

Elite 440

Multi-line Three-phase Panel Meter

Elite 440 is a multi-line three-phase digital panel meter for accurate and reliable measurement of electrical quantities (voltage, current, power, frequency, etc.) in industrial and commercial applications. It has a large multi-line backlit LCD display which enables four parameters to be displayed at the same time. Modbus communications capability allows easy integration with energy monitoring systems. An expansion module can be fitted for enhanced functionality (pulse input/output)



Applications

- Commercial and industrial sub-metering applications
- Building management and monitoring systems (SCADA/EMS/DAS)
- High, medium and low-voltage switchgear panels
- Control and relay panels
- Power Control Centre (PCC) panels
- Motor Control Centre (MCC) panels
- Energy management for commerce and industry

Benefits

- Easy interface with external devices through built-in Modbus (RS-485)
- Detachable connectors for easy installation
- Onboard diagnostics make installation easy
- Suitable for star or delta connections and for low or high-voltage applications
- Cost-effective online monitoring
- Field-configurable CT/ PT primary and secondary values using push-buttons

Features

- Large four-line seven-digit display with quadrant identification section and bar graph for instantaneous power-level indication
- High accuracy: Class 1.0, 0.5S, 0.2S
- Average THD measurement for voltage, current and power, up to 31st harmonic
- Measurement selection (star or delta/ 3P4W or 3P3W)
- Modbus communication via RS-485 port
- True root-mean squared (RMS) metering
- Calibration LED for accuracy test on site
- Wide and configurable current range 1-2A and 5-10A
- Wide-range auxiliary power supply, suitable for high-voltage or low-voltage installations
- Maximum demand recording
- Midnight snapshot (values) for selected energy registers
- Scroll-lock and 'Favourites Page' display support
- Expansion capability via add on modules for analogue outputs or pulse inputs/outputs
- Password protection for setup mode

Elite 440

Features	Models							
	441	442	443	444	445	446	447*	448*
P-N voltage	●	●	●	●	●	●	●	●
Average P-N voltage	●	●	●	●	●	●	●	●
P-P voltage	●	●	●	●	●	●	●	●
Average P-P voltage	●	●	●	●	●	●	●	●
Line current (L1, L2, L3 and Average)	●	●	●	●	●	●	●	●
Active / Reactive Current	●	●	●	●	●	●	●	●
Frequency	●	●	●	●	●	●	●	●
Power factor		●	●	●	●	●	●	●
Average Power factor		●	●	●	●	●	●	●
Active Power		●	●	●	●	●	●	●
Total Active Power		●	●	●	●	●	●	●
Reactive Power			●	●	●	●	●	●
Total Reactive Power			●	●	●	●	●	●
Apparent Power			●	●	●	●	●	●
Total Apparent Power			●	●	●	●	●	●
Active Total Import / Export Energy					●	●	●	●
Reactive Import (Q1+Q2) / Export (Q3+Q4) Energy						●		●
Reactive (Q1,Q2,Q3,Q4) Energy					●		●	
Apparent Import / Export Energy					●	●	●	●
Active / Apparent Forwarded		●	●	●				
Reactive Lag / Lead Forwarded			●	●				
Cumulative MD				●	●	●	●	●
Phase Angle			●	●	●	●	●	●
Power On / Off Hours			●	●	●	●	●	●
Load On / Off Hours		●	●	●	●	●	●	●
Feeder Interruptions Count (When Aux is also off)			●	●	●	●	●	●
Min / Max Values							●	●
THD Voltage							●	●
THD Current							●	●
THD Power							●	●
RPM with Freq and VUnb and IUnb		●	●	●	●	●	●	●
Modbus on RS 485	●	●	●	●	●	●	●	●

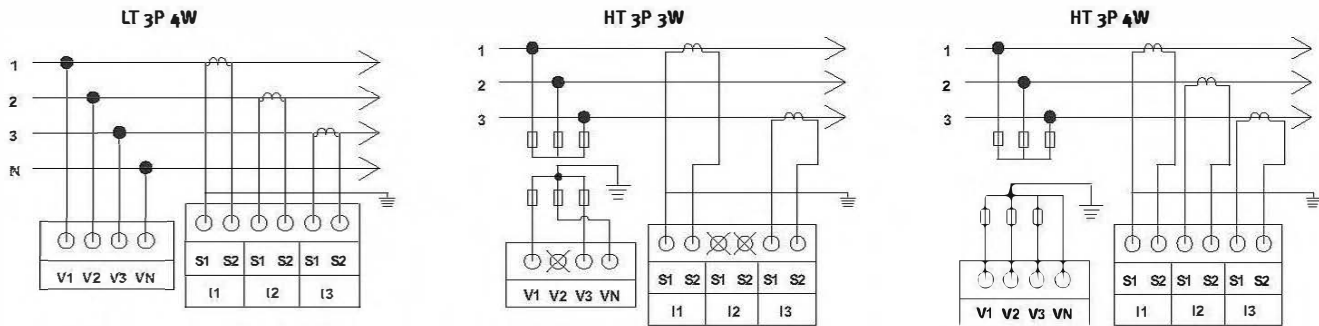
(* Additional modules (Two pulse input & output) can be available with Elite 447 and Elite 448

Metering Parameter Accuracy

Parameters	Accuracy Class 0.2*	Accuracy Class 0.5
Voltage	0.1	0.1
Current	0.1	0.1
KW	0.2	0.5
KVar	0.2	0.5
KVA	0.2	0.5
KWh	0.2	0.5
Kvarh	0.2	0.5
Power Factor	0.2	0.5
Frequency	0.1	0.1

*0.2s available for HT-3 (5A Ibasic)

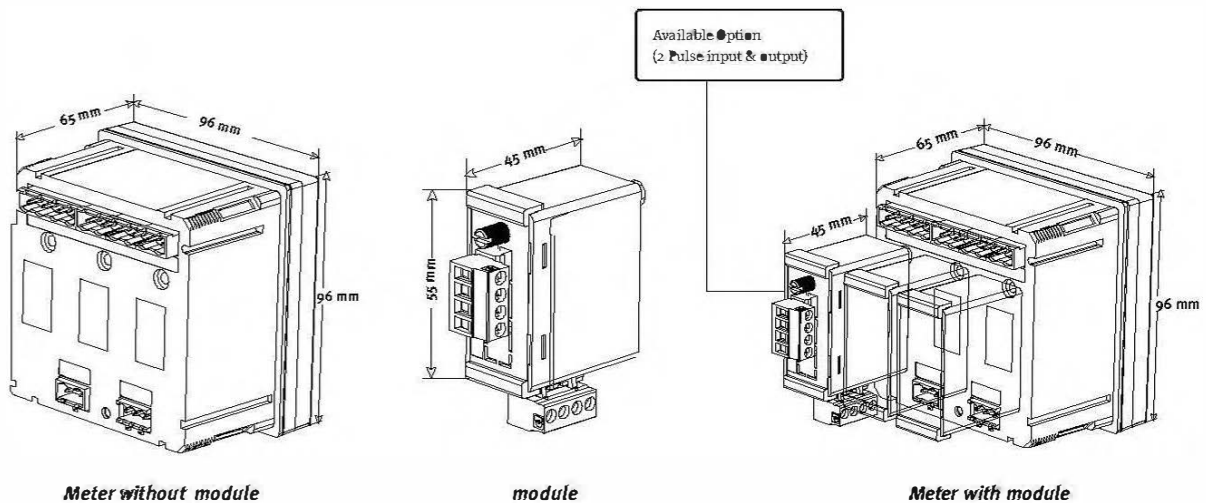
Connection Diagram



For CT/PT meter, ensure that it is connected on secondary side of instrument transformer.

In case of 3P 3W, VN is replaced by V2

Mechanical Dimensions



Elite 440

Technical specifications

Electrical

Connection type (Aux. supply)

Common product for HT3/ HT4/ LT application

Wiring configuration

Common product for 3 P-3 W and 3 P-4 W application

Voltage range :

Measurement voltage range

57.7 V (100V) - 240V (415V) AC 3 phase 4 wire (3 phase 3 wire)

Aux power supply range

80 VAC/DC - 300 VAC/DC or 24 VDC to 60 VDC (Variant)

Current range

Available 1-2A and 5-10 A in single variant (field configurable)

Main frequency

50/60 Hz with +5%

Accuracy Class

0.2S available for HT-4 (for 1A/5A Ibasic)

0.2S available for HT-3 (5A Ibasic)

0.5S & 1.0 available for LT-4 (for 1A/5A Ibasic)

Burden

Aux- 8VA, Current Circuit-1VA, Voltage Circuit- 0.5VA

Approvals

Standards

IS13779, IS14697, IEC62052-11, IEC62053-23 and IEC62053-22, IEC61010

Mechanical

Dimensions (WXHxD)

96 x 96 x 65 mm (w/o module);

96 x 96 x 110 mm (with module)

Cut out size 92 x 92 mm

Weight

0.5 kg (approx)

Enclosure

Poly Carbonate

Terminals

Combicon connector

Max conductor size

2.5 mm²

Environmental

Ingress protection

IP 52 (front fascia); IP20 (at terminals)

Insulation

4 kV RMS 50 Hz

Impulse withstand

6 kV

Temperature

-20 °C to +60 °C (operating)

-25 °C to +80 °C (storage)

Humidity

95% non-condensing

Feature

Favourite page

On / Off

CT/VT primary

Configurable in field through keypad

Communication

RS485 Modbus half duplex (Default) and data will be available in floating point format

Baud rate

from 1200-38400 bps (Default 9600 bps)

Load survey

40 days for 6 parameters @ 30 min IP

Options for 15 or 60-minute integration period.

Modules

2 Digital pulse input and output (single module)

Input supports voltage range of 8-40VDC with pre-define duration,
Output are normally open type, voltage rating of 230 VAC @ 100mA with
pre-defined pulse width.

Specifications are subject to change without prior notice