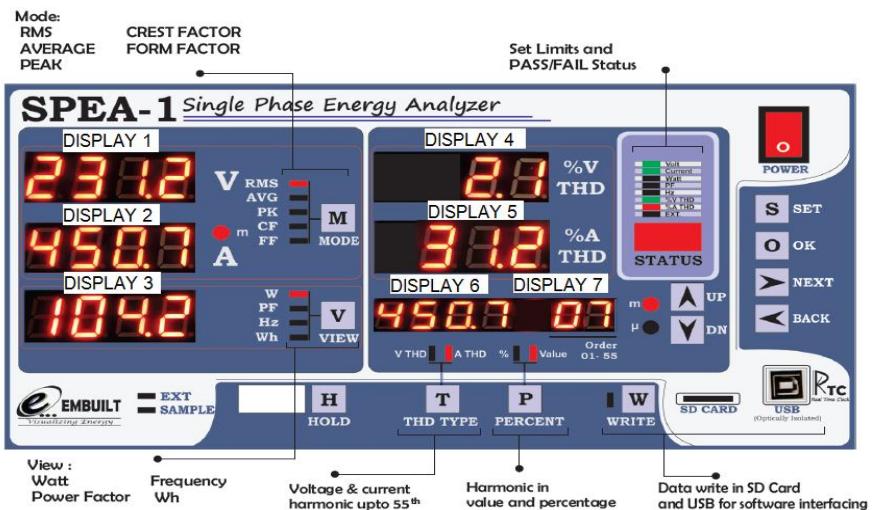


## Quick reference guide to use SPEA-1

### SPEA-1 (Single Phase Power Analyzer with Harmonics Measurement)



#### Buttons Function

<b>M</b>	Different parameters of Voltage and Current will show on Display1 and Display2.
<b>V</b>	W, PF, Hz, Wh will show on Display3.
<b>H</b>	HOLD Button all display will on hold.
<b>T</b>	Display 6 shows Harmonics of Voltage or Current.
<b>P</b>	Display6 shows Harmonics Value in decimal or in % of First Harmonic.( R&D Mode)
<b>▲</b> <b>▼</b>	In R&D mode pressing UP/DOWN Button will change the harmonics order. In setting mode It will used to scroll data or change digits. In production mode used to change model serial no.
<b>S</b>	Open Settings, Edit Settings
<b>&gt;</b>	In setting mode explore settings.
<b>O</b>	It is used to save settings.
<b>&lt;</b>	It is used to discard changes or go back to previous page.
<b>W</b>	Production report, Data logging

#### Short Cut Button Function (On 5 Seconds Press)

<b>W</b>	Data Logging in SD Card will start.
<b>P</b>	Switch between Production and R&D Mode.
<b>V</b>	Watt hour (Wh) will be reset.
<b>H</b>	Buzzer sound will be On/Off.
<b>&gt;</b>	It will send spectrum data to the software.
<b>O</b>	It will show the data of external analyzer/Smart QC.
<b>T</b>	It will enable Log on Connection.

#### Contact Information-

##### Embult Technologies

C-15 Sarvodaya Nagar  
Kanpur -208005

Mobile - +91-7524853539

Tele. - +91-512-2220895

Email - [support@embuilt.com](mailto:support@embuilt.com)

Website - <http://www.embuilt.com>

#### LEDs Indication

##### MODE LEDs(Display 1,2)

RMS	True RMS of Voltage and Current
AVG	Average value of Voltage and Current
PK	Peak value of Voltage and Current.
CF	Calculated Crest factor will be show.
FF	Calculated Form factor will show.

##### VIEW LEDs(Display 3)

W	Show Watt.
PF	Show Power Factor.
Hz	Show Frequency.
Wh	Show Watt-hour.

##### HOLD LED

HOLD	All display values will hold.
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##### THD TYPE LEDs (Display 6)

VTHD	Show Harmonics of V.
ATHD	Show Harmonics of A

##### PERCENT LEDs (Display6)

%	Harmonics values.
Value	Harmonics in % of first harmonic.

##### WRITE LED

Write	writing to Micro SD Card.
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##### STATUS LED

Status	Test result is fail.
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##### The below LEDs are of Dual Color.

GREEN –the Limit for the related parameter is set value of the parameter is under limit.  
RED –value is out of limit.  
NONE –no limit is set for the parameter.

Volt	Status of AC Voltage parameter.
Current	Status of AC Current Parameter.
Watt	Status of AC Wattage Parameter.

PF	Status of AC Power Factor
%VTHD	Status of Voltage THD Parameter.
%ATHD	Status of Current THD Parameter.

EXTRA	Status of any other parameter.
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##### OTHER LEDs

EXT	Smart-QC mode enabled.
Sample	Display Update time.

m	Value is in mili (10 <sup>-3</sup> )
μ	Value is in micro (10 <sup>-6</sup> )

#### How to do settings?

Press **S** to open setting and edit settings.

Press **>** to scroll settings.

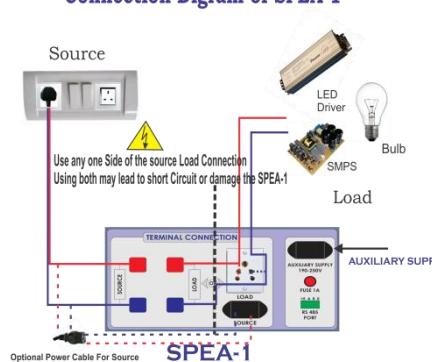
Press **▲** and **▼** to change status/value.

Press **O** to save setting.

Press **<** to exit settings,

#### Connection Diagram

##### Connection Diagram of SPEA-1



##### Connection Diagram of SPEA-1 With SMART-QC

###### For AC-DC Convertor Testing

