

WIFY -Switch Single Phase Meter- SF104

SF104 is networked a single-phase power meter with one 16A relay (SPST). This can serve as a remote-controlled relay with power measurement. Facility for calibration of voltage and current is also provided. The device supports periodical data push using http and/or MQTT. It also provides MQTT commands for Relay switching, setting up WIFI, HTTP, MQTT credentials and calibration. The integrated webserver in device allows access of the measurement and settings on any cell phone or PC connected to the same router.



OLED Display:

Volts, Ampere, KW & KWH

Icons display Status of:

- WIFI Signal Strength
- Internet Connectivity
- MQTT Connectivity
- Relay Status

Specification:

Voltage Range: 60-250V AC

Current Range: 0-16A

Linearity of Meter: 0.1%

Storage of KWH: Yes

Calibration Possible: Yes

Relay: 16A -240 AC SPST

Size: 96x69x30 mm



Independent Power source for device and measurement.

Power: Power to Device 110V–240V AC (N&P)

Measure: The Voltage is measured here 110V–240V AC (N&P)

Relay: Current is measured between Relay 'In' and 'Out'

(N is required for snubber for Inductive loads)

Icon Description:



- =>Signal Strength
- =>Internet Connected
- =>MQTT Connected
- =>Relay On/OFF



=>Settings Mode

Applications:

- ⇒ Remote ON/OFF of lights with Power measurement in Buildings
- ⇒ Energy management of Workstations in office
- ⇒ Energy measurement of Motors/ Pumps in Industries
- ⇒ Energy measurement and logging in Research.



SF104 Device Settings by device Web Server

Enter <http://ipaddress> of the device to see web pages. In case you are not connected to router, you can use the Settings switch (on the PCB of the device) and browse <http://192.168.4.1>

eSwitch Status - live

Volts V 228.09
 Current A 0.70
 Watts 159.71
 KWH 0.00
 Relay Status ON

Set Relay

ON OFF

Password

You can access this Website by IP <http://IPAddress>
 If router is not connected, default <http://192.168.4.1>
ON-OFF Relay switches relay.
 Press **Settings** for Configuration.
This screen is refreshed every 5 sec

eSwitch Status

Volts V 212.30
 Current A 0.16
 Watts 34.07
 KWH 0.00
 Relay Status ON

Set Relay

ON OFF

Password

Live disappears after you press **Settings** in the previous screen. Screen will not refresh any more.
 Enter Correct SSID **Password** and **Settings**.
 If Password is OK then will switch to settings screen else default to live.

eSwitch Settings

Network

SSID

Password

Select Network, Change SSID with **SetSSID**, Password. **SaveWifi** will save the settings. **Back** will go back to live screen. **Restart** will restart the device.

eSwitch Settings

URL1

URL2

MqttIP

MqttPort

MqttUser

MqttPass

MqttKey

Change URL1 and URL2 links and the MQTT credentials. **SaveServer** saves these parameters.

eSwitch Settings

DeviceID

DataInterval

WIFI

MQTT **Periodical MQTT**

URL1 **URL2**

FWUpdate **Relay on PoweOn**

Change Device ID (default is USET). Data interval in seconds (MQTT & HTTP). Enable WIFI for HTTP & MQTT.
Relay on PowerOn if selected, on reboot the relay will be always ON.
 Save Control saves these parameters.

eSwitch Settings

RawVoltage 3511207

RawCurrent 400075

Warning Please ensure No power connected to Measure and Relay Connections!!!

Confirm

VCalib 2663145

Volts 240.8

Warning Please ensure known Voltage Connected at Measure Connections!!!

Confirm

CCalib 200540

Ampere 0.72

Warning Please ensure known Current flows through Relay !!!

Confirm

Warning: First you have to do Zero calibration with no power attached at Measure & Relay terminals. **Refresh** will refresh screen (no auto refresh here). Enter the actual measured value in the edit box of relevant parameter and select Set.
 You have to select all three confirm for **SetZero** or **SetVolts** or **SetCurrent**. - a safety feature.

SF104 Device Settings by MQTT

You can use any MQTT client to communicate with SF1014. For the first time when you use or if you have booted with default settings, the Device ID used is USET and you must change this. First configure the MQTT server credentials using "SF104 Device Settings by device Web Server".



The ChipID is displayed for few seconds after powering the device. In this case it is 6433940.

64330\$SDIDtamil,0060,11111111,

will set the device id to tamil. Interval to 60 seconds and all flags to true (WIFI, URL1, URL2, FUPDATE, WIFI, PeriodicMQTT)

After this you can check the device ID by tamil\$GDID

```

Jan 9, 2023 11:24:38 AM ASCII
[MRResponse]:
USET,369454624518,$GDID,USET,0120,0100011
[MRResponse]:
USET,369454624518,$GDID,USET,0120,0100011
[MRResponse]: USET,369454624518,$SSID,OK
[MRResponse]: tamil,369454624518,$GDID,tamil,0060,1111
11111000000
[MRResponse]: tamil,369454624518,$GURL,http://agriict.in
/Meter/getagri.php,http://agriict.in/Meter/getagri.php
[MRResponse]: tamil,369454624518,$GSD,1000000,49
[MRResponse]:
tamil,369454624518,$SREL,GREL-OK1000000,49
[MRResponse]:
tamil,369454624518,$SREL,GREL-OK1000000,48
[MRResponse]:
tamil,369454624518,$SREL,GREL-OK1000000,49
[MRResponse]:
tamil,369454624518,$SREL,GREL-OK1000000,48
[MRResponse]:
tamil,369454624518,$SREL,GREL-OK1000000,49
Auto Scroll
ASCII: tamil,$SREL10000000,
ASCII: tamil,$SREL11000000,
ASCII: tamil,$SREL10000000,
    
```

While using Set Commands \$SMQT, \$SDID,\$SSID,\$SURL, \$SCAL and \$SREL please note that the first parameter follows the command with out any commas, each other parameter is terminated with comma including the last.

Flags in SDID:12345678

Char	value	Set
1	1	MQTT
2	1	URL1
3	1	URL2
4	1	Auto Firmware Update
5	1	WIFI
6	1	Periodical MQTT
7	1	Free

SREL:12345678

Char	value	Set
1	1	Relay ON after Reboot
2	1	Relay ON
2	0	Relay OFF

All other bits are free. Set them as 1.

MQTT Communication Messages

\$RST	Reset all Parameters to default values
\$SRST	Reset Device
\$SFWU	Update Firmware Now
\$SMQTmqaddr, mqport,mqname, mqpass,	Set all MQTT parameters
\$GMQT	Get all MQTT parameters
\$SDIDdname,interval,flags,	Set device details
\$GDID	Get device details
\$SSIDssidname,ssidpass,	Set Router SSID
\$GSID	Get Router SSID
\$SURLurl1,url2,	Set URL
\$GURL	Get URL
\$SCALvoffset,coffset,vcalib,ccalib,vset,cset,	Set Calibration
\$GCAL	Get Calibration Values
\$SRELbbbbbbbb	Set Relay Status
\$GREL	Get Relay Status