



### Product Features

Elymer SM-301 series three phase electronic energy meters are designed to measure accurately in varying environmental field and supply conditions.

The robustness of design is verified by the fact the meters operate satisfactorily in large varying ambient temperature conditions (-20°C to +65°C), varying humidity conditions (25% to 100%), voltage variation from  $U_n$  (-40% to +20%), frequency variation from 50-60Hz ( $\pm 10\%$ ) and power factor variation (0.3 lagging to 0.5 leading).

The circuit is developed using reliable and proven ASICs for transducing and digital conversion and calculations and displays are carried out on power microcontrollers with parallel processing and integrated display facility.

Most components are SMT mounted on the PCB to suit the rough tropical environmental conditions.

The meter is guaranteed to perform

in Class 1 accuracy as per IS:13779:1999 and IEC 61036 and remain unaffected in characteristics with temperature and other influencing factors over long periods in field installation.

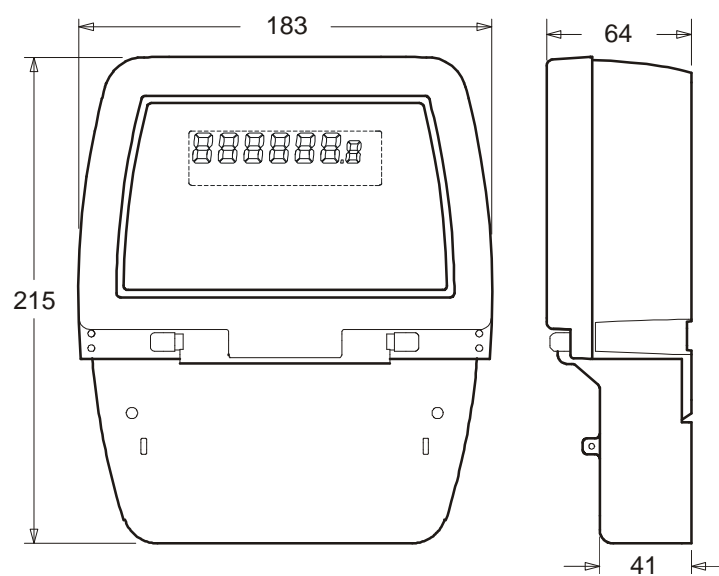
The meters have been designed on the most advanced CAD/CAE systems for ease of installation and maintenance. The manufacturing is carried out in controlled, air-conditioned and dust-proof atmosphere on full capacity in-house modern SMT machines.

All calibration is carried out on Class 0.1 standards.

The meters are surface mounting bottom connected type, with extended type hinged terminal cover.

A collapsible carrying handle is fitted to the base.

### Physical and mounting dimensions (in mm)





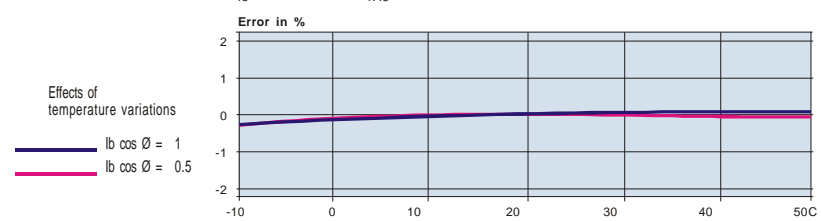
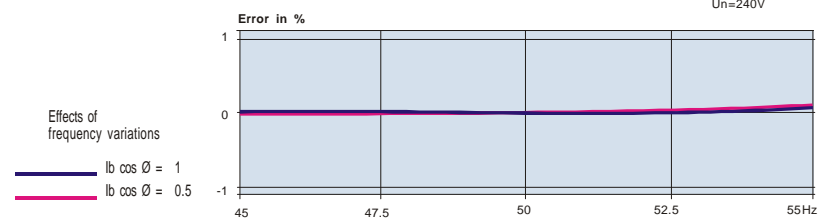
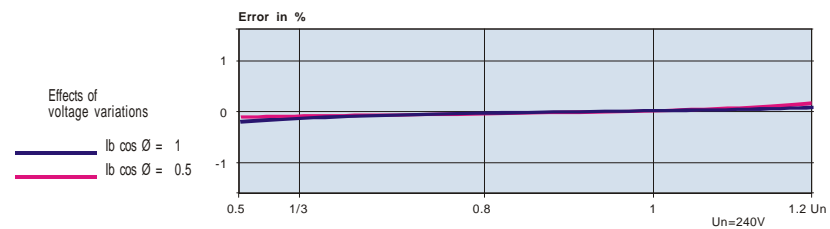
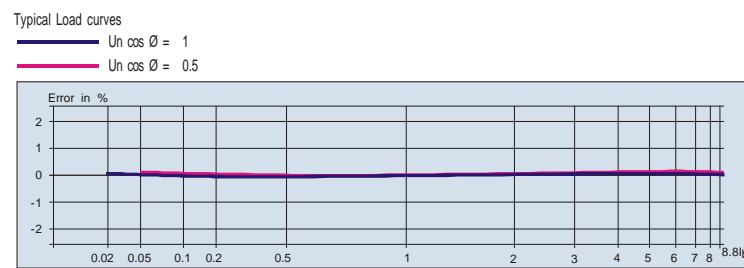
The salient features are as described below:

- Conform to IEC 61036 and IS:13779:1999
- Multifunction LCD display - can be programmed as per requirement
- kWh counter display available as option
- Compact dimensions, light weight
- Encased in unbreakable undeformable casing moulded from engineering plastic with transparent UV stabilized polycarbonate window and terminal cover
- Accuracy Class 1 - guaranteed over the entire product life of over 20 years
- Safety Protection to 450V ac
- Wide availability of current range - maintains high accuracy in a voltage range of 120V to 288V ac.
- Registers complete energy consumption on phase reversal
- Pulse LED for external calibration and testing
- Can be mounted in any position without affecting accuracy
- Practically free from external influencing effects like waveform distorting harmonics, external electromagnetic interference, RF Interference, temperature variation, frequency variation etc.

Various display functions are available in three phase LCD display as under:

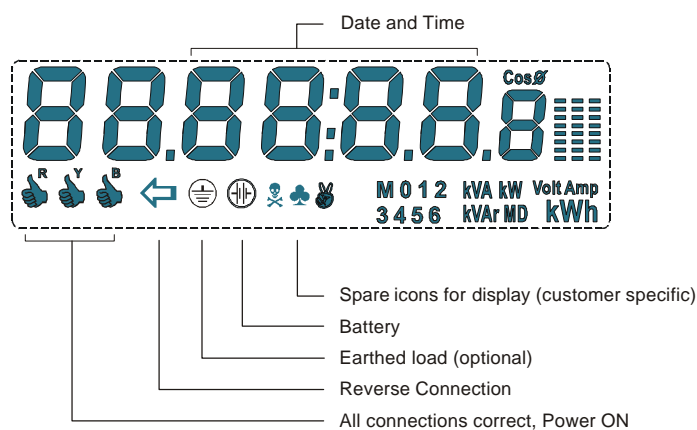
- Cumulative kWh (6+1 decimal)
- kWh last month reset on 00:00 hrs every month
- Cumulative kVarh (6+1 decimal)
- Max. Demand kW / Max. Demand kVA / Max. Demand kVar based on 15/30 min. integration period for periods up to six months
- Tamper displays
- Optical Port serial output as per IEC 1107 (optional)

Digits are high contrast large seven segment numeric (12 mm height) for easy reading from a distance. Large LCD viewing area >78x21mm





**LCD Display parameters (actual size)**



**TECHNICAL INFORMATION**

<b>Rated Current <math>I_b(I_{max})</math></b>	10(40)A, 10(60)A, 10(80)A, 20(80)A, 15(90)A
<b>Reference Voltage <math>U_n</math></b>	3x220V-240V (-40%,+15%)
<b>Frequency</b>	50/60 Hz ( $\pm 10\%$ )
<b>Rated Thermal Current</b>	>150% of $I_{max}$ up to 60A >120% of $I_{max}$ over 60A
<b>Accuracy Class</b>	Class 1 (as per IEC 61036)
<b>Starting Current</b>	0.3% of $I_b$ , at $U_n$ and upf
<b>Voltage Creep</b>	No creep
<b>Voltage circuit loss</b>	<0.7W per phase at rated voltage
<b>Current circuit loss</b>	Less than 0.3VA at rated current per phase
<b>Display</b>	Large LCD display - Character height > 12mm kWh Counter display available as optional
<b>Battery Life</b>	>10 years (if applicable)
<b>Meter Constant</b>	1600 pulses/kWh or customer specific
<b>Dielectric Test</b>	50 Hz, 3000 V Pc
<b>Insulation Resistance</b>	More than 20 Mohm at 500Vdc
<b>Voltage Shock</b>	10 KV Impulse Voltage, 1.2/50
<b>Meter Weight</b>	0.64 kg (0.73 kg with mechanical counter)
<b>Relevant Standard</b>	IEC 61036, IS:13779:1999
<b>Serial port (optional)</b>	Non-contact optical port as per IEC 1107
<b>Anti-tamper features</b>	Reverse current - Auto correction, energy registration and LCD/LED indication Phase Neutral Reversal - Auto correction energy registration and LCD/LED indication Phase Missing - LCD/LED indication

Specifications subject to change without notice, and can be improved to suit customer requirement.

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