

# CROMPTON INSTRUMENTS INTEGRA TL 1 TRI-LOAD

## DIGITAL METERING SYSTEM



**PROVIDES MEASUREMENT, ISOLATION AND CONVERSION OF ALL MAIN ELECTRICAL PARAMETERS FROM 3x THREE-PHASE LOADS, IN A SINGLE METER.**

### KEY FEATURES

- DIN-rail enclosure
- Single meter for 3x three phase loads
- Multiple display modes
- Modbus RTU RS485 as standard
- User-programmable CT ratio and system configuration
- Continuous busbar or individual busbar metering
- RJ12 socket for fast connection

TE Connectivity's (TE) Crompton Instruments Integra TL1 is a Digital Metering System (DMS) which provides measurement, isolation and conversion of all main electrical parameters from 3x three phase loads, in a single meter. It can be used in three-phase unbalanced four-wire electrical systems and has an accuracy of CL1 Energy.

The Integra TL1 has an integrated microprocessor for very good waveform handling of distorted waveforms, and is ideal for low voltage applications. It provides a cost-effective way of metering split load distribution and panel boards in a single metering solution.

### APPLICATIONS

- Switchgear distribution systems
- Energy/Building
- Management Systems

### RELEVANT STANDARDS AND TEST REPORTS

- IEC 61326
- IEC 61010-1
- IEC 62053-21
- RoHS Compliant

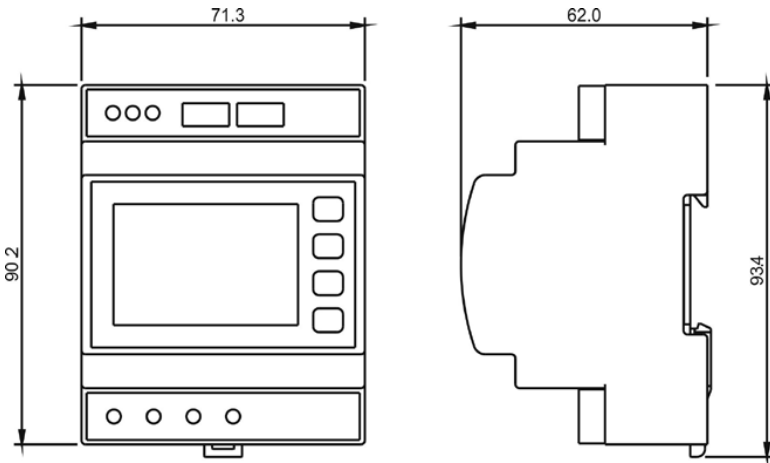
## ORDERING INFORMATION

Model	Part number
Integra Triload multifunction DIN-rail mounted meter LCD Input 400 V L-L, 100 mA AC Modbus RTU RS 485 Self powered	Integra TL1 DMS TL1-01

## DISPLAYED PARAMETERS

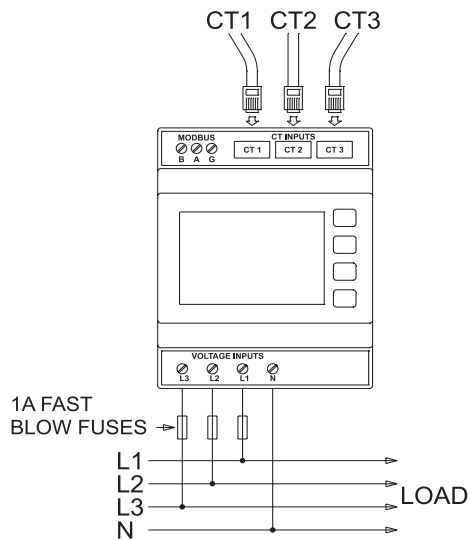
LOAD 1	LOAD 2	LOAD 3	SYSTEM
Current L1	Current L1	Current L1	Current L1
Current L2	Current L2	Current L2	Current L2
Current L3	Current L3	Current L3	Current L3
kW L1	kW L1	kW L1	Voltage L1
kW L2	kW L2	kW L2	Voltage L2
kW L3	kW L3	kW L3	Voltage L3
Average System Volts	Average System Volts	Average System Volts	Average System Volts
Average System Current	Average System Current	Average System Current	Average System Current
Average System kWh	Average System kWh	Average System kW	Total System kWh
kWh Import	kWh Import	kWh Import	kWh Import - Load 1
			kWh Import - Load 2
			kWh Import - Load 3
			Frequency
			Power Factor (PF)

## DIMENSIONAL INFORMATION & CONNECTION DIAGRAM



3 phase, 4-wire

RJ 12 connection



## TECHNICAL SPECIFICATIONS

Parameters	
<b>Input</b>	
Nominal input voltage	100V to 230V AC rms., L - N. 173V to 400V AC rms., L - L
Max. continuous input overload voltage	120% of nominal
Max. short duration input voltage (1 sec)	2 x nominal voltage
Nominal input voltage burden	0.2VA per phase (Except L1)**Self powered using the meter electrical input from L1 (6VA)
Nominal input current	100mA AC rms. per CT
System CT primary values	1-9999A(selectable from display)
CT burden	0.1 VA
<b>Accuracy</b>	
Voltage (V)	< 0.5% of reading
Current (A)	< 0.5% of reading
Frequency (Hz)	< 0.2% of mid range
Power factor (PF)	1% of unit
Active power (W)	+/- 0.5% of reading
Active energy (kWh)	+/- 0.5% of reading 62053-22
<b>Range</b>	
Voltage (V)	5% to 120% for nominal
Current (A)	5% to 120% of nominal
Frequency	45 - 65 Hz
Power	1 - 144% of nominal 0.8 capacitive - 1 - 0.8
Power factor	Inductive (functional 4 quadrant, 0-1 lag lead)
Energy	6-digit resolution and to be displayed in kWh (Maximum display 999999, before rollover to 0)
<b>Outputs</b>	
Communication protocol	RS485 Modbus RTU
Type	2-wire half duplex
Baud rate	9600, 19200, 38400
<b>Enclosure</b>	
Enclosure style	DIN-rail mounting EN43880
Dimensions	72 x 90 x 62 mm
Material	Polycarbonate to UL94-V0
Weight	0.25kg
Terminals voltage	Shrouded screw-clamp 0.05-4mm wire
Terminals CT	RJ12 connector
Sealing	IP52 front of panel
<b>Environment</b>	
Operating temperature	-10°C to +55°C
Storage temperature	-20°C to +70°C
Relative humidity	0-90% non-condensing
Shock	30g in 3 planes and vibration of 0Hz to 50Hz IEC 60068-2-6, 2g
Vibration	0Hz to 50Hz, IEC 60068-2-6, 2g. Withstand test 2.2kV, 50Hz for 1 minute between auxiliary / input / output

# 3-in-1 Current Transformers for use with Tri-Load DL1

## 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



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-0
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

## STANDARDS

- IEC61869-2



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

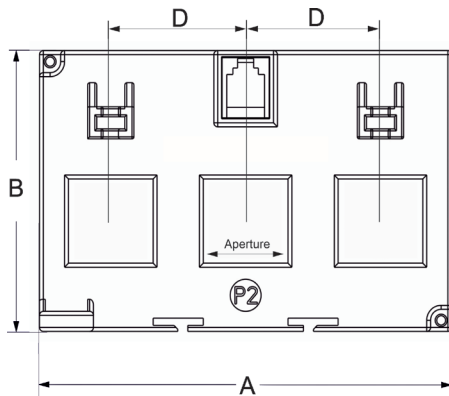
## BENEFITS

- RJ12 connection for simple and easy error free installation

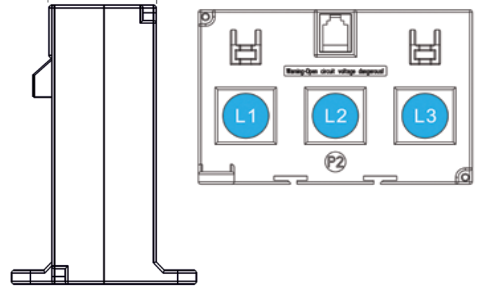


ALL CURRENT TRANSFORMERS ARE SUPPLIED WITH A 1.5M CONNECTING CABLE, WITH RJ12 CONNECTOR TERMINATION AT EACH END.

## DIMENSIONAL INFORMATION



## PHASE ORIENTATION



## FOR MORE INFORMATION:

TE Technical Support Centres

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

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