

# ELECTRICAL SAFETY POWER QUALITY ENERGY MANAGEMENT

Eetarp E810 iBCPM Training Slide | Feb 2021





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# 01 - PRODUCT INFORMATION

## E810 iBCPM







# 01 - PRODUCT INFORMATION

## E810 iBCPM



- Measurement accuracy according to IEC62053-22 Cl 0.5S
- Measure up to 2 main circuits up to 31st harmonics measurements
- Measure up to 24 single phase circuits or measure up to 8 three phase sub-circuit metering
- Able to combine either three phase or single phase according to your need
- 4 relays output
- Optional with 2nd Modbus output
- Designed to suit with split core current transformer with 333mV CT input (CT range from 100A to 3000A)



## 02 – DEVICE CONNECTION

### E810 iBCPM





# 02 – DEVICE CONNECTION

Side view

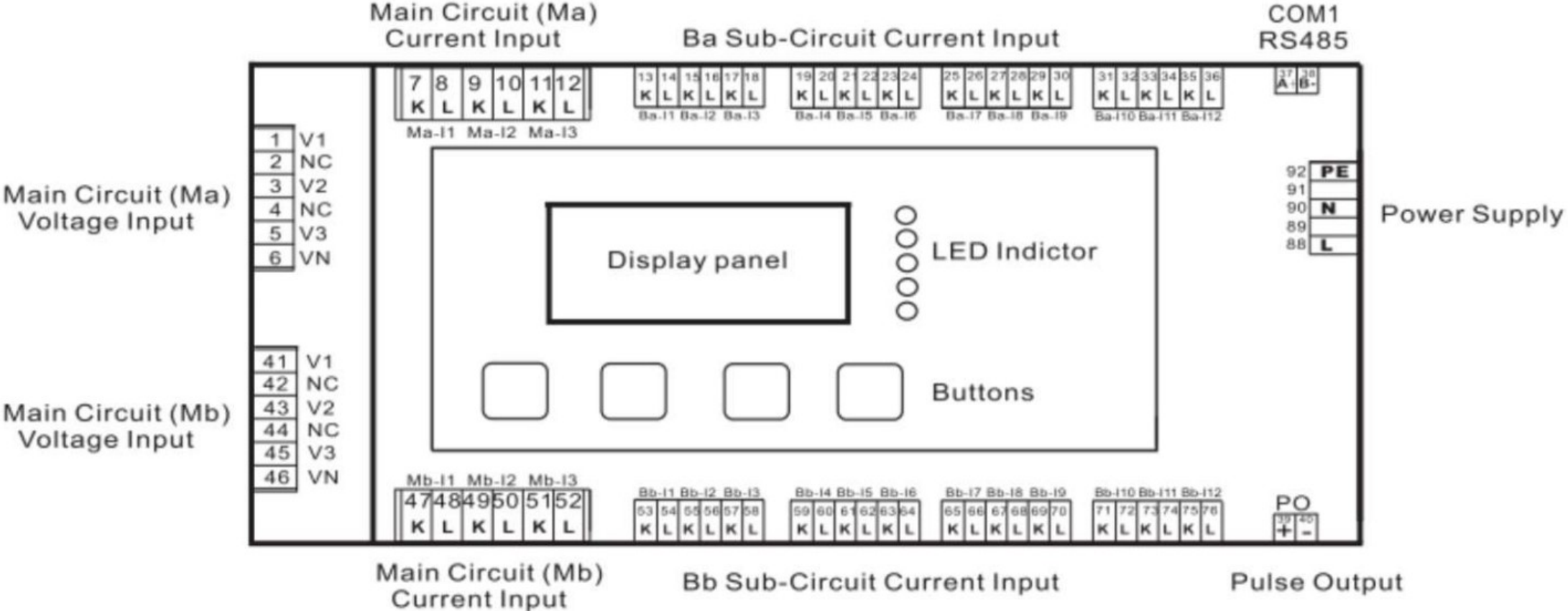


Side view



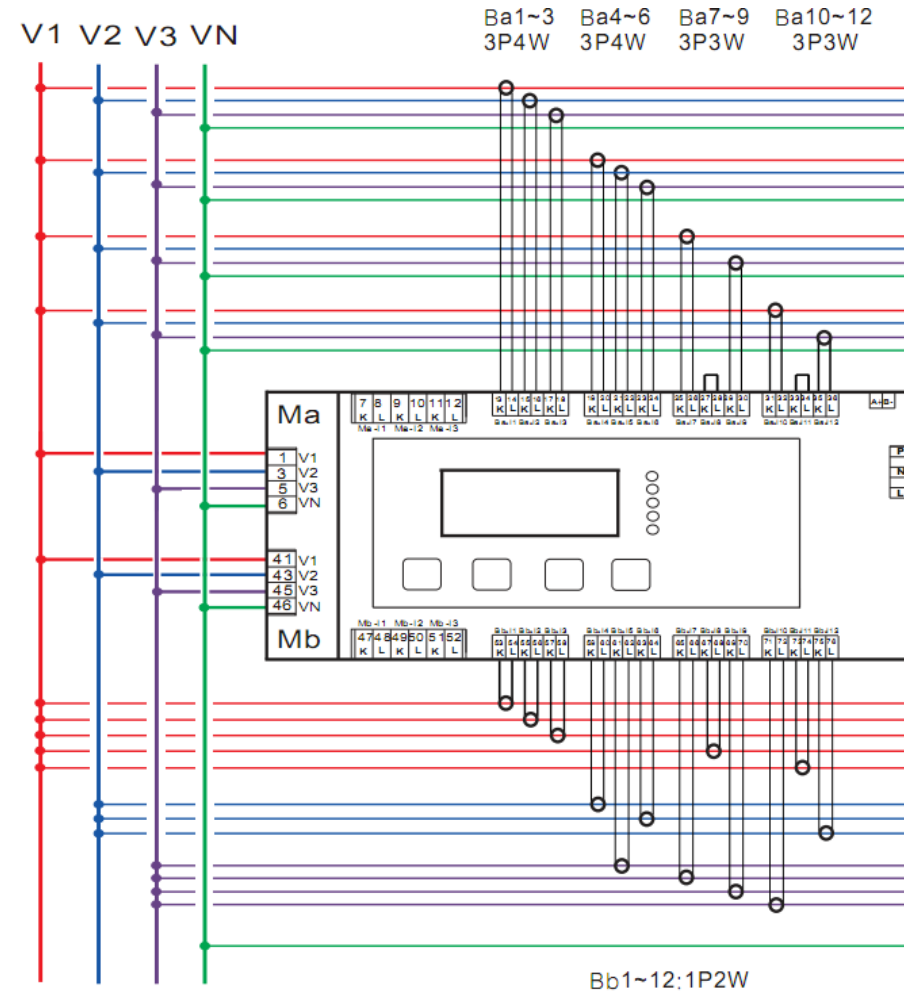


# 02 – DEVICE CONNECTION (3P4W)





## 02 – DEVICE CONNECTION (3P4W)



- Please take note to put a jumper wire on non-using channel in order to prevent noise occur.





## 03 – DEVICE SETUP

### E810 iBCPM





# 03 – DEVICE SETUP (SYSTEM TYPE SETTING)

DI1	M/L:Ma	P:SUM1
DI2		
RO1	V: 220.0 V	
RO2	I: 5.0 A	
RO3	P: 500 W	
RO4		
DX1	100.0 kWh	
DX2		

Main display

ENT  
FUN

DI1	Function Sel	
DI2		
RO1	M: Metering	
RO2	S: <u>Setup</u>	
RO3		
RO4	R: Reset	
DX1		
DX2		

Select setup

ENT  
FUN

SETUP
PASS WORD
0000

Input PASS WORD 1000

ENT  
FUN

SETUP
<u>SYS</u>
IO

Select system setting

ENT  
FUN

S/L:Ma	P:SYS
WIRE	:3P4W3
CT PRI	:0001A
PT PRI	:1000V
PT SEC	:0001V

ENT  
FUN



S/L:Ma	P:SYS
<u>WIRE</u>	:3P3W3 3P4W3
CT PRI	:0001A
PT PRI	:1000V
PT SEC	:0001V

Select wire to setup system type

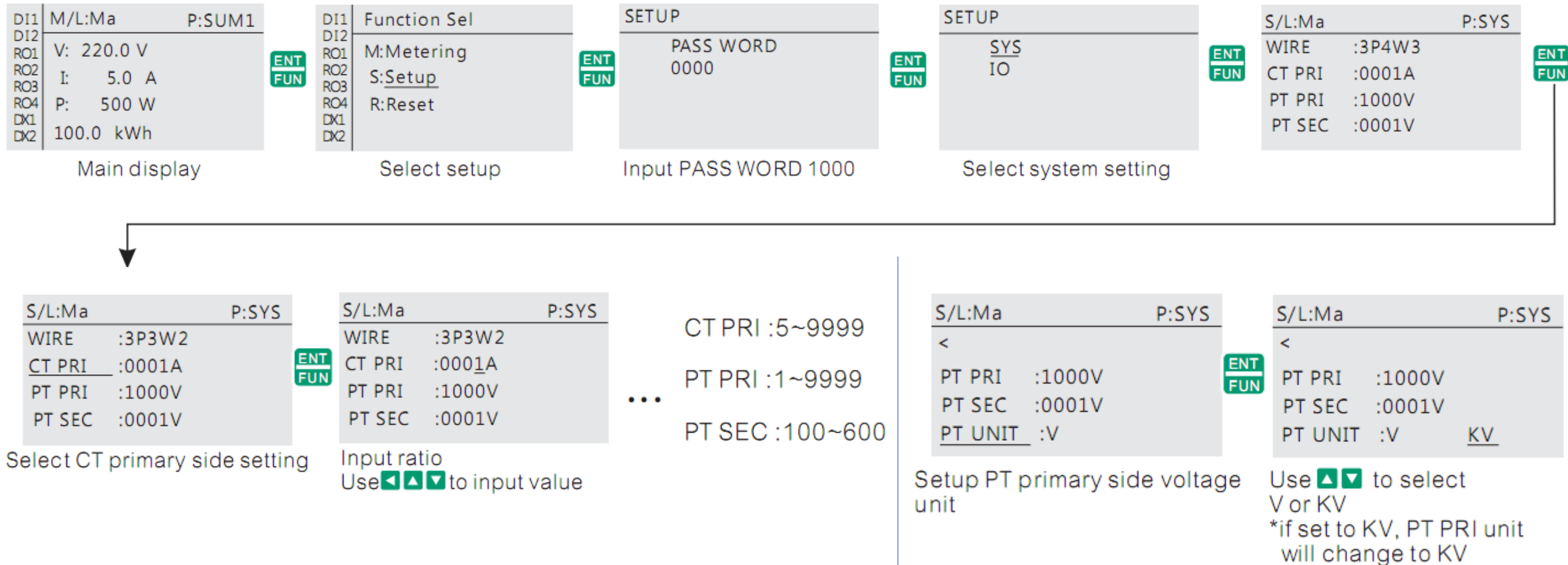
ENT  
FUN

S/L:Ma	P:SYS
WIRE	:3P4W3 <u>3P3W2</u>
CT PRI	:0001A
PT PRI	:1000V
PT SEC	:0001V

Use ▲▼ to select: 1P3W/  
3P3W2/3P3W3/3P4W3



## 03 – DEVICE SETUP (CT & PT SETTING)





# 04 – COMMUNICATION SETUP

S/P:IO			P:DI1
DI1	DI2	<u>COM1</u>	COM2
RO1	RO2	RO3	RO4
DM	SUMP	CLK	P.W.
DISP			

Select Com1 to setup

ENT  
FUN

S/P:IO	P:COM1
Adresse:001	
Baud:9600	
Parity:N82	

Device address setting

ENT  
FUN

S/P:IO	P:COM1
Adresse:001	
Baud:9600	
Parity:N82	

Use to input value  
Press to confirm

S/P:IO	P:COM1
Adresse:001	
<u>Baud:9600</u>	
Parity:N82	

Baud rate setting

ENT  
FUN

S/P:IO	P:COM1
Adresse:001	
Baud:9600	<u>1200</u>
Parity:N82	

Use to select 1200/2400/4800/  
9600/19200/38400  
Press to confirm

S/P:IO	P:COM1
Adresse:001	
Baud:9600	
<u>Parity:N82</u>	

Parity check setting

ENT  
FUN

S/P:IO	P:COM1
Adresse:001	
Baud:9600	
Parity:N82	<u>N81</u>

Use to select N81/N82/O81/E81  
Press to confirm





## 04 – COMMUNICATION SETUP (SOFTWARE)

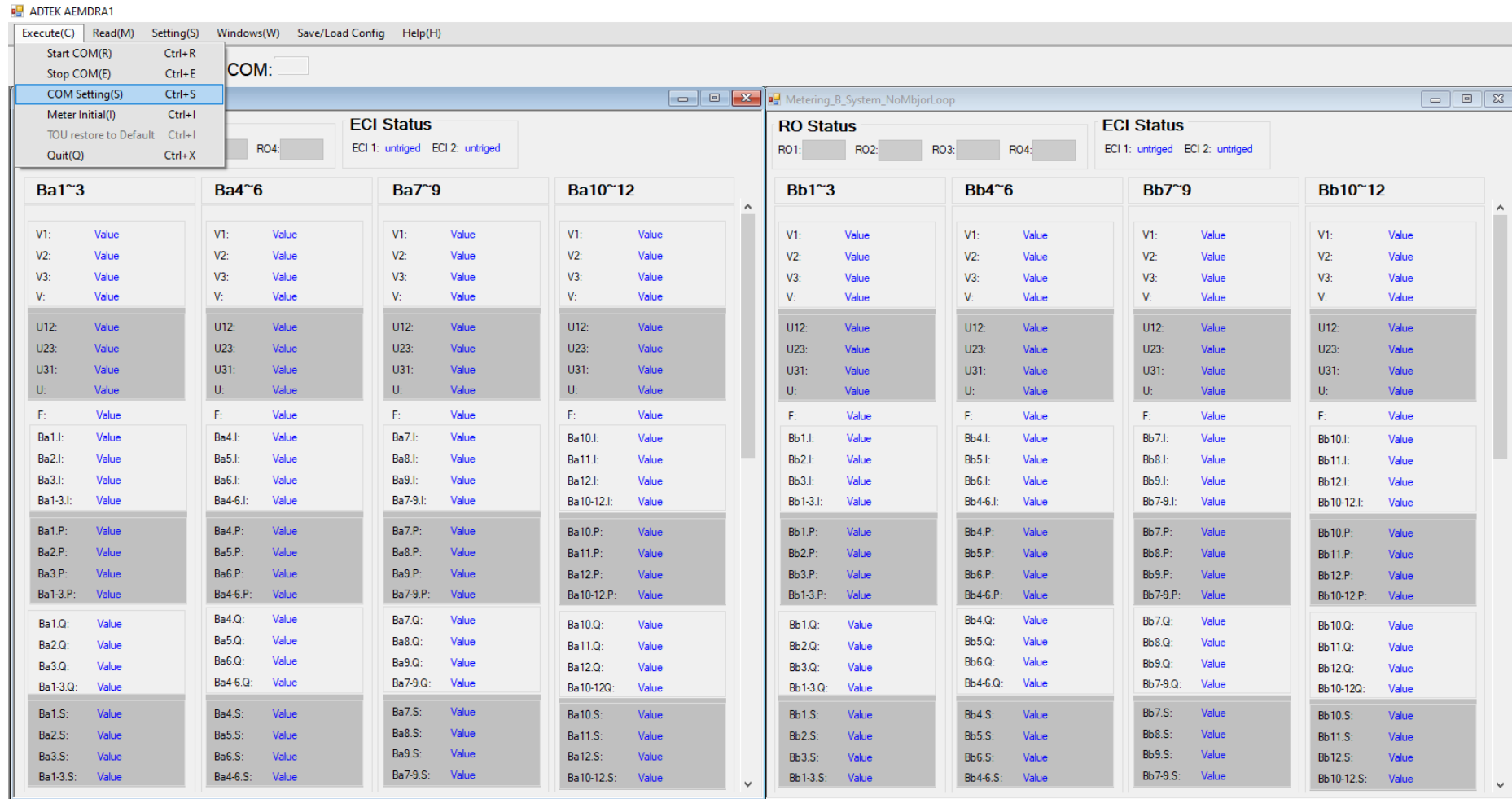
### Major Loop Select

Meter Select :	AEM-DRA1	▼
Meter with major loop?	No	▼
Protocol Select:	RS485	▼
<b>Confirm</b>		

- First, set the selection as shown and press Confirm



# 04 – COMMUNICATION SETUP (SOFTWARE)



- Under Execute select COM Setting



## 04 – COMMUNICATION SETUP (SOFTWARE)

COM\_Setting

Meter Address: 1

Protocol Select: RS485

Meter COM Select

Meter COM: COM1

PC Port Setting

COM Port: COM3

Baudrate: 9600

Parity: n-8-1

Query Interval: 300 (ms)

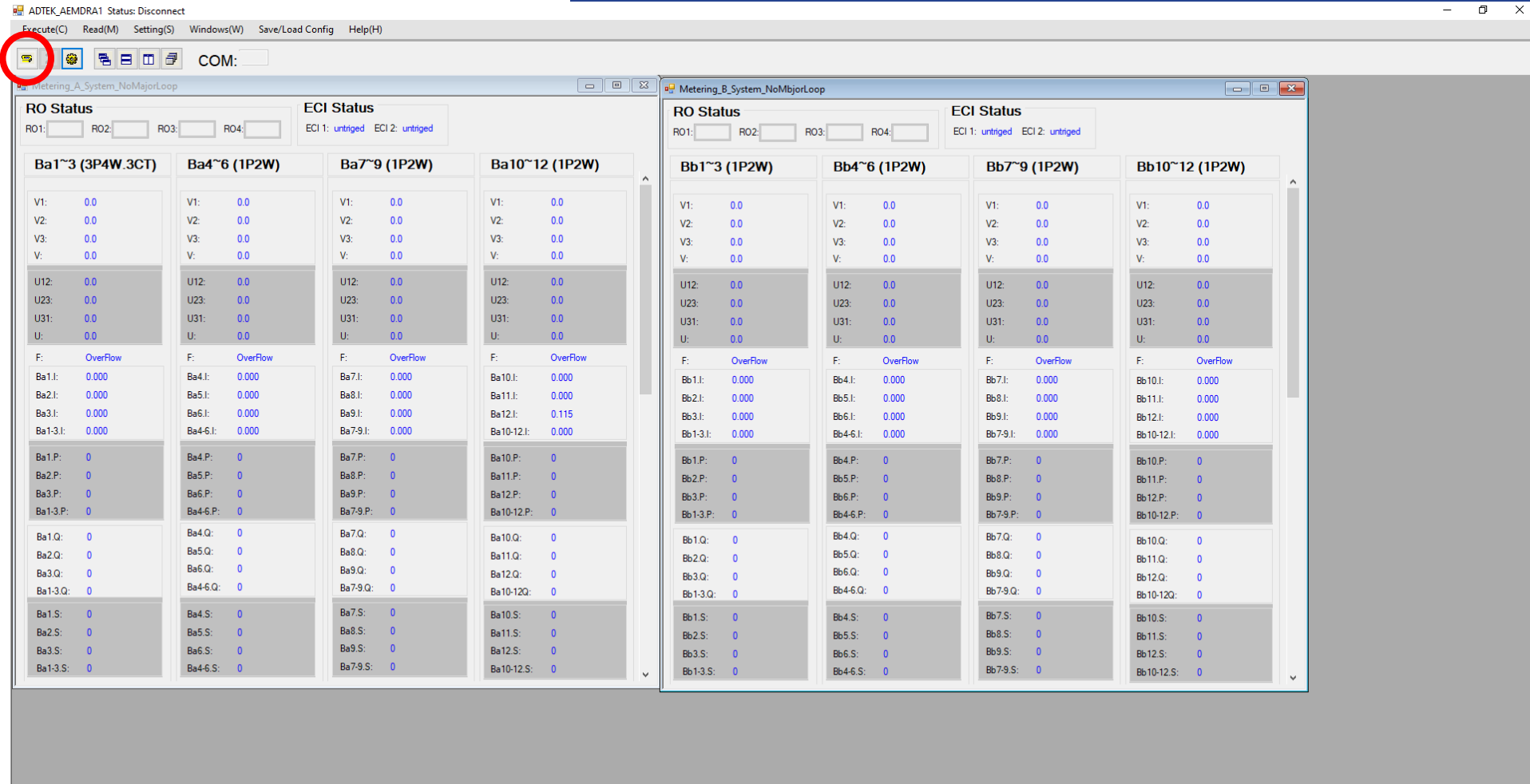
Time Out: 4 (s)

OK

- Make sure all the setting are same as the E810 iBCPM and press OK



# 04 – COMMUNICATION SETUP (SOFTWARE)



- Click the first icon on the top left






## 04 – COMMUNICATION SETUP (SOFTWARE)

ADTEK\_AEMDRA1 Status: Read All Data

Execute(C) Read(M) Setting(S) Windows(W) Save/Load Config Help(H)

COM: 

Metering\_A\_System\_NoMajorLoop

**RO Status**  
RO1:  RO2:  RO3:  RO4:

**ECI Status**  
ECI 1:  ECI 2:

Ba1~3 (3P4W.3CT)	Ba4~6 (1P2W)	Ba7~9 (1P2W)	Ba10~12 (1P2W)
V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0	V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0	V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0	V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0
U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0	U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0	U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0	U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0
F: Overflow	F: Overflow	F: Overflow	F: Overflow
Ba1.I: 0.000 Ba2.I: 0.000 Ba3.I: 0.000 Ba1-3.I: 0.000	Ba4.I: 0.000 Ba5.I: 0.000 Ba6.I: 0.000 Ba4-6.I: 0.000	Ba7.I: 0.000 Ba8.I: 0.000 Ba9.I: 0.000 Ba7-9.I: 0.000	Ba10.I: 0.000 Ba11.I: 0.000 Ba12.I: 0.115 Ba10-12.I: 0.000
Ba1.P: 0 Ba2.P: 0 Ba3.P: 0 Ba1-3.P: 0	Ba4.P: 0 Ba5.P: 0 Ba6.P: 0 Ba4-6.P: 0	Ba7.P: 0 Ba8.P: 0 Ba9.P: 0 Ba7-9.P: 0	Ba10.P: 0 Ba11.P: 0 Ba12.P: 0 Ba10-12.P: 0
Ba1.Q: 0 Ba2.Q: 0 Ba3.Q: 0 Ba1-3.Q: 0	Ba4.Q: 0 Ba5.Q: 0 Ba6.Q: 0 Ba4-6.Q: 0	Ba7.Q: 0 Ba8.Q: 0 Ba9.Q: 0 Ba7-9.Q: 0	Ba10.Q: 0 Ba11.Q: 0 Ba12.Q: 0 Ba10-12.Q: 0
Ba1.S: 0 Ba2.S: 0 Ba3.S: 0 Ba1-3.S: 0	Ba4.S: 0 Ba5.S: 0 Ba6.S: 0 Ba4-6.S: 0	Ba7.S: 0 Ba8.S: 0 Ba9.S: 0 Ba7-9.S: 0	Ba10.S: 0 Ba11.S: 0 Ba12.S: 0 Ba10-12.S: 0

Metering\_B\_System\_NoMajorLoop

**RO Status**  
RO1:  RO2:  RO3:  RO4:

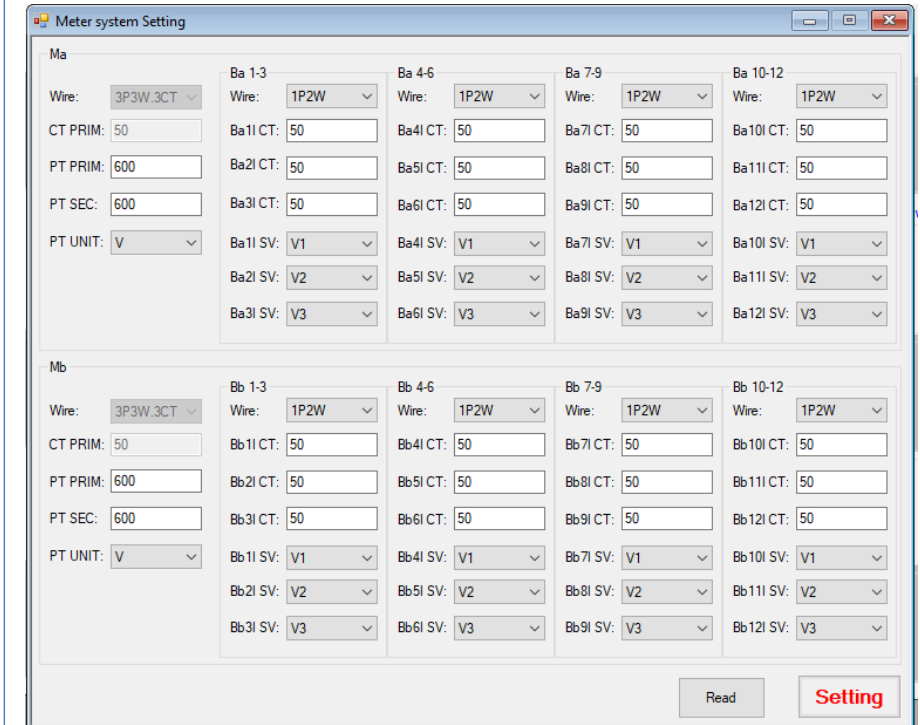
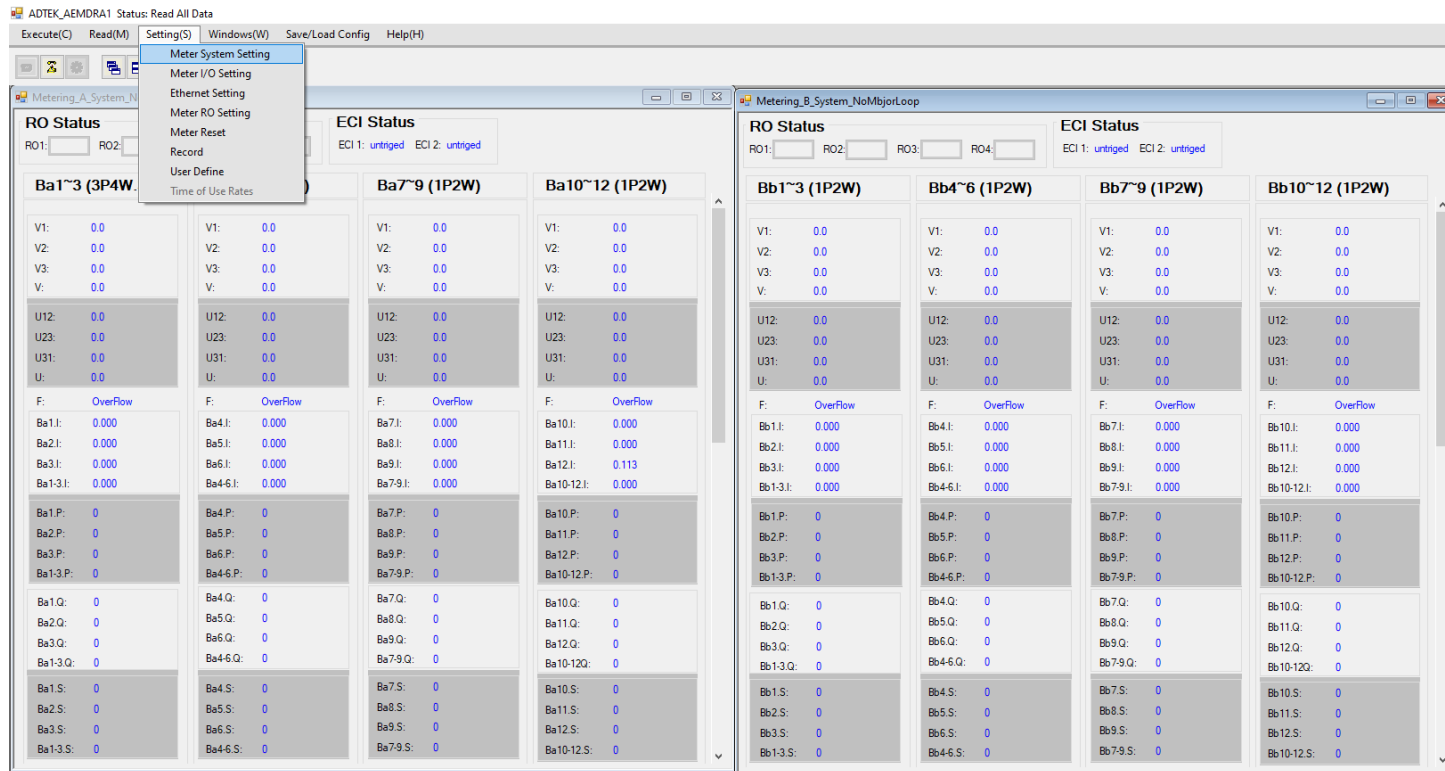
**ECI Status**  
ECI 1:  ECI 2:

Bb1~3 (1P2W)	Bb4~6 (1P2W)	Bb7~9 (1P2W)	Bb10~12 (1P2W)
V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0	V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0	V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0	V1: 0.0 V2: 0.0 V3: 0.0 V: 0.0
U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0	U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0	U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0	U12: 0.0 U23: 0.0 U31: 0.0 U: 0.0
F: Overflow	F: Overflow	F: Overflow	F: Overflow
Bb1.I: 0.000 Bb2.I: 0.000 Bb3.I: 0.000 Bb1-3.I: 0.000	Bb4.I: 0.000 Bb5.I: 0.000 Bb6.I: 0.000 Bb4-6.I: 0.000	Bb7.I: 0.000 Bb8.I: 0.000 Bb9.I: 0.000 Bb7-9.I: 0.000	Bb10.I: 0.000 Bb11.I: 0.000 Bb12.I: 0.000 Bb10-12.I: 0.000
Bb1.P: 0 Bb2.P: 0 Bb3.P: 0 Bb1-3.P: 0	Bb4.P: 0 Bb5.P: 0 Bb6.P: 0 Bb4-6.P: 0	Bb7.P: 0 Bb8.P: 0 Bb9.P: 0 Bb7-9.P: 0	Bb10.P: 0 Bb11.P: 0 Bb12.P: 0 Bb10-12.P: 0
Bb1.Q: 0 Bb2.Q: 0 Bb3.Q: 0 Bb1-3.Q: 0	Bb4.Q: 0 Bb5.Q: 0 Bb6.Q: 0 Bb4-6.Q: 0	Bb7.Q: 0 Bb8.Q: 0 Bb9.Q: 0 Bb7-9.Q: 0	Bb10.Q: 0 Bb11.Q: 0 Bb12.Q: 0 Bb10-12.Q: 0
Bb1.S: 0 Bb2.S: 0 Bb3.S: 0 Bb1-3.S: 0	Bb4.S: 0 Bb5.S: 0 Bb6.S: 0 Bb4-6.S: 0	Bb7.S: 0 Bb8.S: 0 Bb9.S: 0 Bb7-9.S: 0	Bb10.S: 0 Bb11.S: 0 Bb12.S: 0 Bb10-12.S: 0

- COM status will turn orange (blinking) when connected



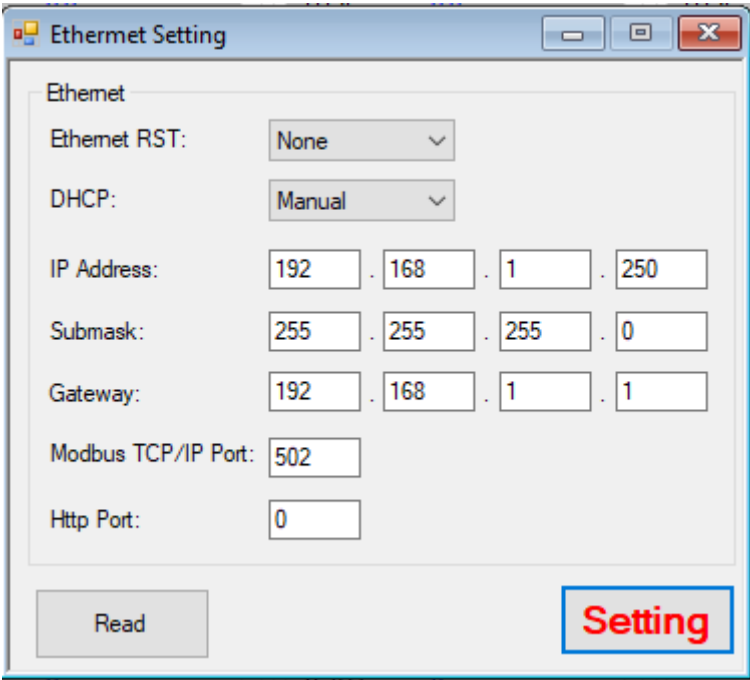
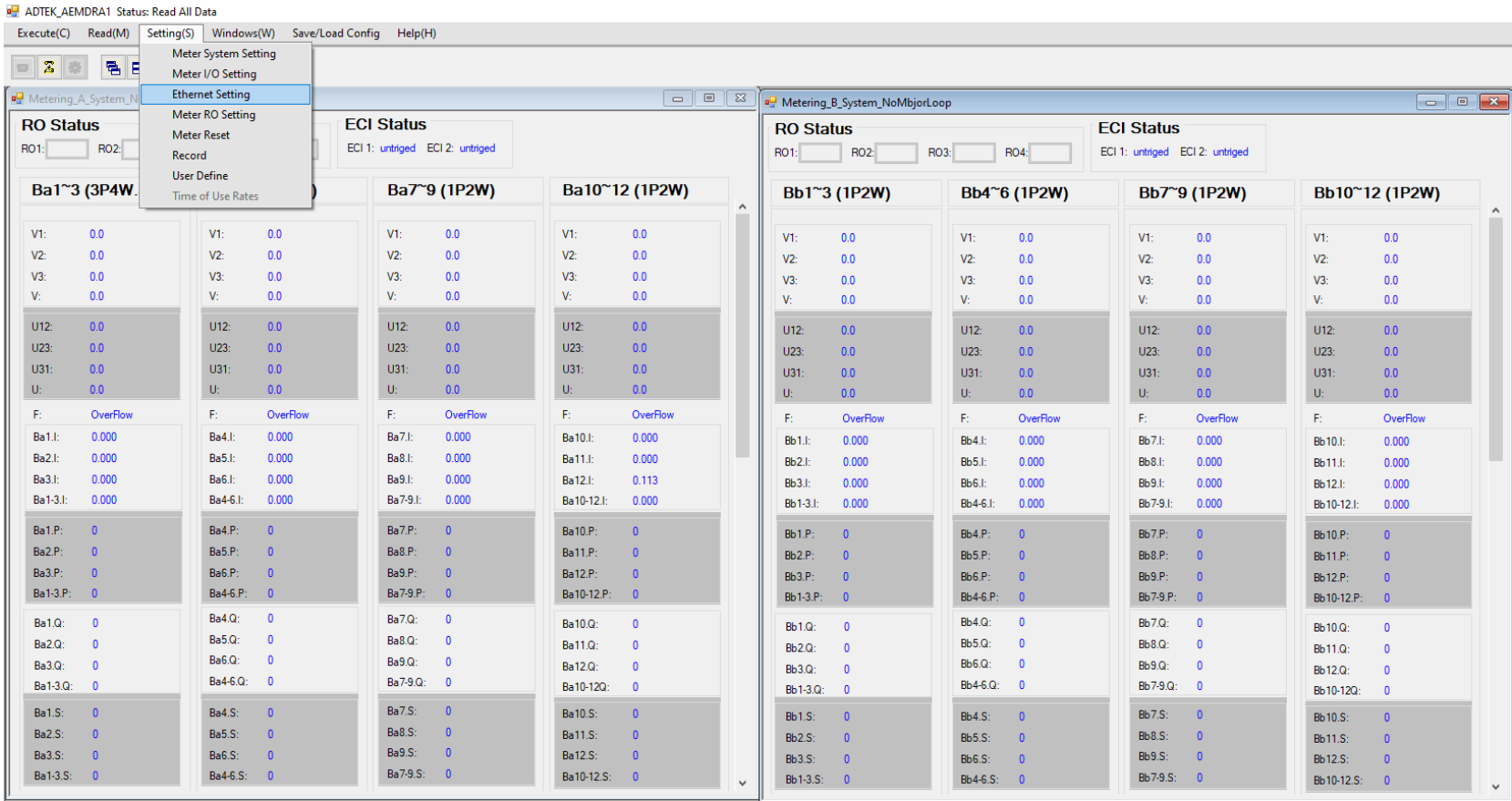
## 04 – COMMUNICATION SETUP (SOFTWARE)



- Under Setting, select Meter System Setting to set PT ratio



# 04 – COMMUNICATION SETUP (SOFTWARE)



- Under Setting, select Ethernet Setting to set IP Address, Submask and Gateway



## 05 – FREQUENCY ASK QUESTIONS

### E810 iBCPM







## 05 – FREQUENCY ASK QUESTIONS

**1) Does E810 BCPM required external power supply ?**

Yes, it needs a 240VAC power supply.

**2) What is the maximum CT length?**

Theoretically is 10 meters.

**3) Do we have variation model that use 5A secondary CT instead of current 333mV secondary CT ?**

E810 BCPM only support 333mV CT input

**4) What is the sampling rate of E810 BCPM?**

The sampling rate of E810 BCPM is 128 sample/cycle which equivalent to 6.4kHz

**5) Can randomly connect CT instead of connect in sequence ?**

Yes, but make sure the software interface is set accordingly.

**6) Can we have 3 phase and single phase circuits connected into the E810 module?**

Yes.



## 05 – FREQUENCY ASK QUESTIONS

**7) What is the maximum length RS485 communication cables for E810?**

Theoretically is 1200 meters.

**8) 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=STBX1Nc2IOs>

**9) 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 . Whenever possible, we still recommend to replace the meter with system shutdown.

**10) Do 333mV CT secondary required to short link if it removed from terminals?**

333mV CT secondary do not required any short link terminal since it is small voltage signals compare to 1 or 5A CT type.

# THANK YOU

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