

CROMPTON INSTRUMENTS INTEGRA 1232 DIGITAL METERING SYSTEM



RELEVANT STANDARDS AND TEST REPORTS

- IEC BS EN 61010-1:2010
- BS EN 61326-1:2013
- IEC 62053-21 Class 1
- IEC 62053-24 Class 1

COST EFFECTIVE SOLUTION FOR THE MEASUREMENT AND DISPLAY OF ALL ELECTRICAL PARAMETERS

KEY FEATURES

- MID approved
- DIN 96 enclosure
- Programmable backlit LCD screen
- Voltage IN-OUT connections
- CT current measurement 5A/1A
- Plug and socket connections
- Programmable VT, CT ratios
- Modbus™ RTU
- 2 pulsed outputs with led indication
- PF bar indicator
- 3P4W, 3P3W, 1P2W system types
- Individual harmonics to 63rd

TE Connectivity's (TE) Crompton Instruments Integra 1232 digital metering system (dms) enables cost effective solution for the measurement and display of all electrical parameters including total harmonic distortion (THD) and individual, up to the 63rd harmonic.

DISPLAY

High definition screen features programmable backlight for high contrast visibility in low light and direct sunlight applications. The light can be programmed to automatically dim after set period of time for energy saving.

New "petal" array icons shows the percentage of full scale power of the measured system and the instantaneous PF measurement gives clear PF indication. Total power consumption is displayed on the screen at all times.

Q2C WIRING SOLUTION

Integra 1232 dms and the 3-in-1 current transformers feature Q2C wiring solution for simple yet fast installation utilising plug and socket connections and pre-cut wiring looms, which allow to reduce assembly time and connection errors. IN-OUT voltage connections reduce wiring and installation time.

COMMUNICATION

Modbus RS485 RTU and two pulsed outputs are fitted as standard.

ENCLOSURE AND SYSTEM

The DIN 96 panel mounted enclosure includes integral panel mounting clips for quick and easy fitting and to suit user requirements, the range includes single-phase, three-phase three-wire and three-phase four-wire capability, all selectable at the point of installation.

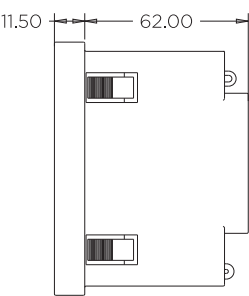
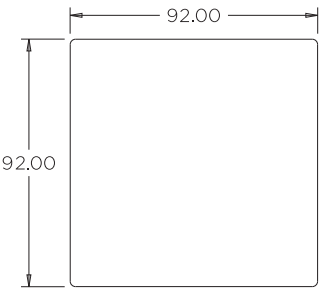
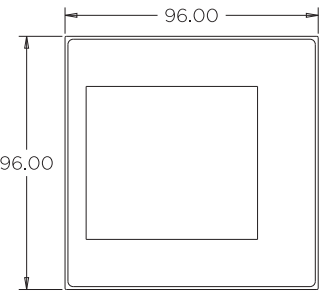
ORDERING INFORMATION

Model	Part number
INTEGRA 1232 multifunction panel meter LCD Input 480V L-L, 5A / 1A AC 2 pulsed outputs, Modbus RS485. Q2C plug and socket connectivity	INT-1232-S-01

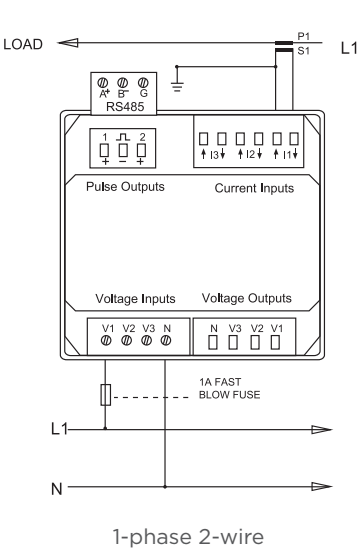
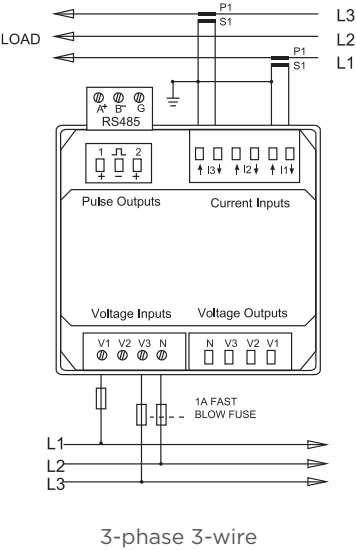
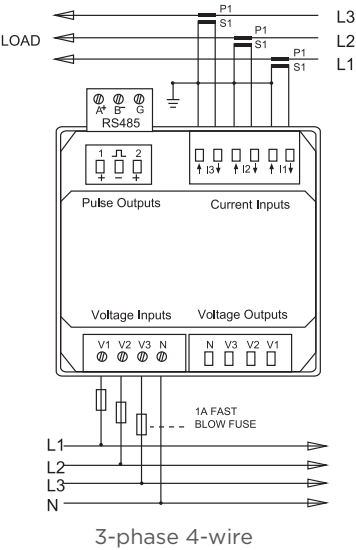
DISPLAYED PARAMETERS

Parameters
Voltage per phase L-N, L-L
Current per phase and Max Demand
Power Factor – per phase and system
Total Harmonic Distortion – Voltage and Current per phase
Neutral current
Frequency system
Phase Sequence
Active Power (P) per phase, total and Max Demand
Reactive Power (Q) per phase, total and Max Demand
Apparent Power (S) per phase, total and Max Demand
Energy – Active and Reactive Importing and Total
Energy – Active and Reactive Exporting and Total

DIMENSIONAL INFORMATION



CONNECTION DIAGRAM



TECHNICAL SPECIFICATIONS

Specifications		Parameters						
Input		Button	Scr	Parameter				
Nominal input voltage	57.7 – 276V AC L-N (100-480V L-L) 576V L-L MAX		1	Watts L1 Volts L1 Current L1 Active Energy L1				
Max. continuous input overload voltage	120% of nominal			2	Watts L2 Volts L2 Current L2 Active Energy L2			
Max. short duration input voltage	2 x nominal voltage for 1 second				3	Watts L3 Volts L3 Current L3 Active Energy L3		
Nominal input voltage burden	< 0.2VA per phase					4	Watts L1 Volts L1 Current L1 Reactive Energy L1	
Nominal input current	1A AC or 5A AC						5	Watts L2 Volts L2 Current L2 Reactive Energy L2
Nom. Input current burden	< 0.1 VA							6
Max. continuous input overload current	120% of nominal		1					
Max. short duration input current (300 msec)	20 x nominal current for 1 second			2				
Auxiliary					3			
Operating range	Self powered (from any of the three phases)					4		
Supply burden	< 10 VA						5	
Accuracy								6
Voltage (V)	+/- 0.5% of range maximum		1					
Current (A)	+/- 0.5% of range maximum			2				
Frequency (Hz)	+/- 0.2% of mid-frequency				3			
Power factor (PF)	+/- 1% of unity (0.01)					4		
Active power (W)	+/- 1.0% of range maximum	1					Active Power (P) L1, L2, L3	
Reactive power (VAr)	+/- 1.0% of range maximum						2	Reactive Power (Q) L1, L2, L3
Apparent power (VA)	+/- 1.0% of range maximum		3					Apparent Power (S) L1, L2, L3
Active energy (kWh)	+/- 1.0% of range maximum to IEC 62053-21			4				System Powers P,Q,S
Reactive energy (kVArh)	+/- 1.0% of range maximum to IEC 62053-24				1			Imp Active Energy Exp Active Energy
THD	2% to 63rd harmonic					2		Imp Reactive Energy Exp Reactive Energy
Measured Range		3						Total Active Energy Total Reactive Energy
Voltage (V)	5 – 120% of nominal (Min 100V – self powered)							
Current (A)	5 – 120% of nominal							
Frequency (Hz)	44 – 66 Hz							
Power (W, VAr, VA)	5 – 144% of nominal (bi-directional)							
Energy	8 digit, upto 9999999.9 MWh							
Power factor	4 quadrant							
THD	0 – 40% upto 63rd harmonic							
Environment								
Operating temperature	-25°C to +55°C		1	PF and System Freq				
Storage temperature	-40°C to +70°C		2	PF per phase				
Relative humidity	0 to 95%, non-condensing		3	Max Current Demand per phase				
Shock	30g in 3 planes		4	System Max demand P, Q, S.				
Vibration	10Hz to 50Hz, IEC 60068-2-6, 2g		1	Active Power (P) L1, L2, L3				
Dielectric Voltage	4kV between voltage and current to earth		2	Reactive Power (Q) L1, L2, L3				
Altitude	3000m		3	Apparent Power (S) L1, L2, L3				
Warm-up	1 minute		4	System Powers P,Q,S				
Outputs			1	Imp Active Energy Exp Active Energy				
Pulsed output relay (configurable)	Opto-coupled, potential-free SPST-NO contact		2	Imp Reactive Energy Exp Reactive Energy				
Contact Rating current	2-27mA at 27V DC		3	Total Active Energy Total Reactive Energy				
Contact Rating voltage	5-27V DC							
Pulse Width	60 / 100 / 200 ms							
Pulse rate	0.001/0.01/0.1/ 0/100/1000 kWh/kVArh							
Pulsed output relay (non-configurable)	3200IMP/kWh							
Communications	Modbus RTU (RS485)							
Type	2-wire half duplex							
Baud rate	2400, 4800, 9600, 19200, 38400							
Address	1 to 247							
Enclosure								
Enclosure Style	DIN 96 panel mount							
Dimensions	96x96x62 mm							
Panel cut-out	92x92mm							
Panel thickness	1-5 mm							
Protection rating	Front IP54, Rear IP30							
Material	UL 94-VO							
Weight	340 g							
Cable size	0.05mm² – 2.5mm² stranded wire							
Terminals	Voltage and Current : Shrouded screw clamp							
Display characters	6.2mm							

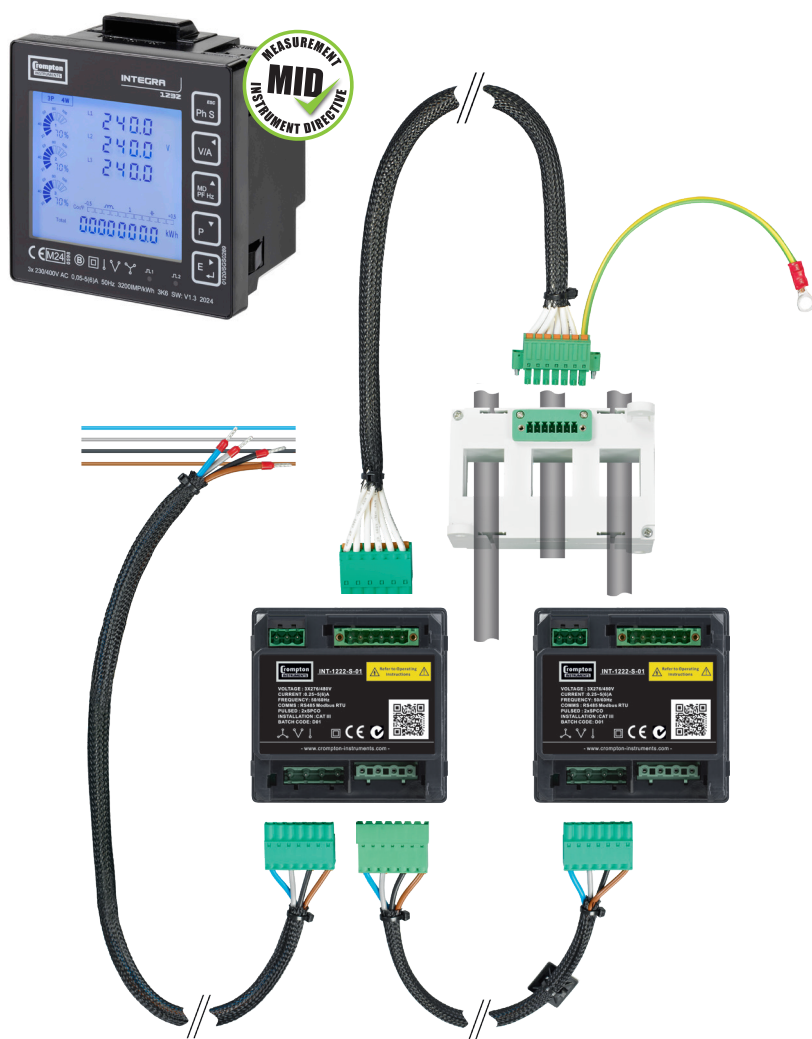
Q2C WIRING SOLUTION

Ensures error free installation and reduces wiring time by 80%.

With the Q2C wiring solution, you can quickly and easily connect the INTEGRA 1232 Digital Metering System and 3-in-1 current transformers.

Key Benefits

- A complete wiring solution with integral connectors and earthing
- Screwless terminal connections, vibration proof and maintenance free
- Reduced installation time
- Eliminates potential cost of errors in electrical connections or programming
- Tidy solution for cable management



VOLTAGE METER TO METER LOOM

The meter to meter loom connects the voltage for upto 32 meters using high quality LSZH cable fitted with suitable plugs and socket for safe and easy voltage connections.



Part Number	Length
Q2C-VMM-0600-01	600 mm
Q2C-VMM-1000-01	1000 mm
Q2C-VMM-1200-01	1200 mm
Q2C-VMM-1500-01	1500 mm
Q2C-VMM-2000-01	2000 mm
Other lengths available	

VOLTAGE METER TO OPEN LOOM

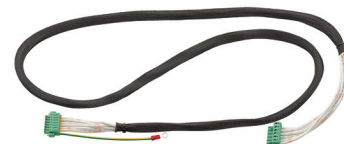
The meter to open loom connects the voltage supply from the fused connections to the meter using high quality LSZH cable fitted with suitable plugs and socket for safe and easy voltage connections.



Part Number	Length
Q2C-VFO-0600-01	600 mm
Q2C-VFO-1000-01	1000 mm
Q2C-VFO-1200-01	1200 mm
Q2C-VFO-1500-01	1500 mm
Other lengths available	

CURRENT TO METER LOOM

The current to meter loom connects the current from the current transformer to the current input on the meter using high quality LSZH cable fitted with suitable plugs and socket for safe and easy voltage connections.



Part Number	Length
Q2C-CTM-0600-01	600 mm
Q2C-CTM-0900-01	900 mm
Q2C-CTM-1200-01	1200 mm
Q2C-CTM-1500-01	1500 mm
Q2C-CTM-2000-01	2000 mm
Q2C-CTM-2500-01	2500 mm
Other lengths available	

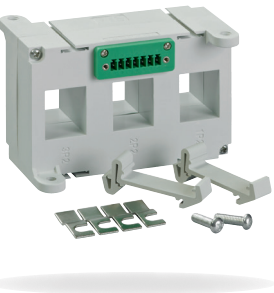
CURRENT TO OPEN LOOM

The open loom allows to hard wire the high quality LSZH cable to any CT while the plug connector ensures quick and safe connection to the inputs on the meter fitted with suitable plugs.



Part Number	Length
Q2C-CMO-0600-01	600 mm
Q2C-CMO-0900-01	900 mm
Q2C-CMO-1200-01	1200 mm
Q2C-CMO-1500-01	1500 mm
Q2C-CMO-2000-01	2000 mm
Q2C-CMO-2500-01	2500 mm
Other lengths available	

Integra DMS - Q2C 3-in-1 Current Transformers for use with Integra 1222, 1232

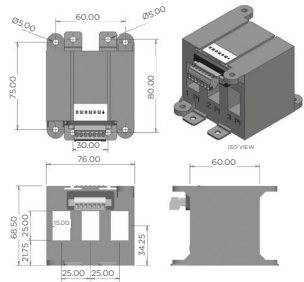


FEATURES

- 3-IN-1 current transformers combine 3 traditional current transformers
- Can be use with or without Q2C wiring solution
- Suitable for use with Integra 1222 and 1232 meters
- Integral connector

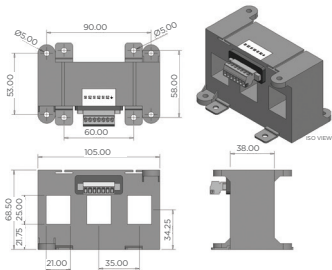
BENEFITS

- Simple, easy and error free installation and wiring
- Applicable for most standard MCCB manufacturers



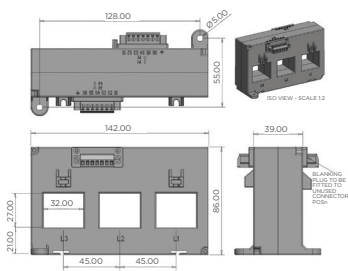
QC3N1-25 – 25 MM CENTRES BETWEEN PHASES
76 mm wide x 60 mm deep x 68 mm high

Part number	Ratio	Burden VA against class index			Aperture (mm)
		Class 0.5	Class 1	Class 3	
QC3N1-25-60/5	60/5	-	1	2	3@15x25
QC3N1-25-100/5	100/5	-	1.5	2.5	3@15x25
QC3N1-25-125/5	125/5	-	1.5	2.5	3@15x25
QC3N1-25-160/5	160/5	1.5	1.5	2.5	3@15x25



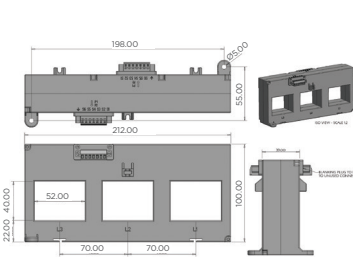
QC3N1-35 – 35 MM CENTRES BETWEEN PHASES
105 mm wide x 38 mm deep x 68.5 mm high

Part number	Ratio	Burden VA against class index			Aperture (mm)
		Class 0.5	Class 1	Class 3	
QC3N1-35-100/5	100/5	-	1.5	2	3@21x25
QC3N1-35-125/5	125/5	-	1.5	2.5	3@21x25
QC3N1-35-160/5	160/5	1.5	1.5	2.5	3@21x25
QC3N1-35-250/5	250/5	1.5	1.5	2.5	3@21x25



QC3N1-45 – 45 MM CENTRES BETWEEN PHASES
142 mm wide x 39 mm deep x 86 mm high

Part number	Ratio	Burden VA against class index			Aperture (mm)
		Class 0.5	Class 1	Class 3	
QC3N1-45-250/5	250/5	-	2.5VA	-	3@32x27
QC3N1-45-400/5	400/5	-	2.5VA	-	3@32x27
QC3N1-45-630/5	630/5	2.5VA	5VA	-	3@32x27



QC3N1-70 – 70 MM CENTRES BETWEEN PHASES
212 mm wide x 39 mm deep x 100 mm high

Part number	Ratio	Burden VA against class index			Aperture (mm)
		Class 0.5	Class 1	Class 3	
QC3N1-70-400/5	400/5	-	2.5VA	-	3@52x40
QC3N1-70-630/5	630/5	2.5VA	2.5VA	-	3@52x40
QC3N1-70-800/5	800/5	2.5VA	5VA	-	3@52x40

Learn more: [TE.com/energy](https://www.te-connectivity.com/energy)

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