

Integra 1630 digital metering system

FEATURES

- Low profile
- High contrast LED display
- LED annunciators for each measured parameter
- User programmable system configuration (4-wire default)
- Fully programmable VT and CT ratios
- Current demand per phase
- Elapsed time counter for connected loads
- Removable bezel for very low profile applications



PROGRAMMABLE PARAMETERS

Parameter	Range
Password	4-digit 0000-9999
CT primary current	Maximum 9999A ** CT Secondary Current: 5 A (1 A option)
VT primary voltage	Maximum 400 kV **
VT secondary voltage	Nominal input voltage ** maximum VT or CT ratios are limited so that the combination of primary voltage and current do not exceed 360 MW at 120% of relevant input
Demand integration time	8, 15, 20, 30, 60 minutes
3 independent resets	Demands and maximum demands Energy registers Hours run
Pulse output duration	60, 100, 200 milliseconds
Pulse rate divisors	1, 10, 100, 1000
RS485 baud rate	4.8, 9.6, 19.2, 38.4 kBd
RS485 parity and stop bits	Odd or even with 1 stop bit or no parity with 1 or 2 stop bits

APPROVALS

- IEC1010-1 (BSEN 61010-1 – 2001)

BENEFITS

- True rms measurement
- High accuracy <0.2% on some measurements
- Configurable via software package or menu-driven interface
- Import and export monitoring

The Integra 1630 digital metering system (dms) provides high accuracy 0.2% measurement, display and communication of all major electrical and power quality parameters including total harmonic distortion (THD) up to the 31st harmonic. 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.

This DIN 96 panel mounting enclosure offers simple programming and display of up to 35 electrical parameters via a simple menu-driven user interface on the front panel. Optional pulsed and digital communication outputs are available, to allow up to 60 parameters to be communicated to building management systems. A Windows-based software package is available to remotely configure the Integra dms and display all 60 major parameters.

OPERATION

Integra 1630 dms offers uncomplicated operation and high accuracy measurement of three-phase voltage, current, frequency, Watts, VAR, VA, energy, power factor, and total harmonic distortion of both phase and system, current and voltage. Integra 1630 dms includes true measurement of both line-to-neutral, and line-to-line voltages, ensuring accurate readings. The pre-calibrated plug-in option cards allow cost effective upgrades with any combination of pulsed, analogue and digital communication outputs. Cards slot simply into the back of the unit and products do not need to be removed from the installation or recalibrated.

COMMUNICATION

Integra 1630 dms offers a wide range of communication protocols including:

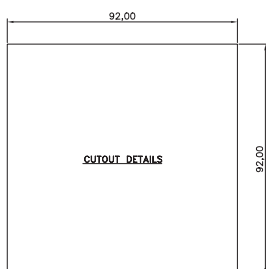
- Pulsed outputs
- Modbus RTU RS 485 Protocol
- Modbus TCP (Ethernet)
- BACnet IP Interface
- BACnet MSTP Interface
- Profibus DP Protocol

PRODUCT CODES

Description	Cat. no.
1-phase, 3-phase 3/4-wire, 100 - 240 V L-L, 5 A CT input, Aux. 100 - 250 V AC/DC	INT-1630-L-5-M-option
1-phase, 3-phase 3/4-wire, 241 - 480 V L-L, 5 A CT input, Aux. 100 - 250 V AC/DC	INT-1630-M-5-M-option
Options	
No options	000
1 pulsed output	100
2 pulsed output	200
Modbus RTU RS485 protocol	010
Modbus RTU RS485 protocol + 1 kWhr pulsed output	110
Modbus RTU RS485 protocol + 2 kWhr pulsed output	210
Profibus™	050
Modbus RTU RS485 protocol TCP	070
BACnet IP interface	080
BACnet MSTP interface	090
Extended collar	OPT-1630-collar

Integra 1630 digital metering system

PANEL CUT-OUT



SPECIFICATIONS

Input	
Nominal input voltage	57.7 to 277 V L-N, 100 to 480 V L-L
Max. continuous input voltage	120% of nominal
Max. short duration input voltage	2 x nominal for 1 second, repeated 10 times at 10 second intervals
System VT ratios (primary)	Any significant 4-digit integer value up to 400 kV **
Nominal input voltage burden	<0.2 VA
Nominal input current	5 A (1 option)
System CT primary values	Any integer value up to 9999 A **
Max. continuous input current	120% nominal
Max. short duration input current	20 x nominal for 1 second, repeated 5 times at 5 minute intervals
Nominal input current burden	< 0.6 VA ** maximum CT and VT ratios are limited so that the combination of primary voltage and current do not exceed 360 MW at 120% of relevant input
Output modules (optional)	
RS485 communications	2-wire half duplex
Baud rates	4800, 9600, 19200, 38400
Pulsed	Solid state relays
Pulse duration	60, 100 or 200 milliseconds
Contact rating	50 mA max at 250 V AC max
Pulsed outputs	1 or 2
Auxiliary	
Standard nominal supply	100-250 V AC or DC voltage: (85-287 V AC absolute limits) (85-312 V DC absolute limits)
AC supply frequency range	45 – 66 Hz
AC supply burden	6 VA
Optional auxiliary DC supply	12 – 48 V DC (10.2-60 V DC absolute limits)
DC supply burden	6 VA
Measuring Ranges	
Voltage	80 – 120% of nominal (functional 5-120%)
Current	5 – 120% of nominal
Frequency	45 – 66 Hz
Measuring Ranges	
Power factor	0.8 capacitive–1–0.8 inductive (functional 4 quadrant, 0-1 lag/lead)
THD	Up to 31st harmonic 0 – 40% Measured voltage >5% of range Measured current >5% of nominal Full accuracy of voltage >25% of range Full accuracy of current >25% of nominal
Energy	7-digit resolution
Reference conditions	
Ambient temperature	23 ±1°C
Input frequency	50 or 60 Hz ±2%
Input waveform	Sinusoidal (distortion factor < 0.005)
Auxiliary supply voltage	Nominal ±1%
Auxiliary supply frequency	Nominal ±1%
AC auxiliary supply waveform	Sinusoidal (distortion factor < 0.05)
Magnetic field of external origin	Terrestrial flux
Accuracy	
Voltage	±0.17% of range maximum
Current	±0.17% of nominal
Frequency	±0.15% of mid frequency
Active power	±0.2% of range maximum
Power factor	1% of unity
Reactive power (VAR)	±0.5% of range maximum
Apparent power (VA)	±0.2% of range maximum
THD	±1%
Neutral current calculated	±0.95% of nominal
Energy	0.3% of range maximum (Better than class 1) IEC1036 Sect 4.6)
kVArh	0.6% of range maximum
Temperature coefficient	Voltage and current typical: 0.013%/°C Watts typical: 0.018%/°C

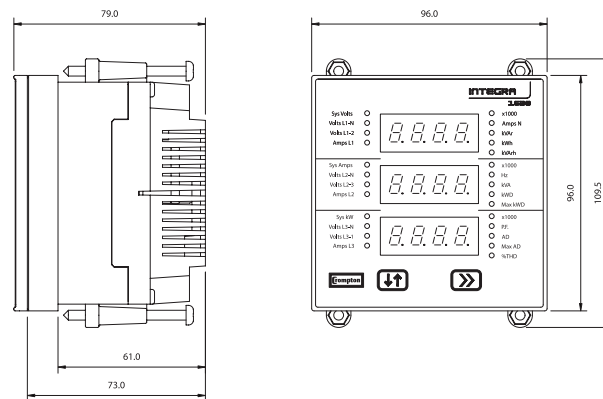


Integra 1630 digital metering system

SPECIFICATIONS

Enclosure	
Enclosure style	Enclosure style
Compliant with	IEC 1010-1/ BSEN 61010-1 : 2001 CAT III, CE EMC and LVD directives
Material	Polycarbonate
Terminals	Shrouded screw-clamp 0.05 mm to 4 mm wire
Dielectric voltage	Withstand test 3.25 kV rms 50 Hz for 1 minute between all electrical circuits
Operating temperature	-20 to +60°C
Storage temperature	-30 to +80°C
Relative humidity	0 – 90% (non condensing)
Warm-up time	1 minute
Shock	30 g in 3 planes
Vibration	10-18 Hz, 1.5mm peak-to-peak 18-150 Hz @1 g
IP protection	IP54
Dimensions	96 mm wide x 96 mm high x 79 mm deep (max). Typically <60 mm depth behind panel
Panel cut-out	92 mm x 92 mm, 3.62" x 3.62"

DIMENSIONS



WIRING

