Technical Specificaions

of

Maximum Demand Controller

(SPMD301)

Class 0.5S

Sai PowerrZerve
29/3B , Rajalakshmi Nagar, 1st Main Road,
Velachery Bye Pass, Chennai – 600 042.
Website :www.spowerz.com
Email : info@spowerz.com
Phone : 044- 4319266

General Specifications

1) GENERAL:

- Meter measures Active, Reactive, Apparent energy on 3 phase 4 wire system,
- All four quadrant measurement for MD, KWh, KVAh, KVArh (import lag, import lead, export lag and export lead) are measured and stored in four energy accumulators,
- Parameters can be viewed through LCD (3 row)
- Soft Keys are provided to stop, scroll, edit and to view the parameters,
- RTC with battery backup is used for time keeping and has a calendar of 100 years,
- Power Line Communication can be done using RS485 communication with MODBUS RTU,

2) METER FEATURES:

2.1) Display Details:

- LCD type – The parameters are calculated by the meter are displayed,
- Selectable Parameters – Can select any out of 33 parameters.
- Scroll rate – The scroll rate of the display parameter scroll in steps of 4secs.
- Keys are provided to stop, scroll, edit and to view the particular parameter.

2.1.1) Display Parameters:

- Time,
- Date,
- Meter ID with Phase Sequence,
- PT Primary,
- PT Secondary,
- CT Primary,
- CT Secondary,
- Frequency (Hz.),
- Cummulative – RYB – Active Energy (KWh),
- Cummulative – RYB – Apparant Energy (KVAh),
- Cummulative – RYB – Reactive Energy (KVArh Lag),
- Cummulative – RYB – Reactive Energy (KVArh Lead),
- Average Power Factor – RYB phase,
- Power ON hour,
- Load ON hour,
- Voltage L-N (R,Y,B) (V),

- Average Voltage (V),
- Phase to Phase Voltages L-L (RY,YB,RB)
- Current (R, Y, B),
- Average Current,
- Power Factor (R, Y, B),
- Combined Power Factor (RYB),
- Instant Active Power – KW – R,Y,B,
- Instant Reactive Power – KVAr – R,Y,B,
- Instant Apparent Power – KVA – R,Y,B,
- Instant – KW – RYB,
- Instant – KVAr – RYB,
- Instant – KVA – RYB,
- Rising Demand – KW / KVA,
- Maximum Demand – KW / KVA,
- Control RD – KW / KVA,
- Relay ON / OFF,
- Current Zone,
- TOD – T1 MD value, Reach time and date,
  T2 MD value, Reach time and date,
  T3 MD value, Reach time and date,
  T4 MD value, Reach time and date,

2.2) Key Features:

- The Parameter setup can be done through 4 nos. of soft keys on front fascia,
- Keys on the front panel is used to
  - ✓ scroll, increment, decrement through display parameter and
  - ✓ to set the Meter ID,
  - ✓ PT Primary, PT Secondary, CT Primary, CT Secondary values,
  - ✓ Time, Date,
  - ✓ MD Reset, Energy Reset,
  - ✓ MD in KW or KVA, Integration Period, Alarm and Trip set point for all four zones and to change the password.
- Press scroll key once the parameter set is completed, this allows to view the parameters one after the other automatically (change over time period is 4 secs). If this is not done auto scroll will not happen.

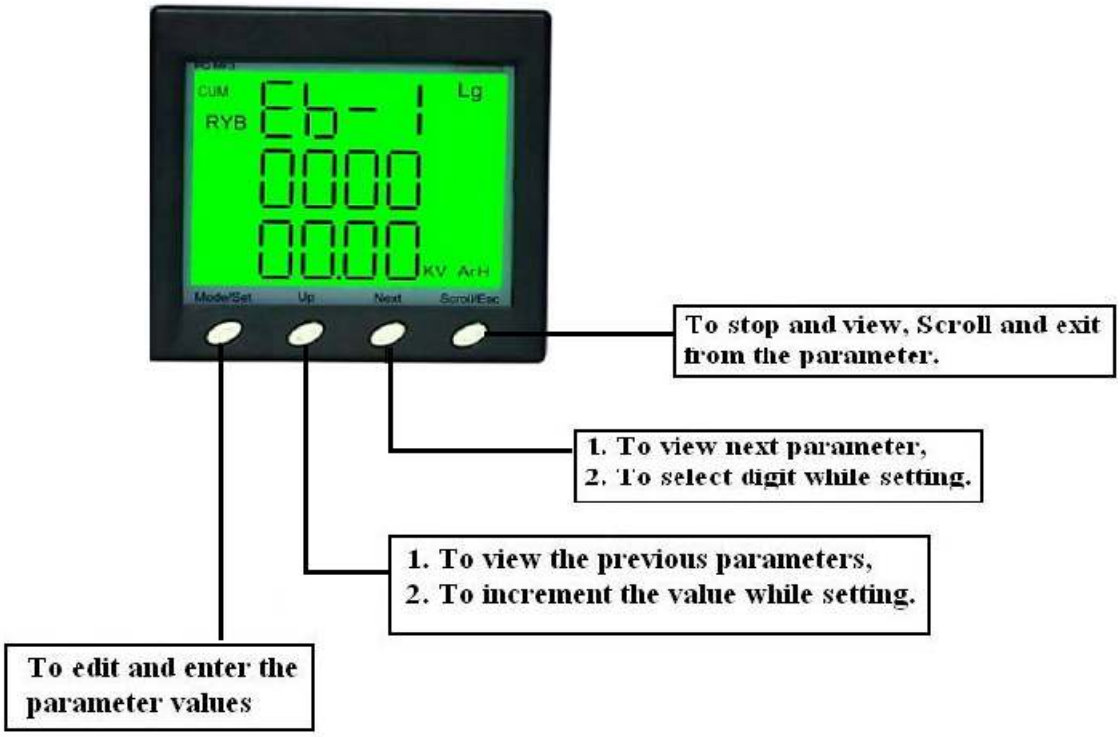
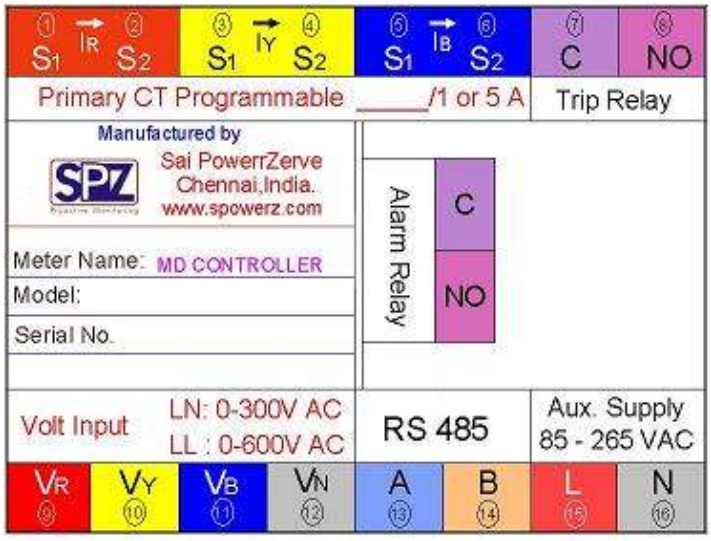


Fig.: Key Feature Description

2.3) Rear Terminal Details:



w2.4) Communication:

2.4.1) Communication Interface:

- Through RS485 Communication with MODBUS RTU,
- Power Line Communication using Power Line Node and Concentrator.

Note:

(i) Field Programmability of the meter is optional based on the customer requirement,
(ii) Each meter is given a unique number at the factory.

2.5) Safety Precautions:

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- Only qualified electrical workers should install this equipment. Such work should be performed only after reading this entire set of instructions.
- If the equipment is not used in a manner specified by the manufacturer, the protection provided by the equipment may be impaired.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power.
- Assume that all circuits are live until they have been completely de-energized, tested, and tagged.
- Consider all sources of power, including the possibility of back feeding.
- Turn off all power supplying the dual energy meter and the equipment in which it is installed before working on it.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Before closing all covers and doors, inspect the work area for tools and objects that may have been left inside the equipment.
- When removing or installing panels do not allow them to extend into the energized bus.
- The successful operation of this equipment depends upon proper handling, installation, and operation.
- Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- NEVER bypass external fusing.
- NEVER short the secondary of a PT.
- NEVER open circuit a CT
- High voltage testing may damage electronic components contained in the dual energy meter.
- Ensure that no wiring strands are straying outside by connecting the wires.
- Maximum Demand Controller should be installed in a suitable electrical enclosure.

Failure to follow these instructions will result in death or serious injury

Technical Specifications

Accuracy	:	Class 0.5S
System type	:	3 Phase 4 Wire
Resolution	:	0.01 (for Combined Kwh, KVAh)
Display	:	LCD (3 ROW)
Auxiliary Supply	:	85 – 265 VAC
Voltage PT	:	Primary side – Programmable (100V – 33KV)
	:	Secondary side – 100 to 440 V
Current CT	:	Primary side – Programmable (5A – 9999A)
	:	Secondary side – 1 or 5A
Starting Current	:	10mA
Power Factor	:	4 quadrant operation
Frequency	:	50Hz, ±5%
Communication	:	RS485 Communication with MODBUS RTU in external integration with Power Line Communication
Temperature	:	Operating Temp. – (-10 to 55)°C Storage Temp. – (-20 to 70)°C Humidity 5 to 95% RH at 50°C (Non-Condensing)
Dimension	:	(96 x 96 x 48) mm (Inclusive of connector)
Panel Cutout	:	92 x 92 mm (-0.5mm)
Mounting	:	Panel Mountable
Connector Type	:	Screw type terminals (U Lug 2.5mm)
Weight	:	375gms. (app.)