EETARP
BENDER Group

ELECTRICAL SAFETY
POWER QUALITY
ENERGY MANAGEMENT

Eetarp GPQM96 Training Slide

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01 - PRODUCT INFORMATION

GPQM96

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GPQM96

- IEC 62053-22: 0.2 S power quality analyzer
- High resolution Failure Record with 4kHz
- 8 MB internal memory
- 2 digital input / 2 relay output (optional module for additional IO)
- 3 x Voltage Input – 3 phase 4 wires (690V L-L), support continuous overload of 2x for 10s
- 3 x CT secondary Input 1 / 5A selectable, support continuous overload of 10x for 5s
- Suitable for 2-,3- and 4 wire system
- 1 x RS485 Modbus RTU output (basic model)
- Optional addon com module Modbus TCP , BACnet , Profibus , Modbus RTU(2^{nd})

01 - PRODUCT INFORMATION

- During normal operation, voltages hazardous to life may be present at some of the terminals of this unit. Installation and servicing should be performed only by qualified, properly trained personnel abiding by local regulations. Ensure all supplies are de-energized before attempting connection or other procedures.
- Terminals should not be user accessible after installation and external installation provisions must be sufficient to prevent hazards under fault conditions.
- This unit is not intended to function as part of a system providing the sole means of fault protection - good engineering practice dictates that any critical function be protected by at least two independent and diverse means.
- The unit does not have internal fuses therefore external fuses must be used for protection and safety under fault conditions.
- **Never open-circuit the secondary winding** of an energized current transformer.
- This product should only be operated with CT secondary connections Earthed.
- If this equipment is used in a manner not specified by the manufacturer, protection provided by the equipment may be impaired.

02 – DEVICE CONNECTION

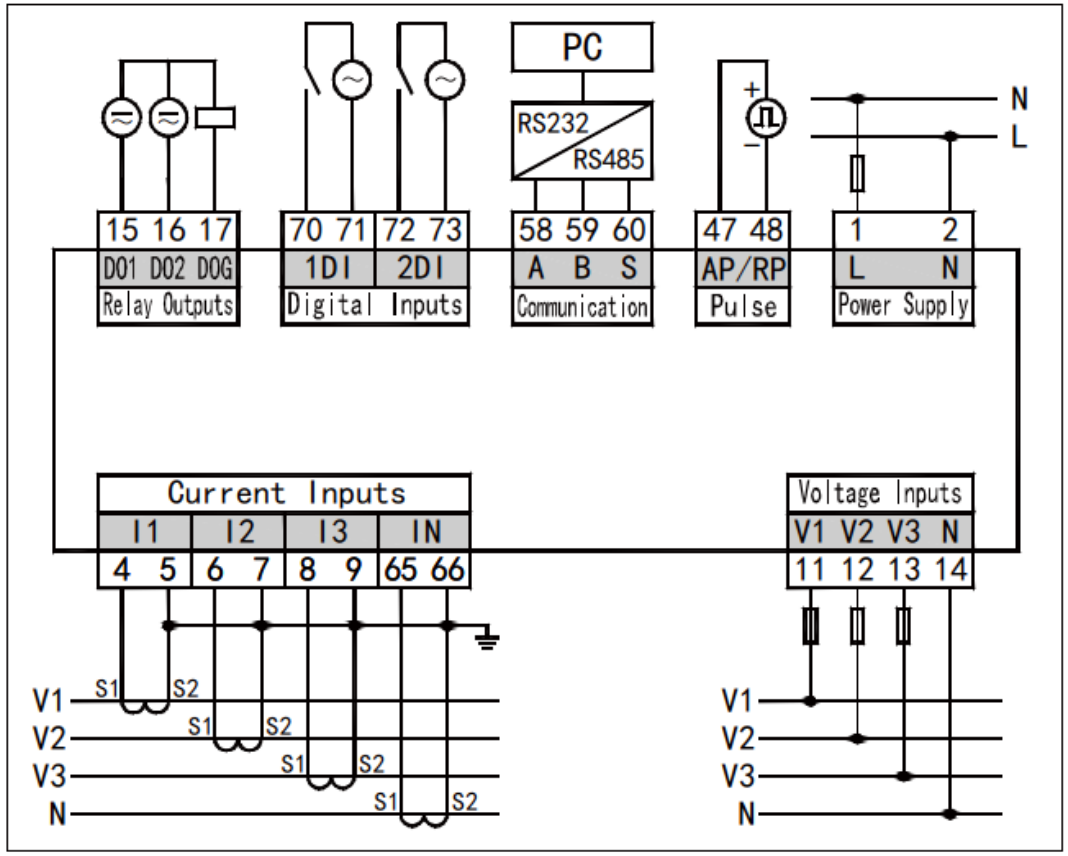
GPQM96

02 – DEVICE CONNECTION

Rear view

02 – DEVICE CONNECTION (3P4W)

Typical wiring for 3P4W, 4 CT, no PT



Note:

Auxiliary power supply：AC/DC (80～270)V

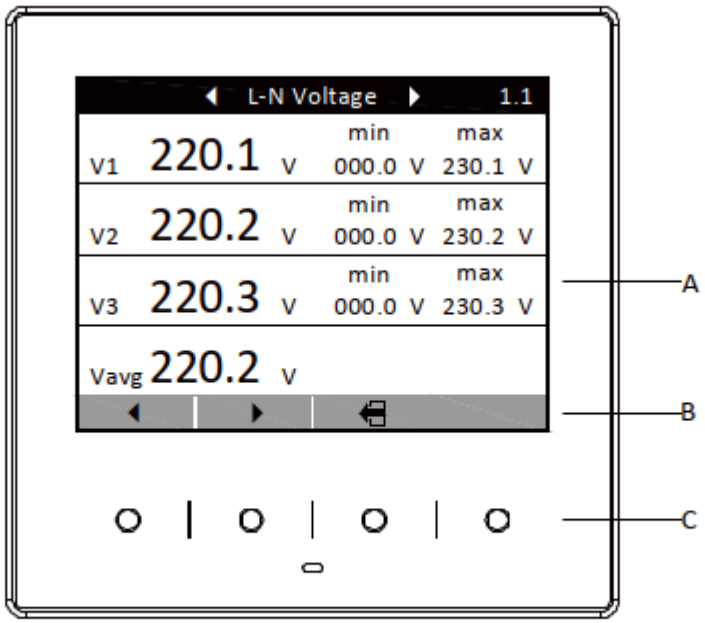
Rated current of fuse：0.5A

03 – DEVICE SETUP

03 - BASIC DEVICES SETUP

GPQM96

03 – DEVICE SETUP (Buttons & Indications)

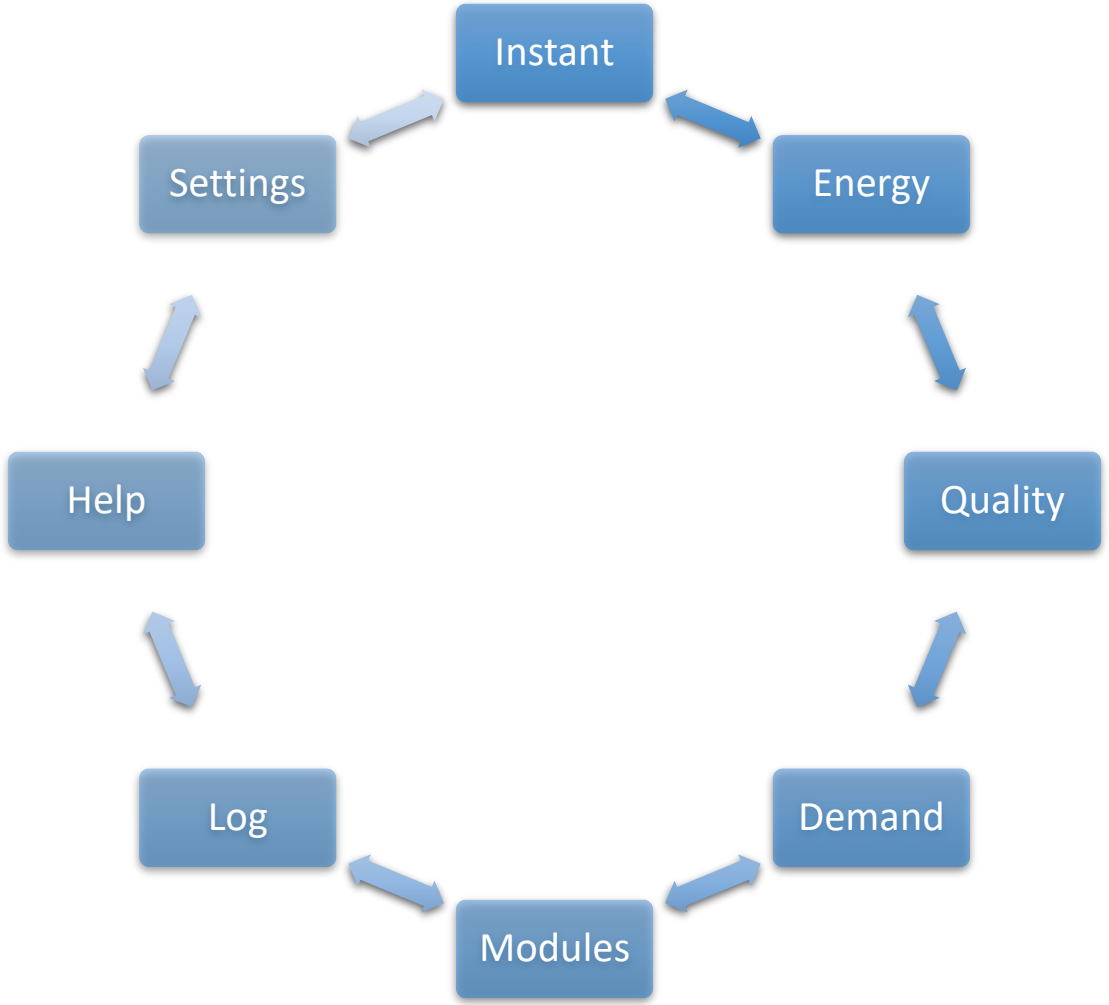


A: Display window B. Function indication for keys C: Touch type keys

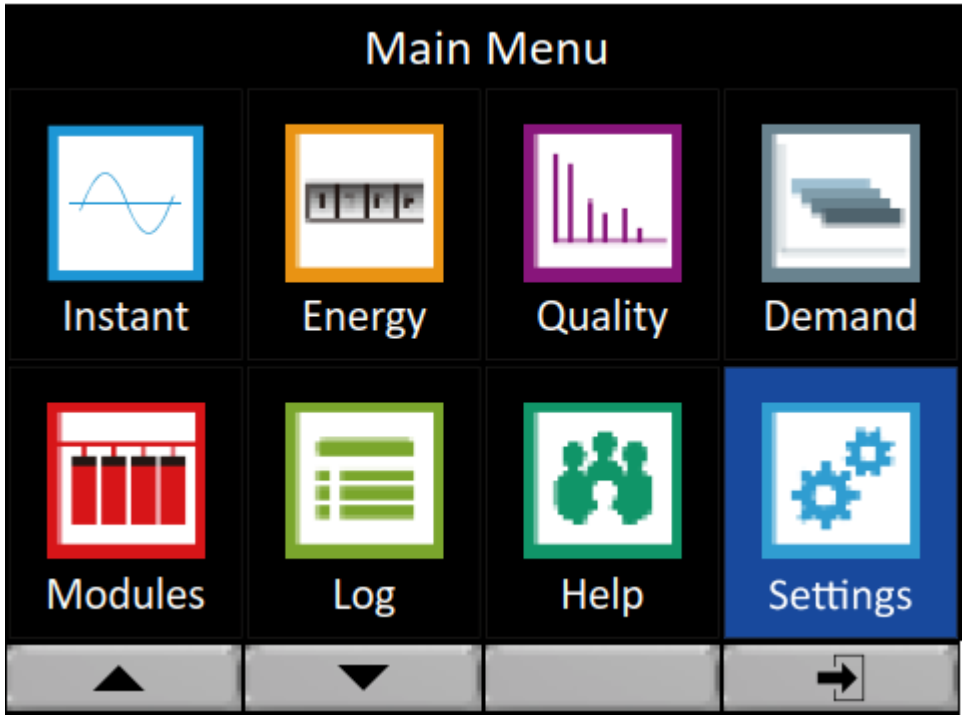
Sign	Function
▲	Add number at selected bit
▼	Move downward, switch to next page, change parameter
◀	Move left to change or show data/ switch data bit
▶	Move right to change or show data
↩	Return to Main interface directly, return to upper level menu/cancel modification
→	Enter selected item
↵	Confirm
🔍	Zoom display image
✎	Edit
📄	Next page
	Ineffective key

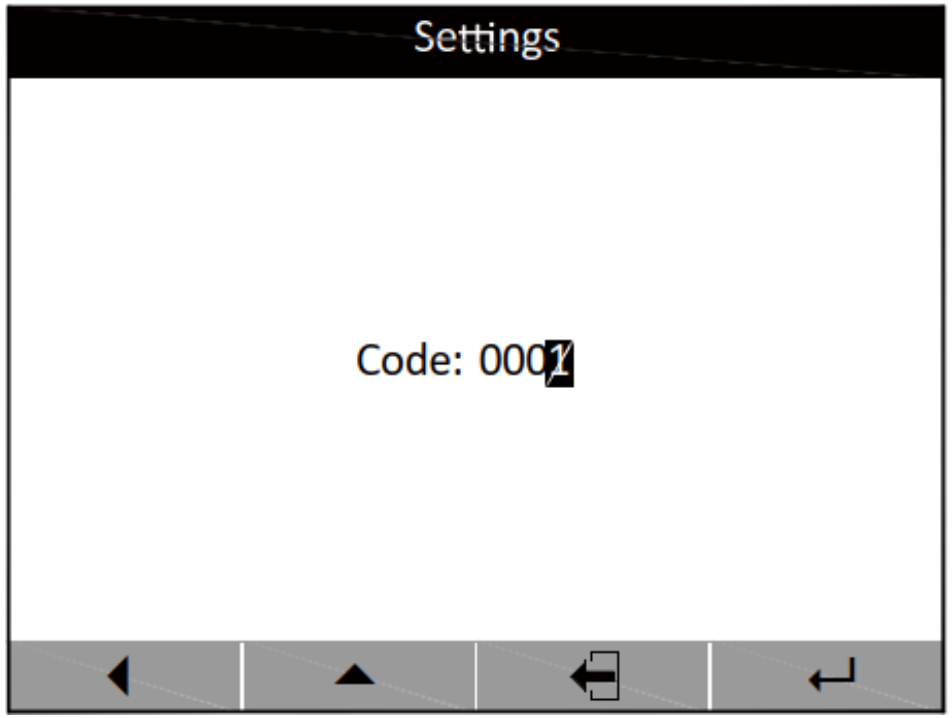
03 – DEVICE SETUP (Screen Rotation)

- Graphics are in a multi-directional cycle
- Use button “ ^ “ or “ v ” to cycle through



03 – DEVICE SETUP (Access to setup page)





- Default Password “1”

03 – DEVICE SETUP (CT ratio setup)

Current Transformer (CT)

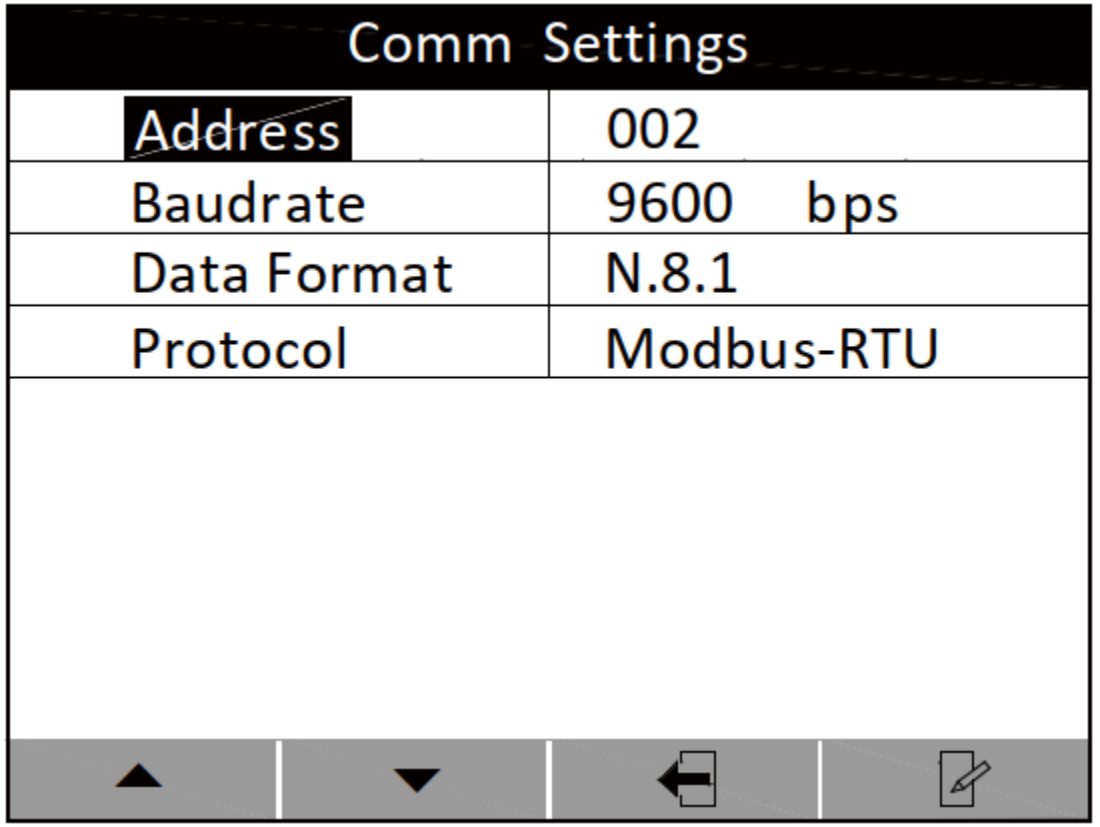
- Wiring Method : 1P2W , 3P3W , 3P4W
- PT secondary and primary have same settings if no PT connected
- CT secondary : 1 / 5A
- CT primary : 0-999999A

Signal Inputs		
Wiring	3P4W	
PT Secondary	0100	V
PT Primary	010000	V
CT Secondary	0001	A
CT Primary	000600	A
In Secondary	0001	A
In Primary	000600	A

03 – DEVICE SETUP (Com setup)

Communication Setup

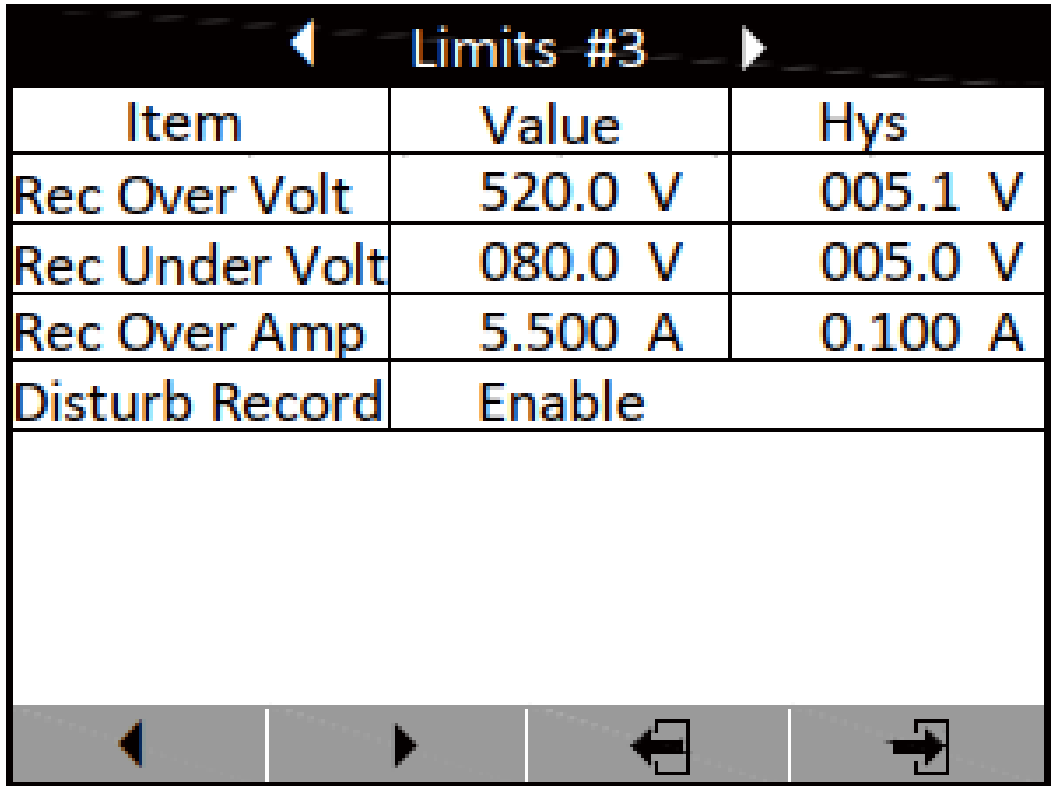
- Once Password is entered, goto **Comm Settings** for basic modbus RTU settings
- Add : 1 ~247
- Baudrate : 1200~38400bps
- Data Format : E81 , O81 , N81 , N82



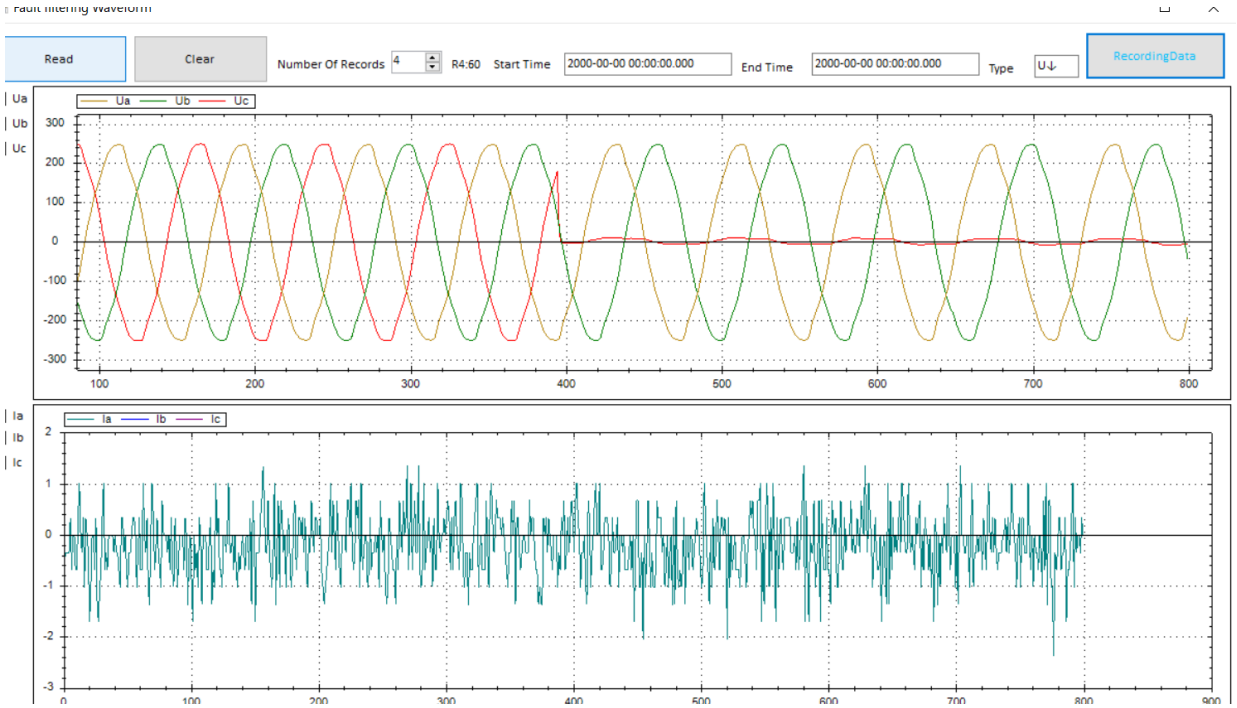
03 – DEVICE SETUP (Fault Recorder)

Limits Settings

- Enter Limits Settings to Enable disturbance recorder
- No waveform will be captured if Recorder is not enable (default disable)



04 – Power Quality Features

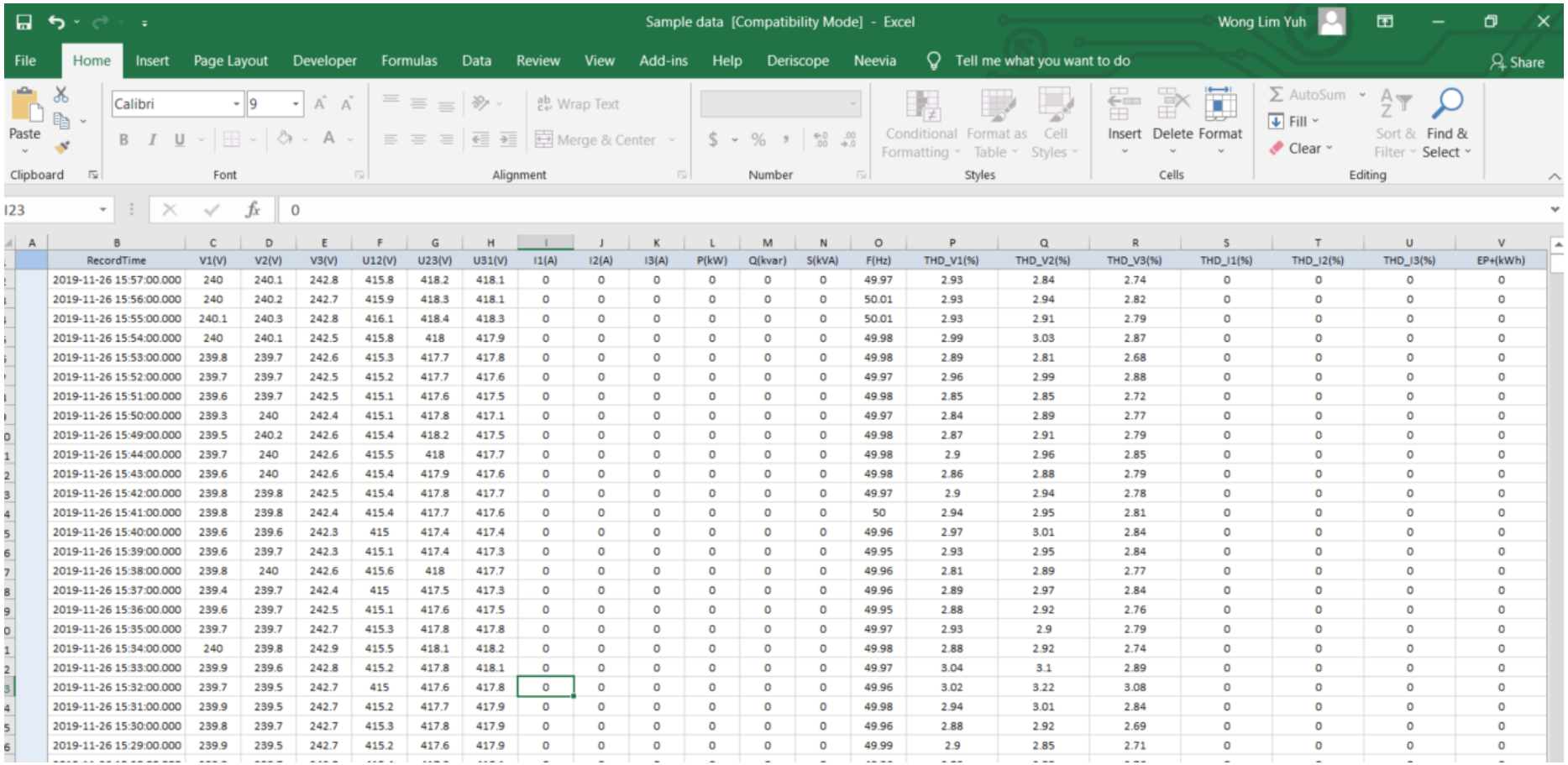


FrmData 5

		U			I		
		Ua	Ub	Uc	Ia	Ib	Ic
Cycle 10	740	5188	108	-6653	0	0	1
	741	4865	108	-6810	-3	-3	-3
	742	4567	96	-6905	1	-1	0
	743	4231	84	-6969	-2	-3	0
	744	3848	67	-7006	3	2	-3
	745	3414	49	-7023	-1	0	-1
	746	2913	26	-7035	1	-1	-3
	747	2483	14	-7029	-2	-1	0
	748	1979	-1	-7011	-3	-2	2
	749	1299	-24	-6919	-2	1	0
	750	594	-9	-6551	-2	-1	0
	751	-24	-5	-6113	-2	-1	-3
	752	-690	-33	-5747	-3	0	-1
	753	-1275	-32	-5409	2	-1	0
	754	-1692	-26	-5043	-4	0	0
	755	-2186	-47	-4693	0	0	-1
	756	-2716	-65	-4369	-1	-1	0
	757	-3225	-67	-3998	3	-1	-1
	758	-3659	-59	-3517	0	-1	-3
	759	-3962	-75	-3061	-1	0	-5
	760	-4347	-100	-2601	2	-1	1
	761	-4691	-118	-2125	-1	-1	0

Export

04 – Data Recording Features



RecordTime	V1(V)	V2(V)	V3(V)	U12(V)	U23(V)	U31(V)	I1(A)	I2(A)	I3(A)	P(kW)	Q(kvar)	S(kVA)	F(Hz)	THD_V1(%)	THD_V2(%)	THD_V3(%)	THD_I1(%)	THD_I2(%)	THD_I3(%)	EP+(kWh)
2019-11-26 15:57:00.000	240	240.1	242.8	415.8	418.2	418.1	0	0	0	0	0	0	49.97	2.93	2.84	2.74	0	0	0	0
2019-11-26 15:56:00.000	240	240.2	242.7	415.9	418.3	418.1	0	0	0	0	0	0	50.01	2.93	2.94	2.82	0	0	0	0
2019-11-26 15:55:00.000	240.1	240.3	242.8	416.1	418.4	418.3	0	0	0	0	0	0	50.01	2.93	2.91	2.79	0	0	0	0
2019-11-26 15:54:00.000	240	240.1	242.5	415.8	418	417.9	0	0	0	0	0	0	49.98	2.99	3.03	2.87	0	0	0	0
2019-11-26 15:53:00.000	239.8	239.7	242.6	415.3	417.7	417.8	0	0	0	0	0	0	49.98	2.89	2.81	2.68	0	0	0	0
2019-11-26 15:52:00.000	239.7	239.7	242.5	415.2	417.7	417.6	0	0	0	0	0	0	49.97	2.96	2.99	2.88	0	0	0	0
2019-11-26 15:51:00.000	239.6	239.7	242.5	415.1	417.6	417.5	0	0	0	0	0	0	49.98	2.85	2.85	2.72	0	0	0	0
2019-11-26 15:50:00.000	239.3	240	242.4	415.1	417.8	417.1	0	0	0	0	0	0	49.97	2.84	2.89	2.77	0	0	0	0
2019-11-26 15:49:00.000	239.5	240.2	242.6	415.4	418.2	417.5	0	0	0	0	0	0	49.98	2.87	2.91	2.79	0	0	0	0
2019-11-26 15:44:00.000	239.7	240	242.6	415.5	418	417.7	0	0	0	0	0	0	49.98	2.9	2.96	2.85	0	0	0	0
2019-11-26 15:43:00.000	239.6	240	242.6	415.4	417.9	417.6	0	0	0	0	0	0	49.98	2.86	2.88	2.79	0	0	0	0
2019-11-26 15:42:00.000	239.8	239.8	242.5	415.4	417.8	417.7	0	0	0	0	0	0	49.97	2.9	2.94	2.78	0	0	0	0
2019-11-26 15:41:00.000	239.8	239.8	242.4	415.4	417.7	417.6	0	0	0	0	0	0	50	2.94	2.95	2.81	0	0	0	0
2019-11-26 15:40:00.000	239.6	239.6	242.3	415	417.4	417.4	0	0	0	0	0	0	49.96	2.97	3.01	2.84	0	0	0	0
2019-11-26 15:39:00.000	239.6	239.7	242.3	415.1	417.4	417.3	0	0	0	0	0	0	49.95	2.93	2.95	2.84	0	0	0	0
2019-11-26 15:38:00.000	239.8	240	242.6	415.6	418	417.7	0	0	0	0	0	0	49.96	2.81	2.89	2.77	0	0	0	0
2019-11-26 15:37:00.000	239.4	239.7	242.4	415	417.5	417.3	0	0	0	0	0	0	49.96	2.89	2.97	2.84	0	0	0	0
2019-11-26 15:36:00.000	239.6	239.7	242.5	415.1	417.6	417.5	0	0	0	0	0	0	49.95	2.88	2.92	2.76	0	0	0	0
2019-11-26 15:35:00.000	239.7	239.7	242.7	415.3	417.8	417.8	0	0	0	0	0	0	49.97	2.93	2.9	2.79	0	0	0	0
2019-11-26 15:34:00.000	240	239.8	242.9	415.5	418.1	418.2	0	0	0	0	0	0	49.98	2.88	2.92	2.74	0	0	0	0
2019-11-26 15:33:00.000	239.9	239.6	242.8	415.2	417.8	418.1	0	0	0	0	0	0	49.97	3.04	3.1	2.89	0	0	0	0
2019-11-26 15:32:00.000	239.7	239.5	242.7	415	417.6	417.8	0	0	0	0	0	0	49.96	3.02	3.22	3.08	0	0	0	0
2019-11-26 15:31:00.000	239.9	239.5	242.7	415.2	417.7	417.9	0	0	0	0	0	0	49.98	2.94	3.01	2.84	0	0	0	0
2019-11-26 15:30:00.000	239.8	239.7	242.7	415.3	417.8	417.9	0	0	0	0	0	0	49.96	2.88	2.92	2.69	0	0	0	0
2019-11-26 15:29:00.000	239.9	239.5	242.7	415.2	417.6	417.9	0	0	0	0	0	0	49.99	2.9	2.85	2.71	0	0	0	0

05 – FREQUENCY ASK QUESTIONS

GPQM96

05 – FREQUENCY ASK QUESTIONS

1) How many CTs required for GPQM96for 3 phase 4 wires or 3 phase 3 wires application?

3 CTs required and the neutral current will be automatically calculated by the power meter

2) What is the accuracy of GPQM96 meter ?

It comply with IEC62053-22 Cl 0.2S and power quality analyzer

3) Is GPQM96 meter come with memory for data logging?

Yes , it have 8MB of internal memory to hold events and alarms.

4) What is the auxiliary power supported for GPQM96

AC/DC (80~270)V

5) What is the sampling rate of GPQM96 ?

The sampling rate of power meter is 4kHz

6) Does GPQM96 have external application software for configuration ?

No , GPQM96 does not support configuration with application software

7) For Digital Input Wet Contact , what is the voltage range for the wet input ?

220Vac

8) How many GPQM96 can be daisy chain in 1 looping?

Theoretically is 32nos but recommend to be <20nos.

05 – FREQUENCY ASK QUESTIONS

9) What is the maximum length RS485 communication cables for GPQM96?

Theoretically is 1200 meters.

10) How many extended module can be added for GPQM96?

Total 4 modules can be added to GPQM but only 1 com module can be add on

11) Why BMS / PMS cannot read power meter reading?

Recommend to use Modscan software to connect to the power meter and read the data directly to confirm the connection and meter functionality

https://www.youtube.com/watch?v=STBX1Nc2I0s

12) Can I replace the power meter without shutdown the load?

It is possible but please do take note that voltage signal's fuses need to be pull out and CT secondary signals need to be short link. Whenever possible, we still recommend to replace the meter with system shutdown.

THANK YOU

EETARP ENGINEERING PTE LTD
11 WOODLANDS CLOSE
#08-13 WOODLANDS 11
SINGAPORE 737853
TEL: 6339 3651
GST NO: 200001617K