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EME1PM-110V / EME1PM-220V



# EME1PM-110V / EME1PM -220V

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# 1. Introduction



Figure #1A

# Introduction (continued) EME1PM-110/EME1PM-220

Introducing the AKCP DIN rail three phase four wire active & reactive integration energy meter as shown in figure #1A above

You can order either the EME1PM-110 (110 Volts) or the EME1PM-220 (220 Volts) depending on your local power specifications.

Both the EME1PM-110 or EME1PM-220 are designed to be installed on a 35mm DIN rail or directly onto a meter board with screws (as shown in figure #1B below) and is shipped in the protective plastic case. You can remove the meter from the case and mount it on the DIN rail if you wish. Please see step by step instructions for <u>removing the meter from the plastic case</u> in the "Installation" section of this manual (page #7)



Figure #1B

# 2. Safety Instructions – VERY IMPORTANT

#### Information for Your Own Safety

This manual does not contain all of the safety measures for operation of the equipment (module, device), because special operating conditions, and local code requirements or regulations may necessitate further measures. However, it does contain information which must be adhered to in the interests of your own personal safety and to avoid material damages. This information is highlighted by a warning triangle and are represented as follows, depending on the degree of potential danger.



**Warning** means that failure to observe the instruction can result in death, serious injury or considerable material damage.



**Caution** means hazard of electric shock and failure to take the necessary safety precautions will result in death, serious injury or considerable material damage.

Qualified personnel Commissioning and operation of the equipment (module, device) described in this manual may only be performed by qualified personnel. Qualified personnel in the sense of the safety information contained in this manual are persons who are authorized to commission, start up, ground and label devices, systems and circuits according to safety and Regulatory standards.

#### **Proper handling**

The prerequisites for perfect, reliable operation of the product are proper transport, proper storage, installation and assembly, as well as proper operation and maintenance. When operating electrical equipment, certain parts of this equipment automatically carry dangerous voltages. Improper handling can therefore result in serious injury or material damage.

- Use only isolated tools.
- Do not connect while circuit is live (hot).
- Do not connect the meter to a 3 phase 400VAC network.
- Place the meter only in dry surroundings.
- Do not mount the meter in an explosive area or exposed to dust, mildew and insects.
- Make sure the used wires are suitable for the maximum current of this meter.

- Make sure the AC wires are connected correctly before activating the current/voltage to the meter.
- Do not touch the meter connecting clamps directly with your bare hands, with metal, blank wire or other material as you will have the chance of an electricity shock and a possible chance for health damage.
- Make sure the protection cover is placed after installation.
- Installation, maintenance and repair should only be done by a qualified personnel.
- Never break the seals and open the front cover as this might influence the functionality of the meter, and will void any warranty.
- Do not drop, or allow physical impact to the meter as there are high precision components inside that may break or render the meter measurements inaccurate.

#### **Exclusion of liability**

We have checked the contents of this publication and every effort has been made to ensure that the descriptions are as accurate as possible. However, deviations from the description cannot be completely ruled out, so that no liability can be accepted for any errors or omissions contained in the information given. The data in this manual are checked regularly and the necessary corrections are included in subsequent editions. We are grateful for any improvements that you care to suggest.

#### 3. Performance criteria

Operating humidity	≤ 75%
Storage humidity	≤ 95%
Operating temperature	
Storage temperature	
International standard:	
- Active energy	IEC 62053-21
- Reactive energy	IEC 62053-23
Accuracy class:	
- Active energy	Class 1
-Reactive energy	Class 2
Protection against penetration of dust and water	IP51
Insulating encased meter of protective class	

# 4. Specifications

Nominal voltage (Un)	
Operational voltage	
Insulation capabilities:	
- AC voltage withstand	2KV for 1 minute
- Impulse voltage withstand	6KV – 1.2μS waveform
Basic current (Ib)	5 A
Maximum current (Imax)	

Operational current range	0.25 A - 30 A
Over current withstand	
Operational frequency range	
Internal power consumption	≤2W / 10VA per phase
Test output flash rate of active (kWh LED)	
Test output flash rate of reactive (kvarh LED)	
Test pulse output rate of active (kWh TEST - pins	7 & 8)0.01, 0.1, 1, 10 kWh per pulse optional
	(Default 0.01 kWh per pulse)
Test pulse output rate of reactive (kvarh TEST - pi	ns 3 & 4)0.01, 0.1, 1, 10 kvarh per pulse optional
	(Default 0.01 kvarh per pulse)
Power supply indicator (L1, L2 & L3 LED)	Meter is connected and working OK
Consumption indicator (kWh & kvarh LED)	Flashing at load running. Reverse indicator
	Rev. LED) Lighten when load current flow is reverse
Max. demand measuring method	Block demand or sliding window demand optional
	(block demand for default)
Demand interval for block demand1 - 9	99 minutes can be arbitrary set (15 minutes for default)
Recursive time for sliding window demand 1 -	99 minutes can be arbitrary set (1 minute for default)
Max. demand reset mode	Manually reset
Data display mode:	
- Electric energy 5+2 digits or	6+1 digits for option LCD display (5+2 digits for default)
- Power	
- Actual voltage	
- Actual current	4+2 digits LCD display
- Actual frequency	
- Power factor	
Data communication port	RS485 port

Data communication indication (COM. LED)	) Flashing during the data communication
Data transportation speed	1200bps
Data save	The data can be stored more than 20 years when power cut

# 5. Description

Α	Front panel
B	Protection cover
C	Cover
D	Base
E	Security hasp



## **Production material**

Front panel	Transparent inflaming retarding polycarbonate
Protection cover	Transparent inflaming retarding polycarbonate
Cover	Fibre-glass reinforced inflaming retarding polycarbonate
Base	Fibre-glass reinforced inflaming retarding polycarbonate

## Dimensions



Height = 88 mm Width = 125 mm Depth = 68 mm Distance between installation holes = 63 mm (installation mode in front of board) Weight = 0.75Kg (net)

# 6. Installation



- Turn off and lock out all power supplying the energy meter and the equipment to which it is installed before working on it
- Always use a properly rated voltage sensing device to confirm that power is off



- Installation should be performed by qualified electricians familiar with applicable codes and regulations.
- Use isolated tools to install the meter
- Fuse or thermal cut-off or single-pole circuit breaker can't be fitted on the supply line and not the neutral line.

#### Removing the power meter from the case

If you wish to remove the meter from the protective plastic case and mount this on your own 35mm DIN rail you can by following these steps below:





Step #1 – Remove the (4) screws from each corner of the clear plastic meter housing and remove the top cover as shown in figure #6A above



Figure #6B

Step #2 – Using a small flat bladed screw driver, pull out the two black colored clips until they snap into the out position as shown in figure #6B



Figure #6C



Figure #6D

Step #3 – Gently lift the meter up off the DIN rail then out of the housing as shown above in figure #6C and figure #6D

#### Connecting the power cables

We recommend that the connecting wire which is used to connect the meter to outside circuit should be sized according to local codes and regulations for the capacity of the circuit breaker, or an over current device used in the circuit



L1 = L1 phase wire L2 = L2 phase wire L3 = L3 phase wire N = Neutral wire 7 and 8 = Test pulse output contact of active energy 5 and 6 = RS485 communication contact 3 and 4 = Test pulse output contact of reactive energy

1 and 2 = Test pulse output rate setup and max. demand manually reset contact

Connection of the power cables should be done by a qualified electrician and in accordance with the connection diagram shown above in figure #7

### Connecting the meter to the securityProbe

You will connect RS485 cable from pins 5 and 6 to the RS485 port located on the back of the securityProbe. Please see figure #6E above and #6F below

#### **RS485** Cabling

It is recommended that you use #24 AWG (American Wire Gauge) twisted pair copper wire with 16pF/ft for cables to connect the power meter to the ServSensor V4P RS485 port (see figure # 7.5 below). The maximum cable length is determined by the combination of cable length (in meters) and data signaling rate. The data signaling rate on the power meter is 1.2K bps (bits per second), so the maximum cable run length for this cable is roughly 800 meters, or 2400 feet.



Figure #6F

# 7. Operation

#### Working indication

On the power meters front panel, there are three power indicating LED's which have a different color from each other. The yellow LED represents L1 phase; the green LED represents L2 phase; the red LED represents L3 phase. When any phase is working normally, the LED representation will on. When any phase has a failure or no power, the LED will turn off.

#### **Consumption indication**

On the power meters front panel, there are two white impulse indicating LED's (When it is on, it is red). One of them is the kwh LED, which indicates active energy consumption, another of them is the kvarh LED, which indicates reactive energy consumption. When the load is running, these LED's will flash to indicate the load is consuming power. The more quickly the LED flashes, the more consumption there is. The kWh LED's flash rate is 800 impulses per kWh. And the flash rate of kvarh LED is 800 impulses per kvarh.

#### **Reverse indication**

There is a Rev. LED on power meters front plate. When the meter load current flow is reversed, then this LED is lit.

#### **Reading the meter**

The power meter has an LCD. The LCD screen can display numerous electricity energy data and meter information. The 2 display modes are: scrolling mode and button press one by one mode. Via the meter's RS485 port, the display mode can be selected to program the meter.

- The meters default factory setting is set to the scrolling display. The scrolling period is 5 seconds. The scrolling period can be set from 1-99 seconds, via the meter's RS485 port.
- When the scrolling period is set to 0 seconds, the display mode will be changed to the press button display, one-by-one mode. You can connect a button type switch between the terminal 1 and 2. This allows you to press an actual button to display the data from the LCD.
- The meter can display up to 20 items, depending on how the display mode is setup. The display data will be displayed in the following order. The data needed can be displayed after programming via the meter's RS485 port.

#### a) Meter number

Indication: NNNNNNNNNNN 12 digits will be displayed in a high and low readout as shown in figure #7A below Example: meter number 698532364526



Figure #7A

## b) User number

Indication: NNNNNNNNNNNN

12 digits will be displayed in a high and low readout as shown in figure #7B below Example: meter number 260935625408



Figure #7B

#### c) Test pulse output rate

Indication: So: NNN

Example: meter number test pulse output rate is 0.01 kWh/pulse & 0.01 kvarh/pulse as shown in figure #7C below



Figure #7C

#### d) Total active engery

Indication: NNNNN.NN kWh or NNNNNN.N kWh This will be displayed on the LCD on two screens as shown in figure #7D below Example: total active energy is 45748.91 kWh



Figure #7D

#### e) Reverse direction active energy

Indication: NNNNN.NN kWh or NNNNNN.N kWh This will be displayed on the LCD on two screens as shown in figure #7E below Example: reverse direction active energy is 8456.78 kWh



Figure #7E

#### f) Active max. demand

Indication: NN.NNNN kW This will be displayed on the LCD on two screens as shown in figure #7F below Example: Active max. demand is 84.5678 kW



Figure #7F

#### g) Total reactive energy

Indication: NNNNN.NN kvarh or NNNNNN.N kvarh This will be displayed on the LCD on two screens as shown in figure #7G below Example: total reactive energy is 6495.78 kvarh



Figure #7G

#### h) Reverse direction reactive energy

Indication: NNNNN.NN kvarh or NNNNNN.N kvarh This will be displayed on the LCD on two screens as shown in figure #7H below Example: reverse direction reactive energy is 1035.72 kvarh



#### i) Reactive max. demand

Indication: NN.NNNN kvar

This will be displayed on the LCD on two screens as shown in figure #71 below Example: reactive max. demand is 10.3572 kvar



Figure #71

#### j) Actual active power

Indication: NN.NNNN kW

This will be displayed on the LCD on two screens as shown in figure #7J below Example: actual active power is 10.4891 kW



Figure #7J

#### k) Actual reactive power

Indication: NN.NNNN kvar

This will be displayed on the LCD on two screens as shown in figure #7K below

Example: actual reactive power is 0.5678 kvar



Figure #7K

# I) Actual apparent power

Indication: NN.NNNN kVA

This will be displayed on the LCD on two screens as shown in figure #7L below Example: actual apparent power is 14.5678 kVA



Figure #7L

# m) Actual L1 phase voltage

Indication: NNN.N V

This will be displayed on the LCD on two screens as shown in figure #7M below Example: actual L1 phase voltage is 230.8 V



Figure #7M

#### n) Actual L2 phase voltage

Indication: NNN.N V

This will be displayed on the LCD on two screens as shown in figure #7N below Example: actual L2 phase voltage is 231.2 V



Figure #7N

## o) Actual L3 phase voltage

Indication: NNN.N V

This will be displayed on the LCD on two screens as shown in figure #70 below Example: actual L3 phase voltage is 233.2 V



Figure #70

# p) Actual L1 phase current

Indication: NNN.N V

This will be displayed on the LCD on two screens as shown in figure #7P below Example: actual L1 phase current is 36.78 A



#### q) Actual L2 phase current

Indication: NNNN.NN A

This will be displayed on the LCD on two screens as shown in figure #7Q below Example: actual L2 phase current is 25.30 A



Figure #7Q

#### r) Actual L3 phase current

Indication: NNNN.NN A

This will be displayed on the LCD on two screens as shown in figure #7R below Example: actual L3 phase current is 6.78 A



Figure #7R

#### s) Actual frequency

Indication: NN.NN Hz

This will be displayed on the LCD on two screens as shown in figure #7S below Example: actual frequency is 50.06 Hz



Figure #7S

#### t) Actual power factor

Indication: NN.NN Hz

This will be displayed on the LCD on two screens as shown in figure #7T below

Example: actual power factor is 0.567



Figure #7T

# Other meter functions

The LCD screen on the power meter will also display other information pertaining to its functions

• Meter version

When the power is applied to the meter, it will display the meters version for 5 seconds, then it will display the other items. - Indication meter version 9.1 as shown in figure #7U below



Figure #7U

# • Meter communication address (Meter ID)

Every meter has a 12 digit sole communication address for identification, called the Meter ID.

# 8. Operation using the ServSensor V4P web interface

	ServSensor V4P															Admin					
Location: System Location																	Cu	rrent Sy	stem Tir	ne: 7/1/0	9 12:26:19
Summary Map	Picture La	g / Sour	nd Log		Se	nsors			Notifi	cation			Setting	S	ſ	App	lications	\$	ſ	Help	p
									Vi	rtual S	Setting	s									
Sensors Menu	Virtual Soneore	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Sensor Ports	Virtual Sensors	0	0																		
Camera Motion Detection		(t 🚺 ))	(( <b>X</b> ))	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sound Detector																					
No Camera Signal Detection		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Virtual Sensors		8	8	8	8	8	8	8	1	8	1	8	8	8	8	8	8	8	8	8	8
<u>Virtual Sensor Port 3</u>																			-		•
Help		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
This page shows the Remote Sensor ports. Remote Sensor is a visual sensor		1	1	1	1	1	1	1	1	1	1	I	1	1	1	1	1	1	1	1	1
Shell script must print sensor value to Standard Output.		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Scripts must return 0 if succeeed otherwise is deternine as SENSOR ERROR.		1	1	1	1	1	1	1	1	1	1	ĩ	Ĩ	1	Ĩ	1	1	1	1	1	1
										Configu	ıration										

#### Figure #8A

After connecting the power meter to the ServSensor V4P RS485 port, click on the "Sensors" tab and then click on the "Virtual Sensors" on the features column on the left side of the page

BLACK BO	85					Se	erv	Se	nso	or \	/4	•										Aamin
Location: System Location					_													Cu	neol Sy	ndiarra Ta	mia: 7010	19 12:34:2
Summary	Map	Picture Lo	g / Sou	NILOg	1	50	more			NOT	ication			Setting	<b>в</b> ×		App	lication	s.)	<u> (</u>	He	p :
										- V	intual 1	Setting	15							_		
Sensors Menu	E	Virtual Sensors	1	2	3	4	5	6	7			10	11	12	13	14	15	16	17	18	19	20
Sensor Ports		and an and a second second	0	A	12	12		12	- 34	100			100	1	1993	120			- 52 -	- 21	2.1	1000
Camera Motion Detection			18	1.10	1	1	1	1	I	1	1	1	1	1	1	1	I	1	1	1	1	I
Sound Detector					1.11																	
No Camera Signal Detection			21	22	23	24	26	26	27	28	29	30	31	35	33	34	35	36	37	38	39	40
Virtual Sensors																						
<ul> <li>Virtual Sensor Port 3</li> </ul>			. *		÷.	. *	- A.		. *	. *								. *	÷.	- 5	1.4	
Help			41	42	43	44	45	46	47	48	49	58	51	52	53	54	55	56	57	58	59	60
This page shows the Remot	te Sensor																					
ports. Remote Sensor is a v that reading value from Shell	taval sensor I script				- A-	- 61					- A.			. *								
Shell script must print sense Street and Outwal	or value to		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	n	78	79	80
Boripts must return 0 if succ	beea				<u>_</u>	1											1					
otherwise is determine as SI ERROR	ENSOR		1	I	I	1	1	1	1	1	1	1	I	1	1	1	I	1	1	I	I	1
Service .	-									1000		-		-								
											Source	Enen	W Hete									
												SNM	PGET	1					Cance		ind	
											-	Ping						-	Care		acar _	
												MODE	BUS									
												Book	nec	-								
											(	Energ	by Merice		1							
											3	-			2							

Figure #8B

Click on the configure button shown in figure #8A above, then choose "Energy Meter" from the drop down list as shown in figure #8B

BLACK BOX					S	erv	Ser	iso	r V∠	ŧΡ											Admin
Location:System Location	Dicture	Log ( Sou	ndlog			openre			- Notifi	eation			Setting	10	- 1	Ann	Ci dication	urrent S	ystem I	ime: //1/ Hel	09 12:38:19
Summary	Picture	LUY / SUU	iu Log			ansora			V	irtual 4	Setting		Secong	5		որթ	lications	>		Thei	,
Sensors Menu										There are a	Jenna										
Sensor Ports	Virtual Sensor	s 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Camera Motion Detection		1		1	8	1	1	1	1	1	1	1	8	1	8	1	1	1	1	1	1
Sound Detector				<u> </u>																	
No Camera Signal Detection		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Virtual Sensors																					
<u>Virtual Sensor Port 3</u>			•	1	A	1	Δ	4		4	1	A	A	1	Δ		A	A	A	1	Δ
Help		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
This page shows the Remote Sensor ports. Remote Sensor is a visual sensor that reading value from Shell script.		1	1	t	1	t	t	1	1	1	1	t	t	1	1	1	1	t	t	1	1
Shell script must print sensor value to Standard Output.		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Scripts must return 0 if succeeed otherwise is detemine as SENSOR ERROR.		1	1	1	1	1	1	1	1	Î	Î	1	1	ĩ	Ĩ	1	1	1	1	I	î
									Sensor	Name	Virtua	l Senso	or Port 3		_	_	_				
									Mete	r Type eter ID	Singl	e Phase 1000000									
									R	eading	Total	Active	Power	-							
										Туре	• Ab	solute	C Relat	ive							
									Value	Factor	× 0.0	1 🗾									
							Valu	ue Rang	Un e for Slid	it Text Ier Bar	KWh 0	Т	0 100	_							
											,					ſ	_				1
		_					_									l	Cance	ГВ	ack	Next	
		_																			

Figure #8C

You can now name your sensor by changing entering this in the "Sensor Name" field. When naming the sensor, you may want to name your sensor in reference to what you will be monitoring.

You will then select your "Meter Type" from the drop down list by clicking on the down arrow shown in figure #8C above. This will be the either the Single or Three Phase type.

At this point you will also enter the meter ID into the "Meter ID" field. You will find this on the front of the meter in the "No." field. When entering this number you need to add the extra 0 digits to the beginning of this field to make up the twelve digits for example, if the label shows 10046438, then you would add the extra zeros like this: 000010046438

BLACK BOX	ServSensor V4P																			Admin	
Location: System Location																	Cur	rent Sy	stern Tir	ne: 7/1/	9 12:41:20
Summary Map	Picture Lo	g/Sour	d Log		Se	ensors			Notifi	cation	1		Setting	IS	T I	Appl	lications	\$		Hel	þ.
								-	V	irtual S	Setting	s									
Sensors Menu				2				-		•	40		42	-				47	40	40	~
Sensor Ports	Virtual Sensors	-	-	<b></b>	4	2	0		0	9	10		12	13	14	15	10	"	10	19	20
Camera Motion Detection		P		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sound Detector																					~
No Camera Signal Detection		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Virtual Sensors																					
<u>Virtual Sensor Port 3</u>																					
Help		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
This page shows the Remote Sensor		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1		1	1	1
that reading value from Shell script.				÷.	÷.	÷.			÷.			÷.									· 1
Standard Output		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
otherwise is detemine as SENSOR ERROR.		I	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
									Sensor	Name	Virtua	l Senso	r Port 3								
									Mete	r Type	Three	e Phase	-								
									м	eter ID	00001	1004643	18	_							
									R	eading	Total	Active I	Power								
									Mahun	Type	Total	Reactiv	e Power			-					
									value	ractor	Activ	e Power	ior	1							
							Mak		UII for Civi	In Text	Phas	e Line1	Voltage								
							vait	ie nany	e tut sau	iei bai	Phas	e Line2	Voltage								
											Phas	e Line1	Current			1	Cancel	B	ack	Next	n l
											Phas	e Line2	Current							_	
											Powe	er Factor	1								

Figure #8D

As you can see now in figure #8D above that the meter ID has been entered. Now you will select what type of reading you need to monitor. You will select the reading by clicking on the drop down arrow as shown in figure #8D above



Hint: If you find these screen shots too small or out of focus you can increase the size, or zoom in on the document to enlarge the screen shots. This will make them clearer and much more readable.

We will use the "Total Active Power" as the example of the steps for setting this up in the ServSensor V4P web interface. You will use the exact same steps when setting up any other reading type from the drop down list shown above in figure #8D

BLACK BOX	Add ServeSensor VP4 Current System Time: 7/109 12:4															Admin					
Location: System Location																	Cu	rrent Sy	stem Ti	me: 7/1/	09 12:43:04
Summary Map	Picture Lo	g / Sour	nd Log		Se	ensors			Notifi	cation	]		Setting	IS		Арр	lication	s	<u>[</u>	Hei	p
									V	irtual S	Setting	5									
Sensors Menu	Virtual Soneore	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Sensor Ports	Virtual Sensors	0	0			Ŭ			, in the second s	, i											
Camera Motion Detection		(( ))	((1))	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sound Detector																					3.818
No Camera Signal Detection		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Virtual Sensors																					
<u>Virtual Sensor Port 3</u>		A	A										A	4	Δ	A	A		A		1
Help		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
This page shows the Remote Sensor ports. Remote Sensor is a visual sensor that reading value from Shell script.		1	1	1	1	1	1	1	I	I	1	I	I	1	I	1	1	1	1	1	1
Shell script must print sensor value to Standard Output.		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Scripts must return 0 if succeeed otherwise is detemine as SENSOR ERROR.		ĩ	1	1	1	I	1	1	I	1	I	1	1	1	1	1	1	1	1	1	1
									Sensor	Name	Virtua	il Sensa	or Port 3					_			
									Mada		These	Dhasa									
									Mete	ator ID	111100	Phase									
										eter iD	Total	Activo I	Dowor	-							
									~	Typo	( AL	ACTIVE	Opeled	-							
									Value	Factor	× 0.0	1 -	· riela	ive							
									Hr	it Text	kWh		8	_/							
							Valu	e Rang	e for Slid	ler Bar	0		0 100								
											12		1								
																	Cance	В	ack (	Next	



Now for example as you can see above in figure #8E we have selected the first option, "Total Active Power" from the drop down list. Now we will select either "Absolute" or "Relative" as shown above in figure #8E

BLACK BOX	ServeSensor V4P																	Admin			
NETWORK SERVICES							001		CHOC								<b>C</b> 11	mont Su	etan Ti	mar 7/1 i	0 12-45-24
Summary Map	Picture Lo	a/Soun	dLog	<u> </u>	Se	nsors			Notifi	cation			Setting	15		App	lication	s		Hel	D
				-				_	V	irtual S	Settina	5		-							
Sensors Menu																					
Sensor Ports	Virtual Sensors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Camera Motion Detection		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sound Detector				· ·		÷.		÷.		- C.		- <b>-</b> -		÷.	÷.	÷.		÷.	- 1	÷.	· ·
No Camera Signal Detection		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Virtual Sensors																					
<u>Virtual Sensor Port 3</u>		I	X	I	I	I	1	I	1	I	I	I	I	I	I	I	A.	A.	- X	I.	I
Help		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
This page shows the Remote Sensor ports. Remote Sensor is a visual sensor that reading value from Shell script.		t	1	1	1	1	1	î	1	ĩ	1	1	1	1	1	1	1	ĩ	1	1	1
Shell script must print sensor value to Standard Output.		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	$\overline{n}$	78	79	80
otherwise is determine as SENSOR ERROR.		1	î	1	1	1	1	1	1	I	1	î	1	t	1	1	1	I	1	1	1
									Sensor	Name	Virtua	l Senso	r Port 3								
									Moto	r Tuno	Three	Dhase									
									M	eter ID	00001	1004643	8								
									R	eading	Total	Active F	Power	-							
										Туре	@ Ab	solute	C Relat	ive							
						Value Factor x 0.01															
									Unit Text x1												
							Valu	e Range	o for Slid	lider Bar x 0.01 p 100											
												x 0.0001 Cancel Back Next									1
																	cance		oun	wext	,

Figure #8F

BLACK BOX						Se	rvS	ens	sor \	/4P											Admin
Location: System Location Summary Map	Picture Lo	a / Sound	Log	_	Se	Sansors			Notifi	cation			Setting	s		Appi	Curr	ent Sys s	lem Tim	09 11:31:30 D	
and the second s	Preture Ex	gradan	Log					_	V	irtual S	Setting	5	butting			- the	incution		·		
Sensor & Menu Sensor Ports Sound Detector Vittual Sensor Port 2 Holp This page shows the Remote Sensor horts. Remote Gensor is a visual sensor that reading value from Shell script. Ghell script must print sensor value to Standard Output. Scripts must retum Of succeed	Virtual Sensors	1 21 1 41 1	2 22 1 42 1	3 1 23 1 43 1	4 1 24 1 41 1	5 25 1 45	6 1 26 1 46	7 1 27 1 47 1	8 28 1 48 1	9 1 29 1 49 1	10 Î 30 Î 50 Î	11 1 31 1 51	12 Î 32 Î 52 Î	13 1 33 1 53 1	14 1 34 1 54	15 Î 35 Î 55 Î	16 1 36 1 56	17 1 37 1 57 1	18 I 38 I 58 I	19 1 39 1 59	20 1 40 1 60
otherwise is determine as SENSOR ERROR.		61 Î	62 <b>1</b>	63 Î	64 Î	65 <b>1</b>	66 <b>1</b>	67 Î	68 Î Sensor	69 <b>1</b> Name	70 Î	71 Î	72 1	73 1	74 1	75 <b>1</b>	76 <b>1</b>	77 1	78 <b>1</b>	79 Î	80 <b>1</b>
	Autor Total Active Forver       Meter Type       Meter Type       Reading       Total Active Power       Total Active Power       Value Factor       Value Factor       Value Range for Slider Bar       0       Total Active Power       Cancel       Back												Next	)							

Now you will set your "Value Factor" from the drop down list shown above in figure #8F

Figure #8G

Next you will set your "Unit Text" and the "Value Range" by entering these values into the fields shown above in figure #8G. Then click the "Next" button

BLACK BOX								Ser	vSen	sor	V4P										Admin		
Location: System Location	Distant I															Current System Time: 7/1/09 12:50:00							
Summary Map	Picture Lt	g / Sour	na Log		50	ensors			NUCH	cation		-	Setting	js		Арр	lications	s		He	þ		
									v	irtual :	setting	s											
Sensors Menu	Virtual Sensors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Sensor Ports		$\bigcirc$																			•		
Camera Motion Detection		× <b>1</b> %	¢ <b>Т</b> «	1	A	1	1	1	1	Δ	1	1	1	1	1	1	1	1	- 1	1	A		
Sound Detector		~ ~										~ *		~~				07					
No Camera Signal Detection		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	30	37	38	39	40		
<u>virtual Sensors</u>		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8		
<u>Virtual Sensor Port 3</u>		- <b>-</b> -	-						-										-		-		
Help		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60		
This page shows the Remote Sensor																							
ports. Remote Sensor is a visual sensor		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I		
that reading value from Shell script. Shell script must print sensor value to																							
Standard Output.		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80		
Scripts must return 0 if succeeed otherwise is determine as SENSOR		2	1	8	2	1	1	8	1	2	2	1	8	8	2	8	1	2	1	2	8		
ERROR.																							
						_																	
						Low C	<b>Critical</b>	20 Lov	4 v Warnin	lO g	60 F	l ligh Wa	<b>80</b> Rning	High C	ritical								
			1			Low	Critical	Los	w Warnii	1g	High Wa	irning	High	Critical	É								
					-	20	_	4	0	-	60		80										
								10					1							_			
																ſ	Cance	В	ack	Next			
			_	_		_	_							_	_								

Figure #8H

Next you will set your reading thresholds for your alerts as shown in figure #8H above. Then click the "Next" button to move to the next screen in the wizard

SELACK BOX							Se	ervSe	ensor	· V4P											Ádmin
NETWORK SERVICES																					
Location: System Location	Dicture Lo		od Log	<u> </u>	50	meare			Notif	ication	1		Cotting	10	Ť	ð nu	Lication	rrent Sy	stem III	ne: 7/11 Hol	9 12:51:26
Summary map	FICULTEED	g 7 30ai	na Eog	-		113013			V	intual (	Sotting		Setting	10	_!	npp	ncation	<u>,</u>	1	ПС	,
Sensors Menu										in caraar s	Jetting	-									
Sensor Ports	Virtual Sensors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Camera Motion Detection		$\bigcirc$	$\bigcirc$	8	1	1	8	1	1	1	8	1	1	8	8	1	1	8	1	1	1
Sound Detector		•					a								a				a		
No Camera Signal Detection		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Virtual Sensors																					•
<u>Virtual Sensor Port 3</u>		1	A	A	A	A	A	1	- 1	A	A	1	- 1	A	A	A	- 1	1	A	1	A
Help		41	42	43	44	45	46	47	40	40	60	61	62	63	64	66	56	67	60	60	60
This page about the Demote Concer		41	42	45	44	43	40	47	40	40	50	51	52	35		35	50	57	50	38	00
ports. Remote Sensor is a visual sensor		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
that reading value from Shell script. Shell script must print sensor value to																					
Standard Output.		61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Scripts must return 0 if succeeed otherwise is detemine as SENSOR		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ERROR.																					
								6	Pollina l	nterval	15		15 secs								
								-			100			2							
																	Cancel	) Ba	ck ]	Finish	]

## Figure #81

Now you will set your polling interval as shown above in figure #81 and click "Finish" button to complete the setup of the move to the next screen

	I
Sensor Name Total Active Power	
Source Energy Meter <u>Change Configurations</u>	
Current Reading 19.83 KWh	
Status Normal	
Sensor Currently 📕 Online	
19.83 KWh	
Low Critical 7 19 60 80 High Critical	
Low Warning High Warning	
Low Critical Low Warning High Warning High Critical	
7 19 60 80	
<< Normal Mode	
Rearm 0	
Enable Graph © On C Off	
Popup Windows on Sensor Name	
Sensors URL	
Open link in 🖉 Curent Windows 🤇 New Windows	
Continuous Time for Sensor to be in new Status before accepting new Status	
High Critical 0 0 secs	
High Warning 0 secs	
Sensor Normal 0 secs	
Low Warning 0 secs	
Low Critical 0 secs	
Sensor Error 0 0 secs	
Enable Calendar C on C Off	
Save	

Figure #8I

After clicking the "Finish" button, this screen above in figure #81 will be displayed where you can adjust all your thresholds, enable your graphing and setting up your false warning