INTEGRA INT-1022
MULTIFUNCTION METER

KEY FEATURES

- Accuracy Class 1
- Independent Import & Export Energy counter
- True RMS measurements up to 31st Harmonic
- Programmable PT/CT ratios
- 3 Line, 4 Digit bright Red LED display and indication LEDs
- 96x96mm DIN

OPTIONS

- **Limit (Alarm) or Pulse Output**
  Available in Potential Free output Configurable as pulse output which can be used to drive an external counter for energy measurement. Configurable as limit (alarm) switch.
- **MODBUS (RS485) Output**
  RS485 output enables the instrument to transmit all the Measured parameters over standard MODBUS protocol The instrument can be configured locally via front panel keys as well as MODBUS communication.

APPROVALS

- IEC 61326
- IEC 61010-1-2018
- Energy as per: IEC 62053-21

TE Connectivity's (TE) Crompton Instruments Integra 1022 Multifunction Meter measures important electrical parameters in 3phase 4wire, 3phase 3wire, 1phase 2wire and 1phase 3wire network.

It displays many parameters at a glance. It measures electrical parameters like Active/Reactive/Apparent energy, power and all basic parameters. The instrument has one optional built in Relay output which can be configured as pulse output for energy measurement, as well as limit output. Optional MODBUS RTU over RS-485 is built in for remote monitoring and configuration.

The Integra 1022 multifunction instrument is a panel mounted 96 x 96mm DIN.

Customers can count on consistent, high quality products, driven by TE's proven innovation and backed by our extraordinary customer support.

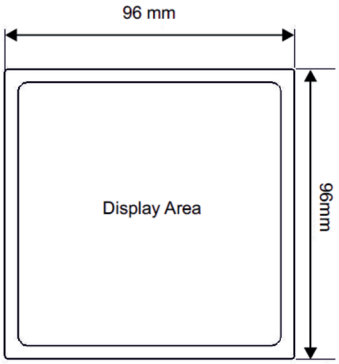
TECHNICAL SPECIFICATIONS

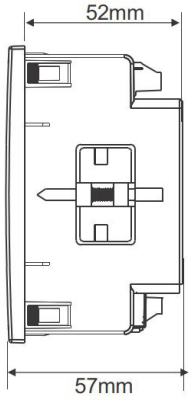
Input Voltage:	
Nominal input voltage (Vn) Programmable on-site	100VLL to 500VLL (57.5VLN to 288.67VLN)
System PT primary values	100VLL to 1200kVLL programmable on site (1000MVA maximum power per phase) (1200kVLL when CT primary ≤ 1002A)
Max continuous input voltage	120% of nominal value
Overload Indication	"-ol-" >121% of Nominal value
Nominal input voltage burden	< 0.3VA approx. per phase (at nominal 240V)
Overload Withstand:	2 x rated value for 1 second, repeated 10 times at 10 second intervals
Input Current:	
Nominal input current (In)	1A / 5A onsite programmable
System CT primary values	From 1A to 9999A (1000 MVA maximum power per phase) (9999A when PT primary ≤ 120kVLL)
Max continuous input current	120% of nominal value
Overload Indication	"-ol-" >121% of Nominal value
Nominal input current burden	< 0.3VA approx. per phase
Overload Withstand	20 x rated value for 1 second, repeated 5 times at 5 minute intervals
Auxiliary Supply:	
Higher Auxiliary supply range	60-300V AC/DC (230V AC/DC nominal)
Lower Auxiliary supply range	20-60V AC/DC (24V AC / 48V DC nominal)
Aux Supply frequency	45 to 65 Hz range
Auxiliary Supply burden	< 6VA approx.
Operating Measuring Ranges:	
Current (Energy Measurement)	1 to 120% of nominal value
Starting current	As per Standard IEC 62053-21 (Class 1)
Voltage	19VLL to 600VLL (11VLN to 346VLN)
Power Factor	0.5 Lag ... 1 ... 0.5 Lead
Frequency	40Hz to 70Hz
Reference conditions for Accuracy:	
Reference temperature	23°C +/- 2°C
Influence of temperature	0.015%/°C for Voltage & 0.025%/°C for Current
Input waveform	Sinusoidal (distortion factor 0.005)
Input Frequency	50/60 Hz ± 2%
Auxiliary supply frequency	50/60 Hz ± 1%
Voltage Range	20 ... 120% of nominal value
Current Range	10 ... 120% of nominal value
Total Harmonic Distortion	40% (up to 31st Harmonics)
Voltage Range	50% ... 100% of nominal value
Current Range	20% ... 100% of nominal value
Display Specification:	
Response time to step input	1 sec approx.

TECHNICAL SPECIFICATIONS

Accuracy (Energy):	
Active Energy	Class 1 as per IEC 62053 – 21
Apparent Energy	Class 1
Reactive Energy	Class 2 as per IEC 62053-23
Accuracy:	
Voltage	± 0.5% of Nominal value
Current	± 0.5% of Nominal value
Frequency	± 0.1% of mid frequency
Active Power	± 1% of Nominal value
Re-Active Power	± 1% of Nominal value
Apparent Power	± 1% of Nominal value
Power Factor/angle	±3°
THD (Voltage/Current)	±3%
Applicable standards:	
EMC	IEC 61326 – 1 :Table 2
Safety	IEC 61010-1-2018 use
IP for water & dust	IEC 60529
Pollution degree:	2
Installation category:	III
High Voltage Test Input / Aux Vs Surface Input + AUX Vs Remaining Circuit MODBUS Vs Relay	 4kV RMS, 50Hz, 1min 3.3kV RMS, 50Hz, 1min 2kV RMS, 50Hz, 1min
Environmental:	
Operating temperature	-20 to + 70°C
Storage temperature	-25 to +75°C (Tested as per IEC 60688)
Relative humidity	0... 95% RH (non condensing)
Warm up time	Minimum 3 minute
Shock (As per IEC 60068-2-27)	Half sine wave, Peak acceleration 30gn (300 m/s^2),duration 18ms.
Vibration	10 ... 150 ...10 Hz, 0.15mm amplitude
Number of Sweep cycles	10 per axis
Enclosure	IP20 (Terminal side) and IP54 (Front side)
Altitude	2000
Installation:	
Mechanical Housing	Lexan 940 (polycarbonate), Flammability Class V-0 acc. to UL 94, self extinguishing, non dripping, free of halogen
Mounting Position	Panel Mounted (96X96)
Connection Element	Conventional screw type terminal with indirect wire terminals (Screw Torque: 0.5N.m)
Connection Terminal	4mm2 solid or 2.5mm2 stranded cable
Interfaces:	
Impulse Led	For energy testing
Relay (Optional)	250 VAC, 5A AC 30VDC, 5A DC
Modbus (Optional)	RS485, max.1200m. Baud rate: 2.4k, 4.8k, 9.6k, 19.2k, 38.4k, 57.6k bps (Response time < 200ms)

DIMENSIONS

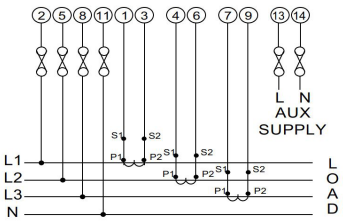




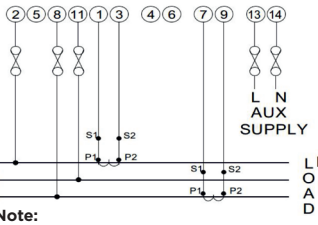
DIMENSIONS	
Bezel size (DIN 43 718)	96 mm x 96 mm.
Panel cut-out	92 +0.8 mm x 92 + 0.8 mm
Weight	250 gm Approx

WIRING DIAGRAMS

3PH - 4 Wire

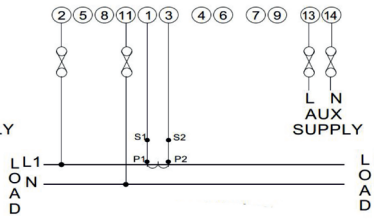


3PH - 3 Wire

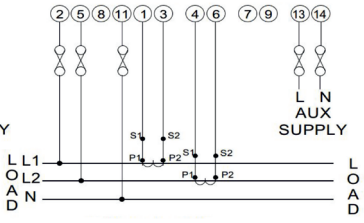


Note:
L2 phase needs to be connected in terminal 11 instead of terminal 5 only for 3 Phase 3 Wire connections.

Single Phase Load (1 Phase 2 Wire)



Single Phase Load (1 Phase 3 Wire)



WIRING GUIDELINES	
Solid with Pin type lugs (sq. mm)	1 to 2.5
Stranded with pin types lugs (sq. mm)	1 to 2.5
Torque value (Nm) 1. Aux and Voltage Terminals 2. Current Terminals 3. RS485, DI and Relay Terminals	 0.5 to 0.6 0.4 to 0.5 0.3 to 0.4
Length available for lug entry in terminal (mm)	9.5

Note:
1. It is recommended that the wires used for connections to the instrument should have lugs soldered at the end i.e., the connections should be made with Lugged wires for secure connections.

PARAMETERS					
Sr No.	**Parameters**	**3 Phase 4 Wire**	**3 Phase 3 Wire**	**1 Phase 2 Wire**	**1 Phase 3 Wire**
1.	System Volts	✓	✓	✓	✓
2.	System Current	✓	✓	✓	✓
3.	Voltage L1	✓	×	×	✓
4.	Voltage L2	✓	×	×	✓
5.	Voltage L3	✓	×	×	×
6.	Voltage L12	✓	✓	×	✓
7.	Voltage L23	✓	✓	×	×
8.	Voltage L31	✓	✓	×	×
9.	Current L1	✓	✓	×	✓
10.	Current L2	✓	✓	×	✓
11.	Current L3	✓	✓	×	×
12.	Frequency	✓	✓	✓	✓
13.	System Active Power	✓	✓	✓	✓
14.	Active Power L1	✓	×	×	✓
15.	Active Power L2	✓	×	×	✓
16.	Active Power L3	✓	×	×	×
17.	System Re-active Power	✓	✓	✓	✓
18.	Re-active Power L1	✓	×	×	✓
19.	Re-active Power L2	✓	×	×	✓
20.	Re-active Power L3	✓	×	×	×
21.	System Apparent Power	✓	✓	✓	✓
22.	Apparent Power L1	✓	×	×	✓
23.	Apparent Power L2	✓	×	×	✓
24.	Apparent Power L3	✓	×	×	×
25.	System Phase Angle	✓	✓	✓	✓
26.	System Power Factor	✓	✓	✓	✓
27.	Power Factor L1	✓	×	×	✓
28.	Power Factor L2	✓	×	×	✓
29.	Power Factor L3	✓	×	×	×
30.	Phase Angle L1	✓	×	×	✓

INTEGRA INT-1022
Multifunction Meter

PARAMETERS					
Sr No.	**Parameters**	**3 Phase 4 wire**	**3Phase 3Wire**	**1Phase 2Wire**	**1 Phase 3 Wire**
31.	Phase Angle L2	✓	×	×	✓
32.	Phase Angle L3	✓	×	×	×
33.	Import Active Energy	✓	✓	✓	✓
34.	Export Active Energy	✓	✓	✓	✓
35.	Inductive Re-active Energy	✓	✓	✓	✓
36.	Capactivice Re-active Energy	✓	✓	✓	✓
37.	Apparent Energy	✓	✓	✓	✓
38.	RPM	✓	✓	✓	✓
39.	Min and Max System Voltage	✓	✓	✓	✓
40.	Min and Max System Current	✓	✓	✓	✓
41.	Run Hour	✓	✓	✓	✓
42.	On Hour	✓	✓	✓	✓
43.	Number of Interruptions	✓	✓	✓	✓
44.	Current Demand	✓	✓	✓	✓
45.	kVA Demand	✓	✓	✓	✓
46.	Import kW Demand	✓	✓	✓	✓
47.	Export kW Demand	✓	✓	✓	✓
48.	Max Current Demand	✓	✓	✓	✓
49.	Max kVA Demand	✓	✓	✓	✓
50.	Max Import kW Demand	✓	✓	✓	✓
51.	Max Export kW Demand	✓	✓	✓	✓
52.	Neutral Current	✓	×	×	✓
53.	Max Neutral Current	✓	×	×	✓
54.	%THD Voltage L1	✓	✓	×	✓
55.	%THD Voltage L2	✓	×	×	✓
56.	%THD Voltage L3	✓	✓	×	×
57.	%THD Current L1	✓	✓	×	✓
58.	%THD Current L2	✓	×	×	✓
59.	%THD Current L3	✓	✓	×	×
60.	System Voltage THD	✓	✓	✓	✓
61.	System Current THD	✓	✓	✓	✓
62.	Min and Max Import Active Power*	✓	✓	✓	✓
63.	Min and Max Export Active Power*	✓	✓	✓	✓
64.	Min and Max Inductive Re-active Power*	✓	✓	✓	✓
65.	Min and Max Capacitive Re-active Power*	✓	✓	✓	✓
66.	Min and Max Apparent Power*	✓	✓	✓	✓
67.	Min and Max Line Voltage*	✓	✓	✓	✓
68.	Min and Max Line Current*	✓	✓	✓	✓

***Note: Line and System parameters Min Max values are shown on Modbus only**

DESCRIPTION	PART NUMBER
INT-1022 CT 1/5A 100-500V AC 20-60V AC/DC AUX no Outputs	INT-1022-L-000
INT-1022 CT 1/5A 100-500V AC 20-60V AC/DC AUX RS485 + 1 Relay Option	INT-1022-L-110
INT-1022 CT 1/5A 100-500V AC 60-300V AC/DC AUX no Outputs	INT-1022-M-000
INT-1022 CT 1/5A 100-500V AC 60-300V AC/DC AUX RS485 + 1 Relay Option	INT-1022-M-110

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