

*Technical Specifications*  
*of*  
*DC Energy Meter*  
*(SPDC101)*



*Class 1.0S*

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## General Specifications

### 1) **GENERAL:**

- Universal Auxiliary Supply (85 – 265 VAC)
- Data can be stored using application software via RS485 or **Memory Card (Optional)**
- Voltage full scale programmable using RS485 (MODSCAN)
- Current full scale programmable independently
- Password Protected and it is editable,
- Displays instantaneous Volts & Amps
- Voltage Input (150VDC (default) & Factory adjustable) and Shunt Current Input (75mV)

### 2) **METER FEATURES:**

#### 2.1) **Display Details:**

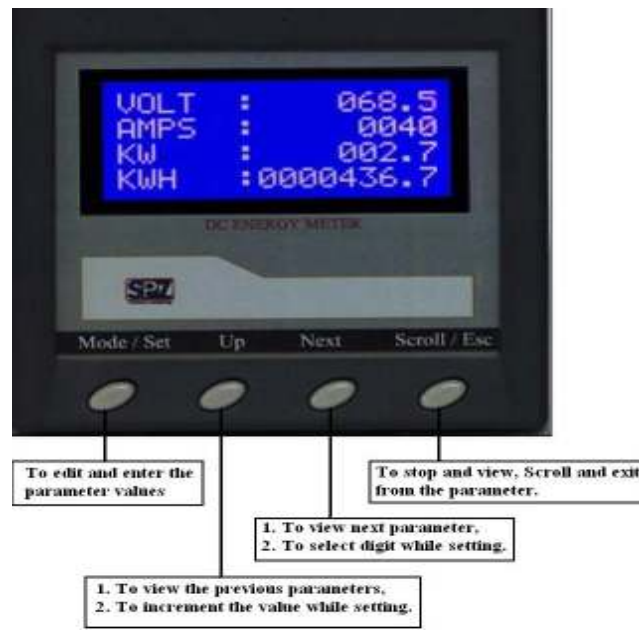
- Liquid Crystal Display (4\*16, Blue with White Character) – The parameters are calculated by the meter are displayed,
- Selectable Parameters – Can select any parameters.
- Scroll rate – The scroll rate of the display parameter scroll in steps of 4secs.
- Keys are provided to stop, scroll, edit and to view the particular parameter.

#### 2.1.1) **Display Parameters:**

- RTC
- Meter ID
- Voltage
- Current
- Power, kW
- Energy, kWh

#### 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
  - ✓ set the Meter ID,
  - ✓ CT Primary values,
  - ✓ Time & Date,
  - ✓ Energy Reset ,Change 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.



*Figure:-key features description*

### **2.3) Set Parameters:**

- Meter ID,
- Time and Date,
- Input Amps
- User Password.
- Energy Reset

### **2.4) Communication:**

#### **2.4.1) Communication Interface:**

- Through RS485 Communication with MODBUS RTU,
- Baud Rate : 9600
- Power Line Communication using Power Line Node and Concentrator.
- Memory Card (Optional)

**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) Enabling Auto scroll / Manual Scroll :

2.5.1) *Enabling Manual scroll*: Press **Stop/Scroll** key to enable manual scroll mode. Now parameters can be viewed one by one using **Up** and **Next** Keys

2.5.2) *Enabling Auto scroll* : When display in manual mode, press **Stop/Scroll** to enter into auto scroll mode. Parameters will scroll 4 secs. one after the other. By default, when meter is switched it will be in auto scroll mode.

### Rear Terminal:

+	-						
<b>CH1</b>							
Current Input (0-75 mV from DC Shunt )							
Manufactured by							
							
Meter Name: DC Energy Meter (1 Channel)							
Model : SPDC101							
Serial No. :							
(0 - 150) VDC							
<b>CH1</b>	<b>Com.</b>			<b>RS485</b>		<b>AUX</b> 85-265VAC	
+	-			D+	D-	L	N

## **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.
- Pay particular attention to the design of the DC power system.
- Consider all sources of power, including the possibility of back feeding.
- Turn off all power supplying the dc energy meter and the equipment in which it is installed before working on it.
- Always use a properly rated voltage sensing device to that all power is off.
- Before closing all covers and doors, inspect the work confirm area for tools and objects that may have been left inside the equipment.
- 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.
- High voltage testing may damage electronic components contained in the dc energy meter.
- Ensure that no wiring strands are straying outside after connecting the wires.
- DC Energy Meter should be installed in a suitable electrical enclosure.

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

**Technical Specifications:**

Accuracy	: Class 1.0S
System type	: DC Input Voltage (Default 150VDC)
Resolution	: 0.1 (for Kwh, Voltage)
Display	: 4x16 LCD (Blue with White Character)
Auxiliary Supply	: 85 – 265 V <sub>AC</sub>
DC Current	: Primary side – Programmable (1A – 5000A)
Starting Current	: 10mA
Frequency	: 50Hz, ±5%
Communication	: RS485 Communication with MODBUS RTU / Memory Card (Optional)
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	: 350gms. (app.)