QI-SC-36-600/5

QI-SC-DBP



Split current transformer with 5A secondary, class 1, hole 20x30mm / 50x80mm / 80x120mm / 80x160mm.

To be combined with our QE-POWER, QECURRENT and QC-ENERGY product series.

Available for 100A, 200A, 300A, 400A, 600A, 800A, 1000A, 1500A, 2000A, 2500A

- QI-SC-DBP23-100/5
- QI-SC-DBP23-200/5
- QI-SC-DBP23-300/5
- QI-SC-DBP23-400/5
- QI-SC-DBP58-1000/5
- QI-SC-DBP58-300/5
- QI-SC-DBP58-400/5
- QI-SC-DBP58-600/5
- QI-SC-DBP58-800/5
- QI-SC-DBP58-800-5
- QI-SC-DBP812-1000-5
- QI-SC-DBP812-1500-5
- QI-SC-DBP812-1600-5
- QI-SC-DBP812-2000-5
- QI-SC-DBP812-800-5
- QI-SC-DBP816-2000-5
- QI-SC-DBP816-2500-5

QE-BR-ETH485

The QE-BR-ETH485 is a multiclient Modbus TCP to Modbus RTU (master to slave) bridge capable of managing up to 10 client connections

- Prepared for T-BUS connection (fast connection without wiring)
- 1500V insulation between RS485 serial, power supply and Ethernet port.
- User interface with 6 status LEDs
- Configuration via Web Server

MAIN FEATURES	
POWER SUPPLY	10 - 40V_{DC} / 20 - 28 V_{AC}
NETWORK INTERFACE	10/100 Base-T
RTU BAUDRATE	Up to 115200
MAXIMUM NUMBER MODBUS NODES	247
REGULATIONS	ETHERNET IEEE 802.3 and RS485 compliant
OUTPUT PORTS	RS485 Modbus RTU(on the terminals) or T-BUS connection (on the base) ETHERNET Modbus TCP-IP (RJ45)

APPLICATIONS

Interface instrumentation

Systems communication

QE-CURRENT-485

The QE-CURRENT-485 is a universal current and voltage converter and analyzer ALL IN ONE!

1 DIN wide module, suitable for distribution panels, the QE- CURRENT-485 allows you to interface with any current and voltage sensor and to read and analyze the values measured by the primary.

The device is also equipped with an input for 2 or 3 wire PT100 or NTC temperature probes.

Available a fully configurable analogue output, a digital output (configurable dry contact) and the RS485 Modbus RTU serial output.

MAIN FEATURES			
POWER SUPPLY	10 - 30V_{DC}		
INPUT	ROGOWSKI probe Current transformer with 1A / 5A secondary Current / voltage transformer with secondary ±10V_{PEAK} or ±1V_{PEAK} Current transformer with 333mV secondary Current transducer with secondary 100mA AC / DC HALL sensor, with its own power supply (±15V_{DC}) Temperature probes		
OUTPUTS	RS485 Modbus RTU 0...10V / 0...20mA (configurable) Dry contact 50mA max, 30V_{DC}		
VERSION		QE-CURRENT-485	QE-CURRENT-485-H
MEASUREMENTS AVAILABLE	I_{RMS} - I_{DC} - I_{AC} (min, avg, max)	✓	✓
	Charge quantity on I_{RMS} - I_{DC} - I_{AC}	✓	✓
	Frequency	✓	✓
	Crest factor	✓	✓
	Temperature	✓	✓
	Resistance	✓	✓
	I_{PEAK}		✓
	THD		✓
	Harmonic analysis up to the 63th		✓
	Internal temperature of the module		✓

APPLICATIONS

- Facilities of purification
- Power factor correction devices
- Steel mills
- Paper mills
- Transformer stations
- Electrical engines

QA-OMNI, QA-TEMP, QA-VI and QA-I

Universal signal converters (voltage, current, temperatures, resistors and potentiometers, digital inputs) configurable via USB, DIN rail mounting, 4-way galvanic separation, AC/DC power supply, programmable alarm contact, RS485 Modbus.
Simultaneous analog and digital input.
Data acquisition via USB with pen-drive, data download in format importable into Excel (integrated RTC Real Time Clock).

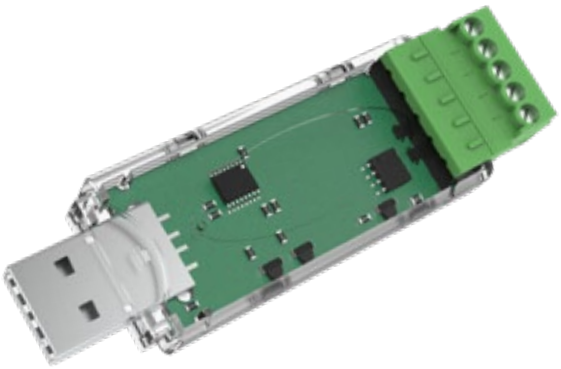



	QA-OMNI	QA-TEMP	QA-VI	QA-I
POWER SUPPLY	10 - 40V_{DC} / 20 - 28V_{AC} - 50/60Hz			
ANALOG INPUT (completely configurable)	**Voltage** (up to 10V_{DC}) with 1mV resolution, 100kΩ input impedance		**Voltage** (up to 10V_{DC}) with 1mV resolution, 100kΩ input impedance	
	Current (up to 20mA), maximum resolution 2µA, input impedance 20Ω		**Current (up to 20mA),** maximum resolution 2µA, input impedance 20Ω	**Current (up to 20mA),** maximum resolution 2µA, input impedance 20Ω
	Temperature / RTD Resistance: PT100, PT500, PT1000, Ni100 (2,3 or 4 wires) TC: J, K, R, S, T, B, E, N (-10mV...+70mV) Automatic cable break detection	**Temperature / RTD Resistance**: PT100, PT500, PT1000, Ni100 (2, 3 or 4 wires) TC: J, K, R, S, T, B, E, N (-10mV...+70 mV) Automatic detection cable interruption		
	Potentiometer: 1k...10kΩ	Potentiometer: 1k...10kΩ		
DIGITAL INPUT (simultaneous with analog input)	Frequency: 0.001Hz - 9.99kHz 2 and 3 wire NPN Mechanical contact 3-wire PNP with 24V power supply Namur Photoelectric Hall sensors Variable reluctance Pulsed at 24V TTL			
ANALOGUE OUTPUT (completely configurable)	**Current: 0...20mA** (maximum load resistance 600Ω) **Voltage: 0...10V** (minimum load resistance 2Ω) Field sensor power supply at 13V_{DC} - 30mA max on the retransmitted output			**Current: 0...20mA** (maximum resistance load 600Ω)
SERIAL OUTPUT	RS485 Modbus RTU (from terminals and from T-Bus)			

APPLICATIONS

- Control panels and distribution
- Process control
- Control panels
- Machine tools or production

Q-USB485



The Q-USB485 is a 5kV galvanically isolated USB/RS485 serial converter,
using an FTDI USB chip.

The ease of use of this converter is due to the use of Windows certified drivers that your PC will download automatically if connected to the network.

This device will allow you to safely connect to all Modbus devices on the RS485 serial port.

APPLICATIONS

Modbus interface

Q-WIFI485

★ NEW ★

Q-WIFI485 is a compact gateway with on board installed Web Server that provides WiFi to RS485 interface (Mastere to Slave) for connectivity of third-party systems.

Using MQTT protocoll, the devide is able to connect to proprietary DEM cloud, Q-LOUD.
In this way, all instruments can be converted in order to be suitable for Industry 4.0.

FW can be updated from Web Server.

MAIN FEATURES	
POWER SUPPLY	10 - 30V_{DC}
OUTPUTS	Wi-Fi STA-AP High speed serial RS485 port
PROTOCOLL	MQTT Modbus RTU
WEB SERVER	Integrated on board Maximum client number: 10
LED	Green for power Yellow for fail - FW upload

APPLICATIONS

Interface instrumentation

Wireless communication

Cloud

QE-RS485-ISOLATOR

The QE-RS485-ISOLATOR RS485 isolator with insulation up to 4kV.

- HOT SWAPPING functionality for hot mounting (no need to reboot the system)
- User interface: 3 status LEDs

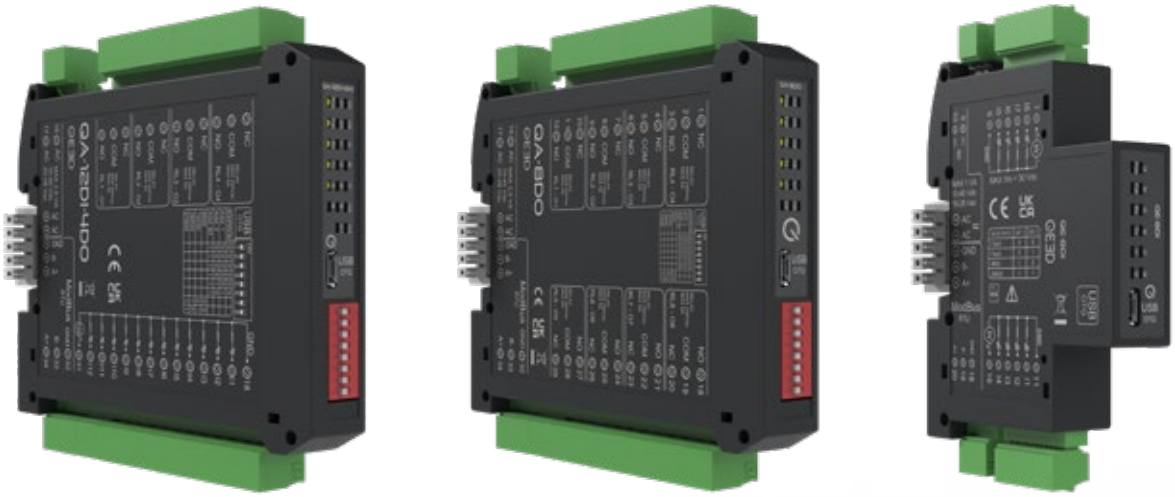
MAIN FEATURES	
POWER SUPPLY	10 - 30V_{DC}
NUMBER OF CHANNELS	n° 1 RS485 serial input port - n° 1 RS485 serial output port
CONFIGURATION	Baud rate: 1200 - 9600 settable via 2 jumpers (supplied as standard)
INSULATION	4kV_{DC}

APPLICATIONS

Communication systems

MODBUS I/O SYSTEM

QA-12DI-4DO, QA-8DO and QE-8DI



The QA-12DI-4DO, QA-8DO and QE-8DI modules are Modbus RTU slave modules suitable for use as expansion for master systems such as PLC, HMI, Panel PC where a greater number of inputs and outputs are needed.

- QA-12DI-4DO has 12 DIGITAL INPUTS and 4 RELAY OUTPUTS SPDT 5A – 250V_{AC}
- QA-8DO has 8 RELAY OUTPUTS SPDT 5A – 250V_{AC}
- QE-8DI has 8 opto-isolated digital inputs

The modules can be mounted on a T-BUS connector for serial connection and to carry power.

HOT SWAPPING functionality for hot mounting (no need to reboot the system).

MAIN FEATURES			
MODEL	QA-12DI-4DO	QA-8DO	QE-8DI
DIGITAL INPUTS (PNP with negative in common)	12		8
DIGITAL OUTPUTS (5A SPDT Relay - 250V_{AC})	4	8	
USCITA 5V_{DC} (for dry contact detection)			✓
POWER SUPPLY	10 - 40V_{DC}, 20 - 28V_{AC} @50/60 Hz		
SERIAL OUTPUT	RS485 Modbus RTU (from terminals and from T-Bus)		

APPLICATIONS

I/O expander

PLC

HMI

Panel PCs

STANDARD

QE-BOX

The QE-BOX is a resistive divider that allows the input voltage to be reduced from ±2000V_{DC} to 1000V_{DC}.

To be used exclusively with the QI-POWER-485 and QI-POWER-485-300.

Typical application is the measurement of string voltages at 1500V_{DC} in the photovoltaic sector.

CE

APPLICATIONS

PV systems

CUSTOM ELECTRONICS

Modules and interfaces for automation
and customized IoT platforms
for your business

www.qeed.it

MADE IN ITALY

OUR UNIVERSAL PLATFORMS

Dem SpA, with its Electronics division, aims to create customized boards to be integrated with its controls for industrial automation and with any supervision system.

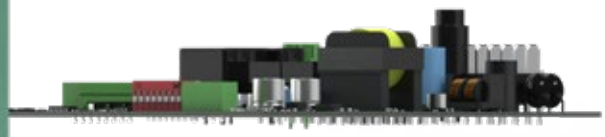
Our mission is to make commonly used objects intelligent and interactive.

With this philosophy we have created universal platforms for:

- Ovens (deli, pastry and pizza oven with capacitive user interfaces)
- Professional cooking (burner control, Fry Top, pasta cooker, single-phase extractor hoods)
- Refrigerated systems (BT and TN)

To these, for precise and punctual monitoring of instantaneous and historical consumption, it is possible to connect through an RS485 serial port our QEED brand products such as Current Transformers, Power Meters, I/O expansion modules and signal converters.

CONTROLLERS WITH 7” CAPACITIVE TOUCH DISPLAY



OMPLETE CONTROL
FOR ELECTRIC OVENS CEILING/FLOOR
composed of a 7” touch screen panel
(flush mounting) and a separated power base.
Firmware solution and graphics can be customized
according to the customer’s needs

CE

Hardware features

- 115 - 230V switching power supply
- Display directly powered from the power base without the need for an external transformer
- 4 temperature sensors (expandable to 8 without adding external hardware)
- 5 digital relay or 0 - 10V outputs (expandable up to 9 without adding external hardware)
- Analog outputs: 1
- Digital input: up to 4
- Digital output: up to 2
- Buzzer: for alarm and end-of-cycle signaling

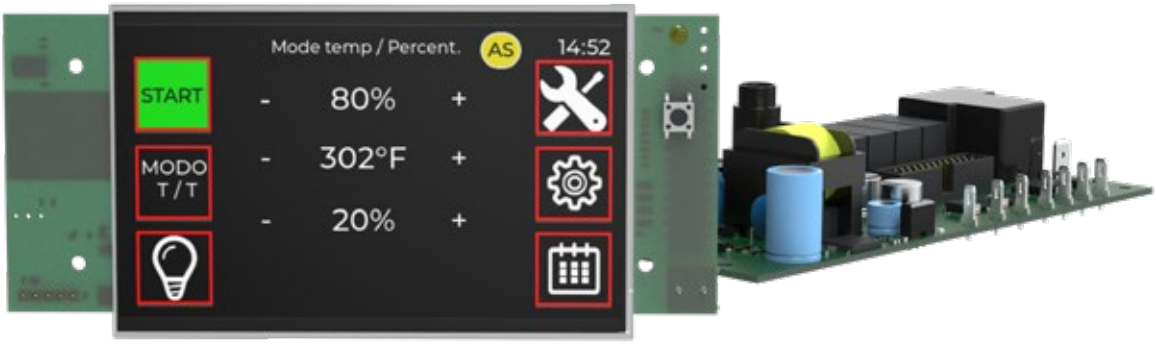
The functional characteristics:

- Control of chamber temperature and percentage power of top and bottom
- Cooking timer
- 99 customizable recipes
- Eco and Turbo functions
- Weekly scheduled departures
- **Graphics dedicated to each OEM customer**

APPLICATIONS

- Ovens for pizzeria
- Professional cooking
- Disinfection systems
- Refrigerant systems
- Bakeries and pastry shops
- Hoods
- Industrial washing machines

CONTROLLERS WITH 4”3 CAPACITIVE TOUCH DISPLAY



Family of controllers with 4”3 capacitive touch display
for electric ovens for pizzerias, bakeries, pastry shops, industrial washing machines or sanitization systems. The kit is made up of two separate units: the touch screen panel, which can be mounted on the side of the oven, and the actuator board, which can be placed on the panel board.
The graphics are completely customizable for the needs of each manufacturer.
The firmware is developed so that the display is sensitive even when fixed under glass (maximum thickness 2mm) in such a way as to make it completely integrated with the aesthetics of the machine.

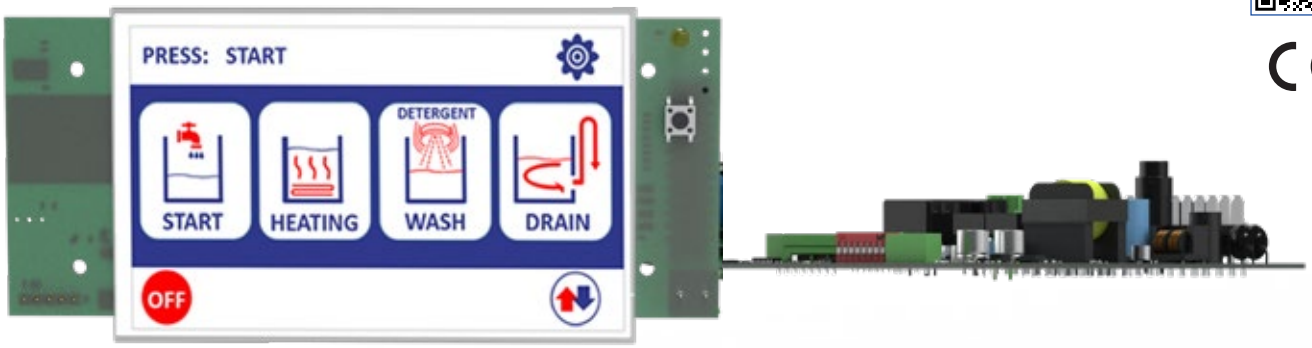
Technical features

- Power supply: 115 – 230V
- Temperature probe: PT100 or TcJ or TcK
- Digital input: microport
- Up to 9 relays configurable at design stage.
- User interface with 4”3 color display (maximum display cover thickness equal to 2mm)
- RS485 port for connection to the Q-LOUD supervision system **depending on the models**
- USB port for firmware update **depending on the models**
- Buzzers: **depending on the models**

APPLICATIONS

- Ovens for pizzeria
- Professional cooking
- Disinfection systems
- Refrigerant systems
- Bakeries and pastry shops
- Hoods
- Industrial washing machines
- Ovens for gastronomy

CONTROLLERS WITH 4”3 RESISTIVE TOUCH DISPLAY



Universal platform with 4.3” resistive touch display
and flexible power card for every customer need.
Dedicated firmware and graphics to customer specifications.

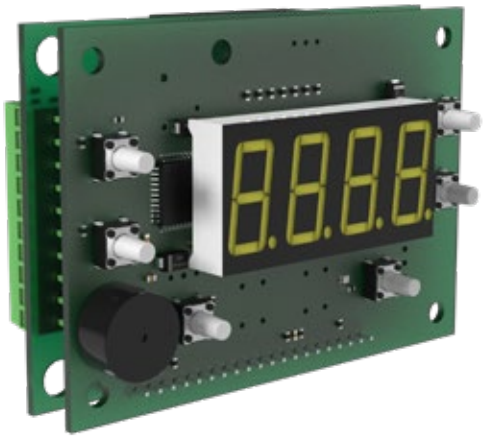
Technical features

- Power supply: 115 - 230V
- Terminal blocks: removable, faston or screw (depending on the model)
- Analogue inputs: 4 (expandable up to 8) for temperature/humidity probes
- Analog outputs: 1
- Digital input: up to 4
- Digital output: up to 7 (5 relays and 2 MOS)
- Buzzer: for alarm and end-of-cycle signaling

APPLICATIONS

- Ovens for pizzeria
- Professional Cooking
- Disinfection systems
- Refrigerant systems
- Bakeries and pastry shops
- Hoods
- Industrial washing machines
- Ovens for gastronomy

CONTROLLERS WITH 7 SEGMENT DISPLAY



Universal module for controlling temperature, cooking times, cycles and processes.

Flexible in configurations to allow use on ovens (bread/ pizza) to replace traditional ones electromechanical regulators, industrial washing machines or sanitization systems.

Customizable film with customer logo and graphics and optional adjustment kit.

Technical features

- Consists of two separate, sandwich-mounted units.
- User interface with 7-segment display
- Power supply: 230V (115V on request)
- Temperature probe: TcJ, TcK
- Digital input: configurable
- 2 relays and functions configurable at the design stage
- Buzzer: alarm and end-of-cycle signal
- Wi-Fi module for connection to optional IoT
- ENCODER: optional depending on models

APPLICATIONS

- Ovens for pizzeria
- Professional Cooking
- Disinfection systems
- Bakeries and pastry shops
- Industrial washing machines
- Refrigerant systems

Our new cloud system

Q-LOUD the new DEM cloud system!
Dem SpA's Q-LOUD supervision system allows better use of the system which can be accessed remotely via web, with real-time access to the information made available by the controlled system.
This way it is possible **monitor and intervene on parameters remotely** where necessary.

- Access to all systems from a single point
- Accessible via web with the simplicity of pre-activated software
- Three levels of accessibility
- Data protection
- Continuous monitoring of operating states with immediate notification of alarms.

TEMPERATURE PROBES

TYPE OF PROBES: NTC

- Cable type: 2-wire thermoplastic or silicone
- Cable length and terminations to customer specification (typically 1 - 1.5 - 3m)
- Bulb dimensions: 6x30mm co-molded
- Degree of protection: IP68 (i.e. it can work immersed in non-corrosive liquids at a depth of 1m)
- Measuring range: from -40°C to 110°C
- Cable working range: -40 to 130°C
- Application sectors: COLD (Counters, refrigerator cabinets and display cases, ice cream machines, air conditioning), FOOD
- EQUIPMENT (blast chillers, pasta cookers)

TYPE OF PROBES: THERMOCOUPLE J

- Cable type: 2-wire Vetrotex
- Cable length and terminations to customer specification (typically 1 - 1.5 - 3m)
- Bulb dimensions: 6x100mm steel + spring
- Measuring range: from 0°C to 450°C
- Cable working range: from 0 to 350°C
- Application sectors: FOOD EQUIPMENT (Cooking ovens, coffee machines, fryers, Fry Tops)

HUMIDITY PROBES: Q-HR100

- The Q-HR-100 humidity sensor transforms the measured quantity into a 4-20mA signal. Its operating range goes from 0 to 100% (corresponding to 4 and 20mA) in non-aggressive environments
- The miniaturized sensor, which reduces the risk of condensation accumulation and requires less air flow without negatively affecting the reading, makes it particularly suitable in applications such as scientific laboratories, greenhouses, refrigeration and air conditioning systems (e.g. living rooms , offices, hotels, technical rooms, meeting and conference rooms), meat seasoning and maturation cabinets, retarder-proving cells, tobacco drying systems
- The working temperature can vary from -30°C to 80°C and this allows its use in multifunction or slow cooking equipment. The probe must be powered at 9-30V_{DC}
- Compatible with QEED QA-OMNI and QA-VI instruments and with the major humidity controls on the market

EMC LAB

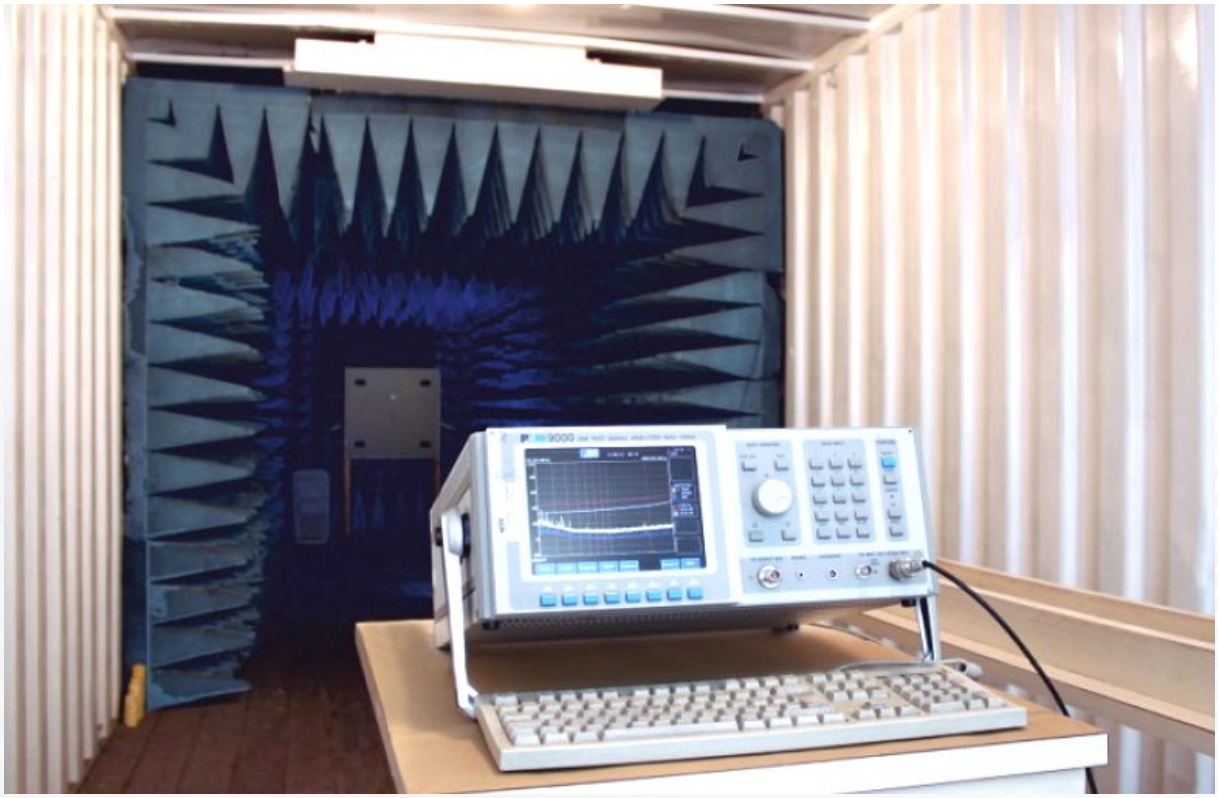
A laboratory available to our customers
for the development of their products

www.qeed.it

MADE IN ITALY

EMC TESTING LABORATORY

The Research & Development activity is supported by our EMC test laboratory, thanks to which we can support the customers in the development of their products and to find the best solution for EMC troubles.
DEM follows the study of the product in all its aspects, up to the supply of the finished and certified product.

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