



Energy Division

## Crompton Instruments Integra Ci3 Digital Metering System

# Integra Ci3 Digital Metering System

The Integra Ci3 digital metering system (dms) represents the first model of a new generation of digital metering systems designed to complement the current Crompton Instruments Integra series.

The Integra Ci3 meter is an accurate and cost effective solution for measurement and display of all major electrical and power quality parameters. Its easy programming, mounting and user-friendly navigation make the Integra Ci3 dms an ideal choice for customers who require reliable energy measurement.

Integra Ci3 dms is built to high quality standards utilising the latest 'state-of-the-art' microprocessor and manufacturing technology. Designed, developed and manufactured in the UK, the Integra Ci3 dms builds on Crompton Instruments' long established reputation for metering product quality.

The product features a DIN 96 panel mounted enclosure, backlit LCD display and user programmable CT ratios, all accessible via an intuitive user interface. Integra Ci3 dms measures 17 electrical parameters including total harmonic distortion (THD) measurement up to the 31st harmonic.

## Programmable Functions

Integra Ci3 dms is programmable to suit single-phase, three-phase three-wire and three-phase four-wire system configurations. Programmable CT ratios enable to display any current range.

## Display

The parameters can be viewed on a backlit LCD display. The 15 screens are accessible via four buttons on the front panel allowing to scroll between various screens making the navigation very user-friendly, intuitive and above all – simple.

## Plug-in Modules

Plug-in modules allows to fit either maximum of two isolated pulsed output relays or a RS-485 communication module + one isolated pulsed output relay. The communication output module can be programmed internally to respond either to Modbus® RTU or Johnson Controls.

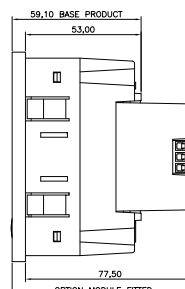
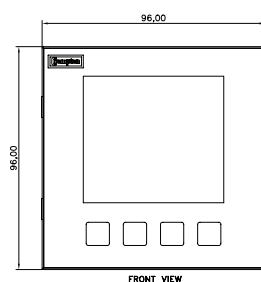
## Panel Mounting

Integral retention clips allow fast, safe and secure panel mounting in various material thicknesses without the need for external screws or clips.

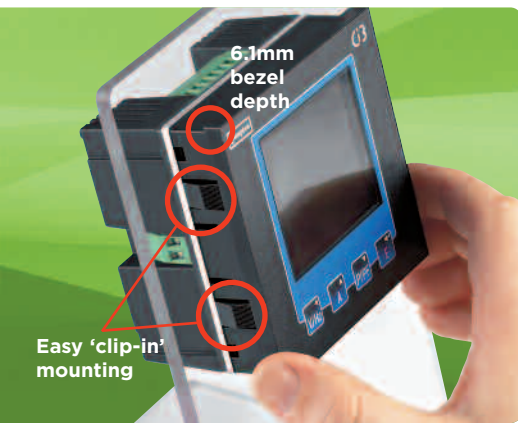
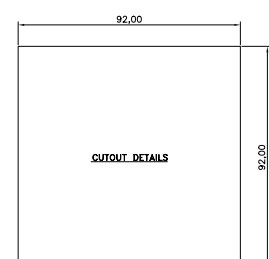
## Product Code

Description	Part number
Integra Ci3 base unit	CI3-01
<b>Options</b>	
Pulsed output	CI-PUL-01
Modbus™ RS485	CI-MOD-01
<b>Accessories</b>	
IP65 protective cover	3 G365 02
IP54 panel gasket	3 C345 01

## Dimensions



## Panel cut-out



## Features

- DIN 96 enclosure
- Backlit LCD screen
- Bezel depth 6.1mm
- Plug-in output modules
- Programmable CT ratio
- True rms measurement
- User programmable system configuration

## Benefits

- Cost effective
- Intuitive navigation
- Crompton renowned quality
- UK manufactured
- Easy 'clip-in' panel mounting
- Ex-stock delivery

## Standards

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



## Specifications

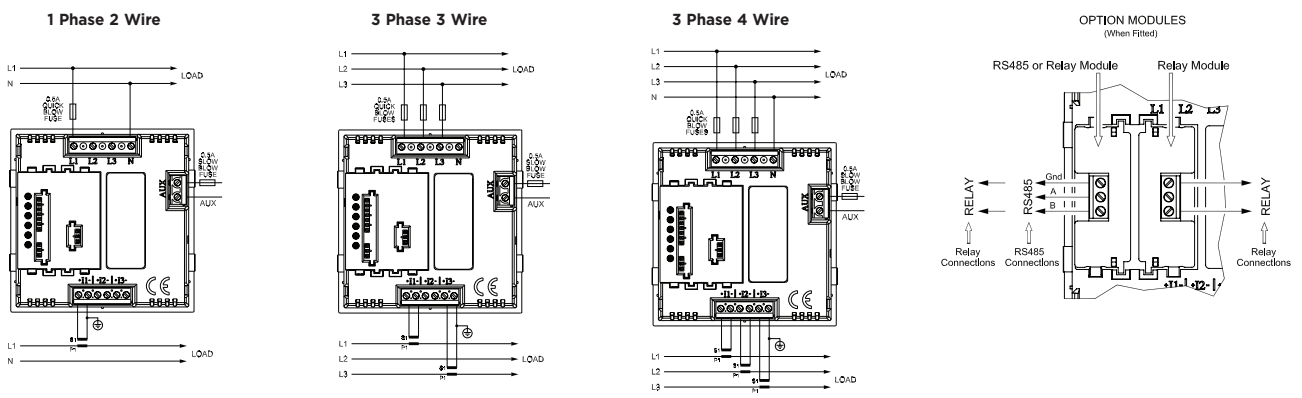
<b>Input</b>	
Nominal input voltage	100-289V AC L-N (173-500V AC L-L)
Max. continuous input overload voltage	120% of nominal
Max. short duration input voltage	2 x range maximum (1 second application repeated 5 times at 5 minute intervals)
Nominal input voltage burden	< 0.2VA per phase
Nominal input current	5A AC rms
Max. continuous input overload current	120% of nominal
Max. short duration input current	10 x nominal (1 second application repeated 5 times at 5 minute intervals)
Frequency	45-66Hz
<b>Auxiliary</b>	
Operating range	110-400V AC nominal +/-10% (99-440V AC absolute limits) or 120-350V DC +/-20% (96-420V DC absolute limits)
<b>Accuracy</b>	
Voltage (V)	0.5%
Current (A)	0.5%
Neutral current calculated (A)	4%
Frequency (Hz)	0.1 Hz
Power factor (PF)	1% of unity
Active power (W)	+/- 1% of range
Reactive power (VAr)	+/- 1% of range
Apparent power (VA)	+/- 1% of range
Active energy (kWh)	Class 1 (IEC 62053-21)
Reactive energy (kVArh)	+/- 1% of range
THD	1% up to 31st harmonic
Response time	1sec
<b>Output modules (optional)</b>	
Pulsed output relays	1 per module (2 modules fitted per Ci3)
Contact rating	50mA max at 250V AC
Type	Solid state relay
RS485 output module	1 RS-485 communication module (maximum of 1 module fitted per Ci3)
Type	2-wire half duplex
Baud rate	2400, 4800, 9600, 19200, 38400 Other communication modules available in 2010
<b>Enclosure</b>	
Enclosure style	DIN 96 panel mount
Dimensions	96x96x64.1mm (depth behind panel without module 53mm, with module 77.5mm)
Panel cut-out	92x92mm
Panel thickness	1-5mm (1-3mm when used with IP65 cover)
Front protection rating	IP52
Case protection rating	IP30
Material	Polycarbonate to UL94V0
Weight	300g
Terminals	Shrouded screw-clamp 0.05-4mm wire
<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
Vibration	10Hz to 50Hz
Dielectric voltage	Withstand test 3.25kV rms 50Hz for 1 minute between comms and measuring inputs, comm and aux, aux and measuring inputs



## Parameters

Button	Screen	Parameters
V/Hz	1	Volts L1 - N Volts L2 - N Volts L3 - N
	2	Volts L1 - L2 Volts L2 - L3 Volts L3 - L1
	3	Frequency
	4	Volts L1 - N THD% Volts L2 - N THD% Volts L3 - N THD%
	5	Volts L1 - L2 THD% Volts L2 - L3 THD% Volts L3 - L1 THD%
A	1	Current L1 Current L2 Current L3
	2	Neutral Current
	3	L1 Current Max Demand L2 Current Max Demand L3 Current Max Demand
	4	Neutral Current Max Demand
	5	Current L1 THD% Current L2 THD% Current L3 THD%
P/PF	1	kW kVAr kVA
	2	kW Max Demand
	3	Power Factor
E	1	kWh
	2	kVArh

## Wiring Diagrams





## Moulded Case Current Transformers Ebony Series Measuring and Protection

The range of Crompton Instruments Ebony current transformers offers wide system current ratings, apertures, busbar and case sizes to suit every application. Manufactured to meet IEC 60044-1:2003, the range benefits include ratio rating from 5/5 to 4000/5, accuracy up to class 0.5, integral terminal cover for safety and multiple mounting options.

### Features

- CT ratios from 5/5 to 4000/5
- Accuracy up to Class 0.5
- Integral terminal cover
- High impact, flame retardant moulded case
- Busbar, DIN-rail or foot mounting options

### Benefits

- Wide range of apertures and case sizes
- Reduction of high currents for ease of metering
- Long product life

### Approvals

- BS EN 61010-1
- IEC 61010-1
- IEC 60044-1
- UL Recognized file no: E257877 (MA5Y, M55E, M53J, M63N, M93L, MB5D, MB5Z only)



### Specifications

Active energy accuracy:	Class 1 in accordance with CEI-EN 62053-21 standard
System voltage:	720V maximum
Test voltage:	3kV for 1 minute
System frequency:	50/60Hz
Short circuit thermal current (I <sub>th</sub> ):	60 x rated primary current for 1 second
Overload withstand:	1.2 x rated current continuously
Dynamic current (I <sub>dyn</sub> ):	= 2.55 x I <sub>th</sub>
Saturation coefficient:	<5 for through aperture models <10 for wound primary
Service temperature:	-20°C to 85°C
Insulation class:	Class E BS2757 IEC85
Enclosure code:	IP40
Integral terminal cover:	IP20B
Complies with:	IEC 60044-1:2003
Humidity:	Up to 95% RH (non condensing)
Secondary terminals screw clamp:	Up to 10mm <sup>2</sup> cable
'Fast On':	6.3mm type

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