CROMPTON INSTRUMENTS INTEGRA 1221 DIGITAL

METERING SYSTEM

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

APPLICATIONS

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

RELEVANT STANDARDS AND TEST REPORTS

- Commercial Buildings Disclosures
- Nabers
- National Construction Code (NCC)
- Greenstar Energy Management

KEY FEATURES

- DIN 96 enclosure
- Backlit LCD screen
- Voltage IN-OUT connections
- RJ12 CT connection 100mA
- Programmable L1 to L3 reversal
- Programmable VT, CT ratios
- Modbus™ RTU
- Individual harmonics to 63rd
- Non-volatile memory 1MB

The Crompton Instruments Integra 1221 digital metering system (dms) from TE Connectivity enables cost effective solution for the measurement and display of all electrical parameters including total harmonic distortion (THD) 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 a 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 power factor (PF) measurement gives clear PF indication. Total power consumption is displayed on the screen at all time.

RJ12 CT CONNECTION WIRING SOLUTION

Integra 1221 dms and the 3-in-1 current transformers include RJ12 plugs and sockets for easy connectivity and installation and the solution is available with wired looms to reduce assembly time and connection errors. IN-OUT voltage connections reduce wiring and installation time.

COMMUNICATION

Modbus RTU (RS485) as standard, two pulsed outputs.
Optional modules available Ethernet (TCP), BACnet and Data Logger.

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. Optional IP64 kit available.

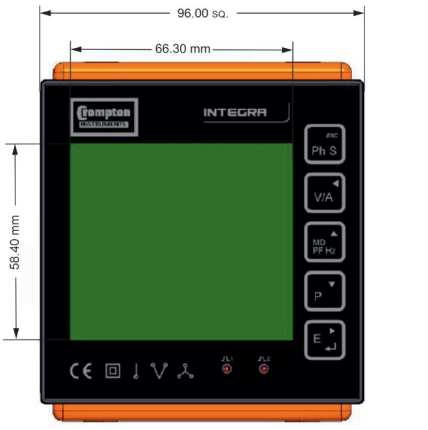
ORDERING INFORMATION

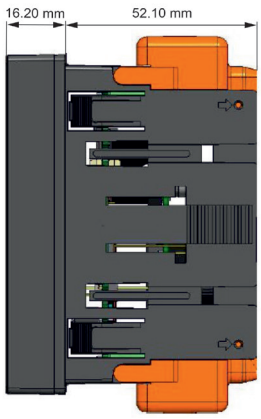
Model	Part number
Integra 1221 multifunction panel meter - Self powered. Backlit LCD HD Display Input 100-277 V AC L-N / 173-480V AC L-L - 2 Pulsed outputs. CT input 100mA. Modbus RS485 output. RJ12 CT connectivity.	INT-1221-S-010
Optional Ethernet Module (1221 & 1222)	OPT-1222-070
Optional Data Logger Module (1221 & 1222)	OPT-1222-020
Optional BACnet Module (1221 & 1222)	OPT-1222-090
Optional Sealing gasket & push fixing clamps for IP64 (1221 & 1222)	OPT-1222-IP64

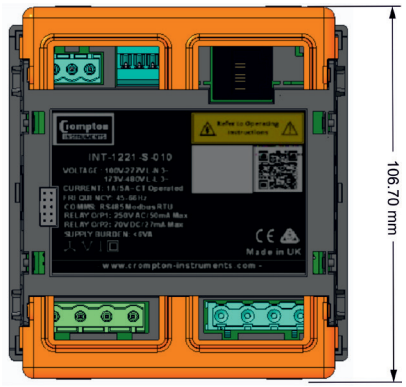
DISPLAYED PARAMETERS

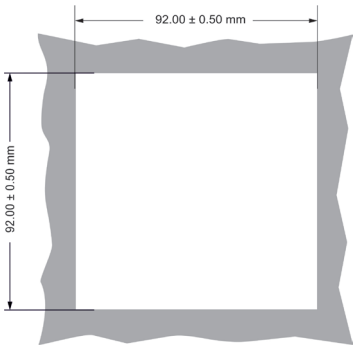
Parameters
Voltage per phase L-N, L-L
Current per phase and Max Demand
Power Factor – per phase and system
Total Harmonic Distortion – Voltage and Current per phase
Neutral current
Frequency system
Phase Sequence
Active Power (P) per phase, total and Max Demand
Reactive Power (Q) per phase, total and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

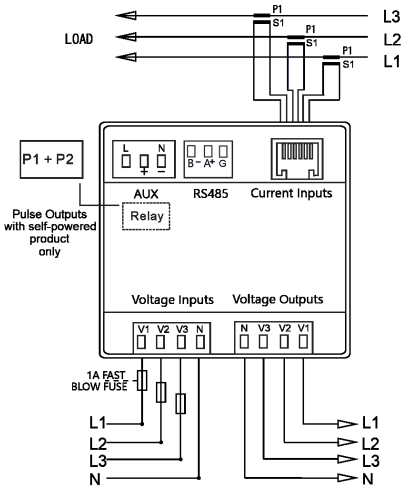
DIMENSIONAL INFORMATION & CONNECTION DIAGRAM



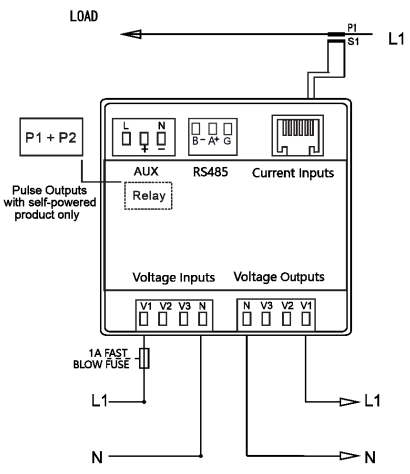








3 phase, 4-wire



Single-phase, 2-wire

TECHNICAL SPECIFICATIONS

Specifications	
Input	
Nominal input voltage	100 – 277 V AC L-N (173-480 V L-L), 576 V L-L MAX
Max. continuous input overload voltage	120% of nominal
Max. short duration input voltage	2 x nominal voltage for 1 second
Nominal input voltage burden	< 0.2 VA per phase
Nominal input current	100 mA
Nom. Input current burden	< 0.1 VA
Max. continuous input overload current	120% of nominal
Max. short duration input current	20 x nominal current for 1 second
Accuracy	
Voltage (V)	+/- 0.5% of range maximum
Current (A)	+/- 0.5% of range maximum
Frequency (Hz)	+/- 0.2% of mid-frequency
Power factor (PF)	+/- 1% of unity (0.01)
Active power (W)	+/- 0.5% of reading
Reactive power (VAr)	+/- 0.5% of reading
Apparent power (VA)	+/- 0.5% of reading
Active energy (kWh)	+/- 0.5% of reading to IEC 62053-21
Reactive energy (kVArh)	+/- 0.5% of reading to IEC 62053-24
THD	2% to 63rd harmonic
Measured Range	
Voltage (V)	5 – 120% of nominal (Min 100 V – 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 +70˚C
Storage temperature	-40˚C to +80˚C
Relative humidity	0 to 95%, non-condensing
Shock	30 g in 3 planes
Vibration	10 Hz to 50 Hz, IEC 60068-2-6, 2 g
Surge voltage	4 kV (IEC 61000-4-5)
Impulse voltage	6 kV (IEC 60060-1)
Electromagnetic immunity	80 MHz - 2 GHz at 10 V/m IEC 61000-4-3
Electrostatic discharge	15 kV (IEC 61000-4-2)
Altitude	3000 m
Warm-up	1 minute
Outputs	
Pulsed outputs (self powered only)	Opto-coupled, potential-free SPST-NO contact
Contact rating current	50 mA at 250 V AC 27 mA at 70 V DC
Contact rating voltage	5-27 V DC
Pulse width	60/100/200 ms
Pulse rate	0.001/0.01 /0.1/1/10/100/1000 kWh/kVArh
Pulsed output relay (non-configurable)	2400IMP/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	92x92 mm
Panel thickness	1-5 mm
Protection rating	Front IP54, Rear IP30, IP64 (with additional kit)
Material	UL 94-VO
Weight	340 g
Cable size	0.05 mm^2 – 2.5 mm^2 stranded wire
Terminals	Voltage and Current : Shrouded screw clamp

Parameters		
Button	Scr	Parameter
ESC Ph S	1	Watts L1 Volts L1 Current L1 Active Energy L1
	2	Watts L2 Volts L2 Current L2 Active Energy L2
	3	Watts L3 Volts L3 Current L3 Active Energy L3
	4	Watts L1 Volts L1 Current L1 Reactive Energy L1
	5	Watts L2 Volts L2 Current L2 Reactive Energy L2
	6	Watts L3 Volts L3 Current L3 Reactive Energy L3
V/A	1	L-N Volts L1, L2, L3
	2	L-L Volts L1, L2, L3
	3	Current L1, L2, L3, N
	4	V-THD% per line
	5	A-THD% per line
	6	Phase Sequence V&I
MD PF Hz	1	PF and System Freq
	2	PF per phase
	3	MD per phase
	4	System Max demand P, Q, S.
P	1	Active Power (P) L1, L2, L3
	2	Reactive Power (Q) L1, L2, L3
	3	Apparent Power (S) L1, L2, L3
	4	System Powers P,Q,S
E	1	Imp Active Energy Exp Active Energy
	2	Imp Reactive Energy Exp Reactive Energy
	3	Total Active Energy Total Reactive Energy

3-in-1 Current Transformers for use with Single Load SL1

FEATURES

- Busbar DIN-rail and metal feet (mounting hardware supplied)
- RJ12 socket for fast connection
- Cable included (length 1.5 m)
- Low 60A ratio for more energy efficient loads
- Aperture hole centres 25, 35, 45, 70 mm

STANDARDS

- IEC61869-2

BENEFITS

- RJ12 connection for simple and easy error free installation

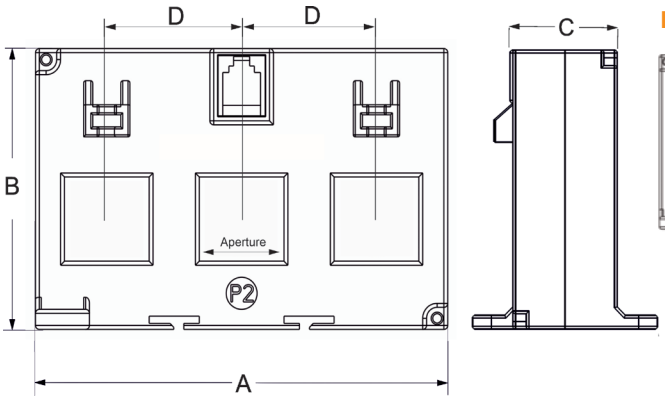
ALL CURRENT TRANSFORMERS ARE SUPPLIED WITH A 1.5M CONNECTING CABLE, WITH RJ12 CONNECTOR TERMINATION AT EACH END.

The 3-in-1 current transformer range are for use with the Integra digital metering system SL1-01/DL1-01/TL1-01 and INT 1221 combines three traditional current transformers in one moulding case with a RJ12 connection for simple and easy error free installation.

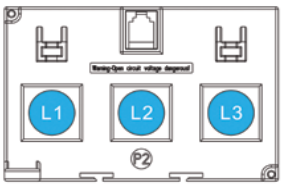
Specification	
System voltage	720V maximum
Test voltage	3kV for 1 minute
System frequency	50Hz or 60Hz
Primary ratings	100mA AC rms. per CT
Overload withstand	1.2 x rated current continuously
Enclosure	Flame retardant grade classified UL94V-O
Aperture hole centres	25mm, 35mm, 45mm, 70mm
Operating temperature	-20°C to +85°C
Compliant with accuracy	IEC61869-2 Class 0.5, Class 1

Part number	Primary Current	VA at Class 1	VA at Class 0.5	A (Width) mm	B (Height) mm	C (Depth) mm	D (Hole Centres) mm	Aperture mm
DL3N1-25-60/0.1	60A	0.25	-	76	78	30	25	3 @ 25 x 15
DL3N1-25-100/0.1	100A	0.35	0.25	76	78	30	25	3 @ 25 x 15
DL3N1-25-125/0.1	125A	0.35	0.25	76	78	30	25	3 @ 25 x 15
DL3N1-25-160/0.1	160A	0.35	0.25	76	78	30	25	3 @ 25 x 15
DL3N1-35-60/0.1	60A	0.25	-	107	70	35	35	3 @ 22 x 22
DL3N1-35-125/0.1	125A	0.5	0.25	107	70	35	35	3 @ 22 x 22
DL3N1-35-160/0.1	160A	0.35	0.25	107	70	35	35	3 @ 22 x 22
DL3N1-35-250/0.1	250A	0.5	0.25	107	70	35	35	3 @ 22 x 22
DL3N1-45-250/0.1	250A	0.25	-	142	86	40	45	3 @ 27 x 32
DL3N1-45-400/0.1	400A	-	0.25	142	86	40	45	3 @ 27 x 32
DL3N1-45-600/0.1	600A	-	0.25	142	86	40	45	3 @ 27 x 32
DL3N1-70-400/0.1	400A	-	0.25	212	100	40	70	3 @ 40 x 52
DL3N1-70-600/0.1	600A	-	0.25	212	100	40	70	3 @ 40 x 52
DL3N1-70-800/0.1	800A	-	0.25	212	100	40	70	3 @ 40 x 52

DIMENSIONAL INFORMATION



PHASE ORIENTATION



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