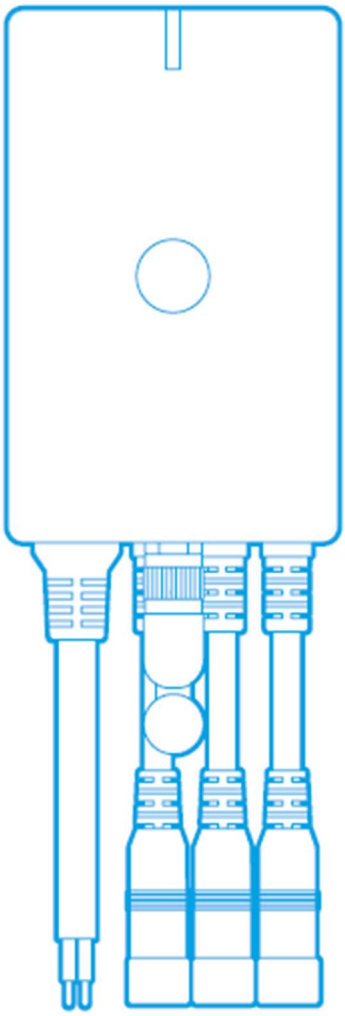
Home Energy Meter 8



REVISION RECORD		
Version	Date	Brief description of changes
1.0	2024.04.24	First revision.

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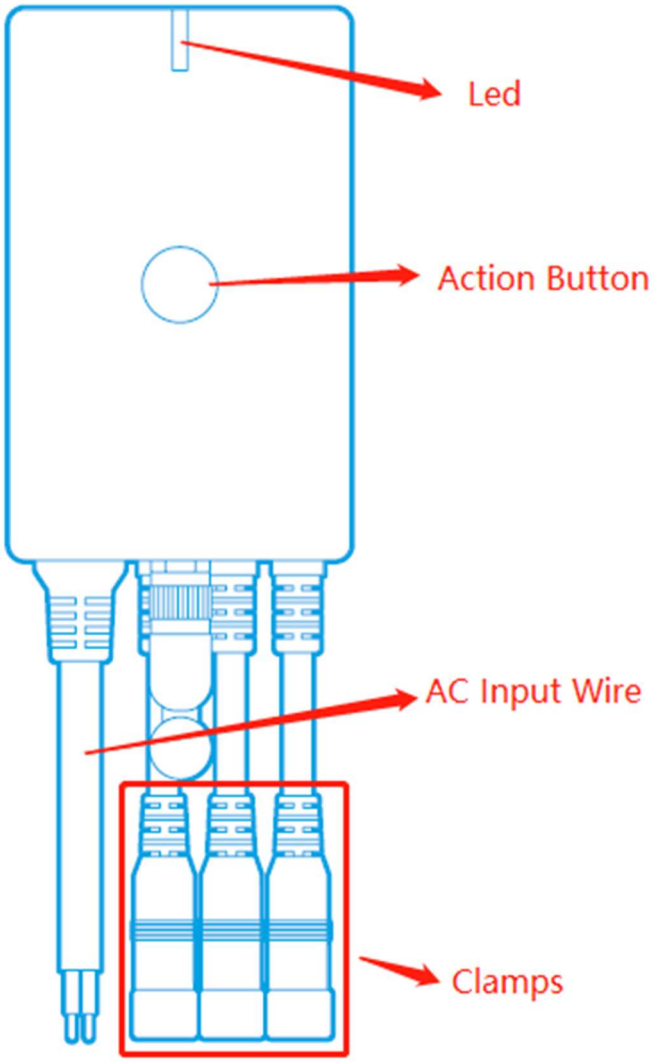
1 OVERVIEW

Aeotec Home Energy Meter 8 is a energy meter for the entire home. It can wirelessly report instantaneous Power, KWH, Voltage and Amperage measurements to Z-Wave® gateway/controller. It can send Z-Wave REPORTS at any time when it receives Z-Wave Get Commands.
The HEM can be setup to send automatic reports to any associated nodes in association group 1 at an interval time. It can be included and operated in any Z-Wave network with other Z-Wave/ Z-Wave Plus® certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network. The device supports the Z-Wave Security S2 framework with authenticated and unauthenticated network keys. Please follow the instructions on the central controller when including. The device also supports SmartStart. It also supports the Over The Air (OTA) feature for the product's firmware upgrade. As soon as the HEM is removed from a Z-Wave network it will be reset to default factory settings.



Terminology	Description
Action Button	Used for networking ,resetting and protecte the device.
Led (blue)	Used for indicating the current state of the product.
Clamps	get the measurement of Watt (W or kVar), KWH or kVarh, Voltage and Current
AC Input Wire	Input power

2 SPECIFICATIONS

2.1 Structural

Parameter	Value
Product Identifier	ZW046
Dimensions	~~28x95x35mm~~
Weight	~~20g~~
Color	White
Usage	For indoor use.
Operating Temperature	32~104°F (0~40°C)
Relative Humidity	8%~80%

2.2 Hardware

Parameter	Value
Z-Wave Module	EFR32ZG23
Z-Wave TX Power	Max: 20dBm
Z-Wave Antenna Distance	40m (Indoor) /150m (Outdoor)
Indicator Light Color	blue
Buttons	Action Button x 1
Input Voltage	230V~50Hz
Working Current	30mA
Standby Current	5mA
Maximum Standby Power Consumption	1.1W

2.3 Software

Parameter	Value
Wireless Technology	Z-Wave
Certification Type	Z-Wave Plus v2 Certification
Z-Wave SDK Version	7.20.2
Z-Wave Library Type	Enhanced 232 Slave
Z-Wave Role Type	Always On Slave [0x05]
Generic Product Type	GENERIC_TYPE_METER [0x31]
Specific Product Type	SPECIFIC_TYPE_NOT_USED [0x00]
Security Class	Non-Security, S0, S2 Unauthenticated, and S2 Authenticated
SmartStart Compatible	Support. After powering on, SmartStart is auto activated.
Over The Air (OTA)	Support. Firmware can be updated via RF.
Multi Channel Product	Yes
Association	Support. Refer to Section 4.8 Association Group Info.
Factory Reset	Support. Refer to Section 3.8 How to factory reset.
Power-down Memory	Support. All command settings will stay unchanged even power down.
Meter State Report	Support. Send out meter report via Group 1.
Control other product	No

3 QUICK START

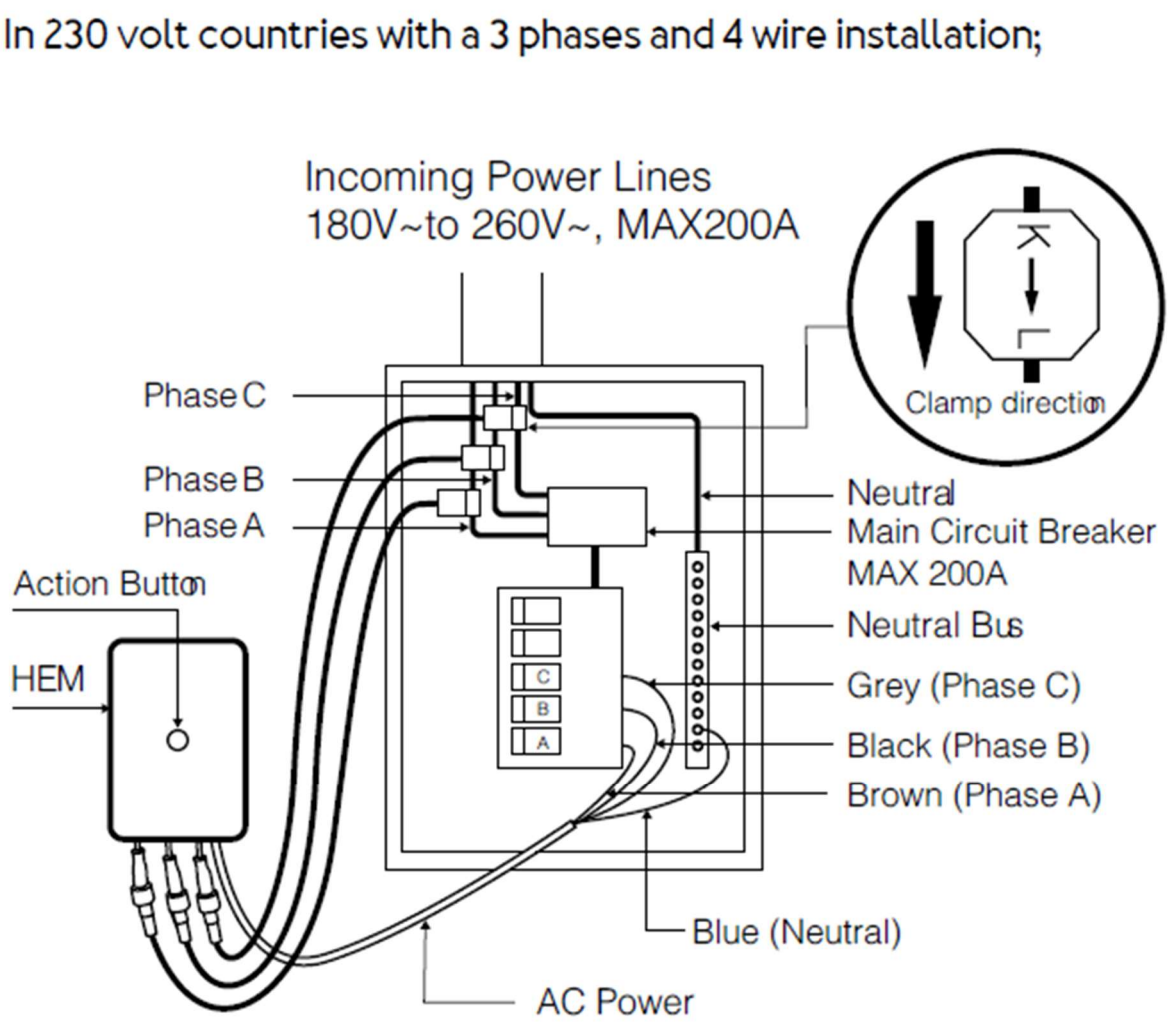
3.1 Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law. The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material. Use this equipment only for its intended purpose. Follow the disposal instructions. Do not dispose of electronic equipment in a fire or near open heat sources.

3.2 Optimally fixing the main body

It is now time to fix HEM's main body onto a surface. Within each meter, there is a low-frequency radio antenna for wireless communication. As such, thick concrete walls, metals, or motor devices can negatively impact the wireless performance of HEM and should be avoided. It is recommended to have the main body installed outside of the circuit box if the home's circuit box is made of a metal, since placing the meter inside a metal circuit box could degrade the quality of the radio signal and negatively impact its wireless range. As such, HEM's main body is weatherised to the IP44 standard making it resistant to rain and snow when installed vertically.

3.3 How to install the product



3.4 How to add the product

The following will step you through adding the product to your Z-Wave network.

1. Fix Back-Mount Plate to the selected position with the provided screws. The plate should be installed vertically to make sure the connected cables naturally hanging and to fully ensure that the IP44 weatherized rating applies.
2. Set your Z-Wave gateway into its 'add device' mode in order to connect Home Energy Meter to your Z-Wave system. Refer to the gateway's manual if you are unsure of how to perform this step.
3. Press Action Button on the back of main body; its LED will flash blue rapidly to indicate it has entered pair mode.
4. When Home Energy Meter successfully joins your Z-Wave network its LED will flash blue for several seconds and then turn solid blue. Should the LED keep blinking blue, it has been unable to join your Z-Wave network; repeat the above steps and please contact us for further support if needed.
5. Attach the main body to Back-Mount Plate.

If your Z-Wave gateway supports SmartStart: scan the QR code on Home Energy Meter using the gateway's app. Your sensor will join your Z-Wave network automatically.

3.5 How to remove the product

1. Set your Z-Wave gateway into its 'remove device' mode.
2. Press Action Button on the back of main body; its LED will flash blue rapidly to indicate it has entered remove mode.
3. When Home Energy Meter successfully remove, its LED will flash blue.

3.6 About SmartStart

SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity. You can find the QR code on the back of the product, like this:

PIN: 05065

The DSK information will be like this: **05065**-41336-16018-47313-50335-02212-29424-38760

3.7 About Product

This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All mains operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

3.8 How to factory reset

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

Make sure the product is powered. To complete the reset process manually, press and hold the Action Button for at least 10s. The Indicator Light will become flash, which indicates the reset operation is successful. Otherwise, please try again. Contact us for further support if needed.

4 SOFTWARE FUNCTION DEFINITION

4.1 User Behavior Interaction

User behavior	Out of the Z-Wave network	In the Z-Wave network
Power OFF	Cut the power.	Cut the power.
Power ON	**Send Inclusion Requests for SmartStart Learn Mode.** **LED will blink slowly**	LED On
Click Action Button once	**1.Send Node Info for Adding.** LED will blink blue for 30s until it is added into the network. If Adding succeeds, LED will light up blue If Adding fails, LED will turn flash. Device will activate SmartStart Learn Mode again. **2.Exit Classic Inclusion Learn Mode:** If action button is clicked again during the Classic Inclusion Learn Mode, the Classic Learn Mode will exit. LED will turn flash. Device will activate SmartStart Learn Mode again.	**1. Send Node Info for Removing.** LED will blink blue for 30 seconds until it is removeed from the network. If Removing succeeds, LED will light up blue If Removing fails, LED will turn flash. **2. Exit Classic exclusion Learn Mode:** If action button is clicked again during the Classic exclusion Learn Mode, the Classic Learn Mode will exit. LED will on.
Click Action Button twice	NC	Send all meter report to association group 1
Press and hold tamper switch for 10 seconds	**Factory Reset.** Press and hold the Action Button for 10 seconds. If the LED starts slow blinking, which indicates the reset is success	**Factory Reset.** Press and hold the Action Button for 10 seconds. If the LED starts slow blinking, which indicates the reset is success

4.2 Supported Command Classes

Root device:

Command Class	Version	Not added	Non-secure added	Securely added	
				Non-secure	Secure S0/S2
ZWAVEPLUS_INFO	2	Support	Support	Support	
METER	6	Support	Support		Support
MULTI_CHANNEL	4	Support	Support		Support
CONFIGURATION	4	Support	Support		Support
APPLICATION_STATUS	1	Support	Support	Support	
ASSOCIATION	2	Support	Support		Support
MULTI_CHANNEL_ASSOCIATION	3	Support	Support		Support
ASSOCIATION_GRP_INFO	3	Support	Support		Support
TRANSPORT_SERVICE	2	Support	Support	Support	
VERSION	3	Support	Support		Support
MANUFACTURER_SPECIFIC	2	Support	Support		Support
DEVICE_RESET_LOCALLY	1	Support	Support		Support
INDICATOR	3	Support	Support		Support
POWERLEVEL	1	Support	Support		Support
SECURITY	1	Support	Support	Support	
SECURITY_2	1	Support	Support	Support	
SUPERVISION	1	Support	Support	Support	
FIRMWARE_UPDATE_MD	5	Support	Support		Support

Endpoint 1/2/3/4/5/6/7/8:

Command Class	Version	Not added	Non-secure added	Securely added	
				Non-secure	Secure
ZWAVEPLUS_INFO	2	Support	Support	Support	
METER	6	Support	Support		Support
ASSOCIATION	2	Support	Support		Support
MULTI_CHANNEL_ASSOCIATION	3	Support	Support		Support
ASSOCIATION_GRP_INFO	3	Support	Support		Support
SECURITY	1	Support	Support	Support	
SECURITY_2	1	Support	Support	Support	
SUPERVISION	1	Support	Support	Support	

4.3 Multi Channel CC And Meter CC

The Multi Channel Command supports 8 end points, which corresponding to Phase A/B/C.
Endpoint 1= Phase A Import
Endpoint 2= Phase A Export
Endpoint 3= Phase B Import
Endpoint 4= Phase B Export
Endpoint 5= Phase C Import
Endpoint 6= Phase C Export
Endpoint 7= algebraic sum of import current of all phases
Endpoint 8= algebraic sum of export current of all phases
The Multi Channel CC encapsulates Meter Command Class, which can get the measurement of Watt (W or kVar), KWH or kVarh, Voltage and Current , kVah and factor from the Phases.

Meter	Function								
Scale	Root device	Enpoint 1	Enpoint 2	Enpoint 3	Enpoint 4	Enpoint 5	Enpoint 6	Enpoint 7	Enpoint 8
V	1.Average voltage of all phases are normal 2.Abnormal voltage when any phase is abnormal (Less than 90V or greater than 440V)	Voltage of phase A	Voltage of phase A	Voltage of phase B	Voltage of phase B	Voltage of phase C	Voltage of phase C	Same as the root device	Same as the root device
A	Import type: algebraic sum of import current of all phases Export type: algebraic sum of export current of all phases	Import current of phase A	export current of phase A	Import current of phase B	export current of phase B	Import current of phase C	export current of phase C	algebraic sum of import current of all phases	algebraic sum of export current of all phases
W	Import type:	Import power	export power	Import power	export power	Import power	export power	algebraic sum of	algebraic sum of

	algebraic sum of import power of all phases Export type: algebraic sum of export power of all phases	of phase A	of phase A	of phase B	of phase B	of phase C	of phase C	import power of all phases	export power of all phases
KWh	Import type: algebraic sum of import energy of all phases Export type: algebraic sum of export energy of all phases	Import energy of phase A	export energy of phase A	Import energy of phase B	export energy of phase B	Import energy of phase C	export energy of phase C	algebraic sum of import energy of all phases	algebraic sum of export energy of all phases
KVar	Import type: algebraic sum of import Kvar of all phases Export type: algebraic sum of export Kvar of all phases	import kVar of phase A	export kVar of phase A	import kVar of phase B	export kVar of phase B	import kVar of phase C	export kVar of phase C	algebraic sum of import Kvar of all phases	algebraic sum of export Kvar of all phases
KVarh	Import type: algebraic sum of import Kvarh of all phases Export type: algebraic sum of export Kvarh of all phases	import Kvarh of phase A	export Kvarh of phase A	import Kvarh of phase B	export Kvarh of phase B	import Kvarh of phase C	export Kvarh of phase C	algebraic sum of import Kvarh of all phases	algebraic sum of export Kvarh of all phases
kVAh	Import type: algebraic sum of import kVAh of all phases Export type: algebraic sum of export kVAh of all phases	import kVah of phase A	export kVah of phase A	import kVah of phase B	export kVah of phase B	import kVah of phase C	export kVah of phase C	algebraic sum of import kVAh of all phases	algebraic sum of export kVAh of all phases
Power Factor	Import type:	import factor of	export factor of	import factor	export factor	import factor	export factor	Import Power /	Export Power /

	Import Power / (Import Current * Voltage) Export type: Export Power / (Export Current * Voltage)	phase A	phase A	of phase B	of phase B	of phase C	of phase C	(Import Current * Voltage)	(Export Current * Voltage)

4.4 Basic Command Class mapping

Basic Command Class is not mapped to any of the supported command classes.

4.5 Z-Wave Plus Info

Parameter	Value
Z-Wave Plus Version	0x02
Role Type	0x05 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_ON)
Node Type	0x00 [ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x1000 (ICON_TYPE_GENERIC_SUB_ENERGY_METER)
User Icon Type	0x1000 (ICON_TYPE_GENERIC_SUB_ENERGY_METER)

4.6 Manufacturer Specific

Parameter	Value
Manufacturer ID 1	0x03
Manufacturer ID 2	0x71
Product Type ID 1	0x00 [EU], 0x01 [US], 0x02 [AU]]
Product Type ID 2	0x03 [Power/Energy Controller]
Product ID 1	0x00
Product ID 2	0x2E (46)

4.7 Version

Parameter	Value
Z-Wave Protocol Library Type	0x03
Z-Wave Protocol Version	0x07
Z-Wave Protocol Sub Version	0x14
Firmware 0 Version	0x01 [Z-Wave Chip Firmware Version]
Firmware 0 Sub Version	0x00 [Z-Wave Chip Firmware Sub Version]
Hardware Version	0x2E (46)
Number of firmware targets	0x00

4.8 Association Group Info

Root ID	Name	Node count	Profile	Function
1	Lifeline	5	General: Lifeline (0x0001)	**1. Product Reset Locally Notification:** Issued when Factory Reset is performed. **2. Meter Report:** Root device / Endpoint Meter Report

Mark: Node does not support sending indicator reports through associated groups.

Endpoint1:

ID	Name	Node count	Profile	Function
1	Phase A consumption via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 5/13) 2. when time report group performed (configured via parameter 101/102/103) Issued the Meter Report via the Root device Lifeline group

Endpoint2:

ID	Name	Node count	Profile	Function
1	Phase A production via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 9/17) 2. when time report group performed (configured via parameter 104/105/106) Issued the Meter Report via the Root device Lifeline group

Endpoint3:

ID	Name	Node count	Profile	Function
1	Phase B consumption via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 6/14) 2. when time report group performed (configured via parameter 101/102/103) Issued the Meter Report via the Root device Lifeline group

Endpoint4:

ID	Name	Node count	Profile	Function
1	Phase B production via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 10/18) 2. when time report group performed (configured via parameter 104/105/106) Issued the Meter Report via the Root device Lifeline group

Endpoint5:

ID	Name	Node count	Profile	Function
1	Phase C consumption via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 7/15) 2. when time report group performed (configured via parameter 101/102/103) Issued the Meter Report via the Root device Lifeline group

Endpoint6:

ID	Name	Node count	Profile	Function
1	Phase C production via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 11/19) 2. when time report group performed (configured via parameter 104/105/106) Issued the Meter Report via the Root device Lifeline

				group

Endpoint7:

ID	Name	Node count	Profile	Function
1	Total consumption via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 4/12) 2. when time report group performed (configured via parameter 101/102/103) Issued the Meter Report via the Root device Lifeline group

Endpoint8:

ID	Name	Node count	Profile	Function
1	Total production via Lifeline	0	Meter:Electric (0x3201)	1. when the power exceeds the threshold or percentage (configured via parameter 8/16) 2. when time report group performed (configured via parameter 104/105/106) Issued the Meter Report via the Root device Lifeline group

4.9 Indicator

Indicator ID		Property ID	
Node Identify (blue Led)	0x50	On Off Period	0x03
		On Off Cycles	0x04
		On time within an On/Off period	0x05

4.10 Meter CC

Report consumed voltage：A1 64 ……

Report produced voltage：C1 64 ……

Report consumed current： A1 6C ……

Report produced current： C1 6C ……

Report consumed power：21 74 ……

Report produced power： 41 74 ……

Report consumed energy：21 64 ……

Report produced energy： 41 64 ……

Report consumed kvar：A1 7C ……00

Report produced kvar： C1 7C ……00

Report consumed kvarh：A1 7C ……01

Report produced kvarh： C1 7C ……01

Report consumed kVAh：21 6C ……

Report produced kVAh： 41 6C ……

Report consumed factor：A1 74 ……

Report produced factor： C1 74 ……

Mark:

Meter Type: Electric meter

Rate Type: Root device supports Import and Export, Endpoint 1/3/5/7 supports Import, Endpoint 2/4/6/8 supports Import.

Scale: kWh, kVAh, W, V, A, Factor, kVar, kVarh

4.11 Configuration

Parameter	0x03 (3)			
Name	Threshold Check Enable/Disable			
Info	Enable/Disable threshold reporting			
Properties	Size	1	Min Value	0
	Format	Enumerated	Max Value	1
	Read-only	False	Default Value	0x01
	Altering capabilities	False	Advanced	False
Description	Enable selective reporting only when power change reaches a certain threshold or percentage set in 4-19 below. This is used to reduce network traffic.			
	Value	Function		
	0	Disable		
	1	Enable		

Parameter	0x04 (4)			
Name	Import watt threshold (Total)			
Info	Import watt threshold (Total)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in import wattage to induce an automatic report (Whole HEM).			
	Value	Function		
	0-60000	W		

Parameter	0x05 (5)			
Name	Import watt threshold (Phase A)			
Info	Import watt threshold (Phase A)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in import wattage to induce an automatic report (Phase A).			
	Value	Function		
	0-60000	W		

Parameter	0x06 (6)

Name	Import watt threshold (Phase B)			
Info	Import watt threshold (Phase B)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in import wattage to induce an automatic report (Phase B).			
	Value	Function		
	0-60000	W		

Parameter	0x07 (7)			
Name	Import watt threshold (Phase C)			
Info	Import watt threshold (Phase C)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in import wattage to induce an automatic report (Phase C).			
	Value	Function		
	0-60000	W		

Parameter	0x08 (8)			
Name	Export watt threshold(Total)			
Info	Export watt threshold(Total)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in export wattage to induce an automatic report (Whole HEM).			
	Value	Function		
	0-60000	W		

Parameter	0x09 (9)			
Name	Export watt threshold (Phase A)			
Info	Export watt threshold (Phase A)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in export wattage to induce an automatic report (Phase A).			
	Value	Function		
	0-60000	W		

Parameter	0x0A (10)

Name	Export watt threshold (Phase B)			
Info	Export watt threshold (Phase B)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in export wattage to induce an automatic report (Phase B).			
	Value	Function		
	0-60000	W		

Parameter	0x0B (11)			
Name	Export watt threshold (Phase C)			
Info	Export watt threshold (Phase C)			
Properties	Size	2	Min Value	5
	Format	Unsigned Integer	Max Value	60000
	Read-only	False	Default Value	50
	Altering capabilities	False	Advanced	False
Description	Threshold change in export wattage to induce an automatic report (Phase C).			
	Value	Function		
	0-60000	W		

Parameter	0x0C(12)			
Name	Import watt percent threshold (Total)			
Info	Import watt percent threshold (Total)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in import wattage to induce an automatic report (Whole HEM).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x0D(13)			
Name	Import watt percent threshold (Phase A)			
Info	Import watt percent threshold (Phase A)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in import wattage to induce an automatic report (Phase A).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x0E(14)

Name	Import watt percent threshold (Phase B)			
Info	Import watt percent threshold (Phase B)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in import wattage to induce an automatic report (Phase B).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x0F(15)			
Name	Import watt percent threshold (Phase C)			
Info	Import watt percent threshold (Phase C)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in import wattage to induce an automatic report (Phase C).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x10(16)			
Name	Export watt percent threshold (Total)			
Info	Export watt percent threshold (Total)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in export wattage to induce an automatic report (Whole HEM).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x11(17)			
Name	Export watt percent threshold (Phase A)			
Info	Export watt percent threshold (Phase A)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in export wattage to induce an automatic report (Phase A).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x12(18)

Name	Export watt percent threshold (Phase B)			
Info	Export watt percent threshold (Phase B)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in export wattage to induce an automatic report (Phase B).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x13(19)			
Name	Export watt percent threshold (Phase C)			
Info	Export watt percent threshold (Phase C)			
Properties	Size	1	Min Value	1
	Format	Unsigned Integer	Max Value	100
	Read-only	False	Default Value	20
	Altering capabilities	False	Advanced	False
Description	Percentage change in export wattage to induce an automatic report (Phase C).			
	Value	Function		
	0-100	Unit: %		

Parameter	0x64 (100)			
Name	Set 101-106 to default			
Info	Set 101-106 to default			
Properties	Size	1	Min Value	0
	Format	Enumerated	Max Value	1
	Read-only	False	Default Value	0
	Altering capabilities	False	Advanced	False
Description	Set 101-106 to default.			

Parameter	0x65 (101)			
Name	Automatic Report list 1 (Import)			
Info	Checklist 1 for automatic timed report			
Properties	Size	4	Min Value	0
	Format	Enumerated	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	0x03030303
	Altering capabilities	False	Advanced	False
Description	Configure which report needs to be sent in Report group 1 (See flags in import table below).			

Parameter	0x66 (102)			
Name	Automatic Report list 2 (Import)			
Info	Checklist 2 for automatic timed report			
Properties	Size	4	Min Value	0
	Format	Enumerated	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	0x0C0C0C0C

	Altering capabilities	False	Advanced	False
Description	Configure which report needs to be sent in Report group 2 (See flags in import table below).			

Parameter	0x67 (103)			
Name	Automatic Report list 3 (Import)			
Info	Checklist 3 for automatic timed report			
Properties	Size	4	Min Value	0
	Format	Enumerated	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	0xF0F0F0F0
	Altering capabilities	False	Advanced	False
Description	Configure which report needs to be sent in Report group 3 (See flags in import table below).			

Parameter	0x68 (104)			
Name	Automatic Report list 1 (Export)			
Info	Checklist 1 for automatic timed report			
Properties	Size	4	Min Value	0
	Format	Enumerated	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	0x03030303
	Altering capabilities	False	Advanced	False
Description	Configure which report needs to be sent in Report group 1 (See flags in export table below).			

Parameter	0x69 (105)			
Name	Automatic Report list 2(Export)			
Info	Checklist 2 for automatic timed report			
Properties	Size	4	Min Value	0
	Format	Enumerated	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	0x0C0C0C0C
	Altering capabilities	False	Advanced	False
Description	Configure which report needs to be sent in Report group 2 (See flags in export table below).			

Parameter	0x6A (106)			
Name	Automatic Report list 3 (Export)			
Info	Checklist 3 for automatic timed report			
Properties	Size	4	Min Value	0
	Format	Enumerated	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	0xF0F0F0F0
	Altering capabilities	False	Advanced	False
Description	Configure which report needs to be sent in Report group 3 (See flags in export table below).			

Parameter	0x6E (110)			
Name	Set 111-116 to default			
Info	Set 111-116 to default			
Properties	Size	1	Min Value	0
	Format	Enumerated	Max Value	1

	Read-only	False	Default Value	0
	Altering capabilities	False	Advanced	False
Description	Set 111-116 to default.			

Parameter	0x6F (111)			
Name	Automatic list 1 Interval Time (Import)			
Info	Timing detection time of Checklist 1			
Properties	Size	4	Min Value	10
	Format	Unsigned Integer	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	3600
	Altering capabilities	False	Advanced	False
Description	Set the interval time of sending report in Report group 1			

Parameter	0x70 (112)			
Name	Automatic list 2 Interval Time (Import)			
Info	Timing detection time of Checklist 2			
Properties	Size	4	Min Value	10
	Format	Unsigned Integer	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	7200
	Altering capabilities	False	Advanced	False
Description	Set the interval time of sending report in Report group 2			

Parameter	0x71 (113)			
Name	Automatic list 3 Interval Time (Import)			
Info	Timing detection time of Checklist 3			
Properties	Size	4	Min Value	10
	Format	Unsigned Integer	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	7200
	Altering capabilities	False	Advanced	False
Description	Set the interval time of sending report in Report group 3			

Parameter	0x72 (114)			
Name	Automatic list 1 Interval Time (Export)			
Info	Timing detection time of Checklist 1			
Properties	Size	4	Min Value	10
	Format	Unsigned Integer	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	3600
	Altering capabilities	False	Advanced	False
Description	Set the interval time of sending report in Report group 1			

Parameter	0x73 (115)			
Name	Automatic list 2 Interval Time (Export)			
Info	Timing detection time of Checklist 2			
Properties	Size	4	Min Value	10
	Format	Unsigned Integer	Max Value	0xFFFFFFFF

	Read-only	False	Default Value	7200
	Altering capabilities	False	Advanced	False
Description	Set the interval time of sending report in Report group 2			

Parameter	0x74 (116)			
Name	Automatic list 3 Interval Time (Export)			
Info	Timing detection time of Checklist 3			
Properties	Size	4	Min Value	10
	Format	Unsigned Integer	Max Value	0xFFFFFFFF
	Read-only	False	Default Value	7200
	Altering capabilities	False	Advanced	False
Description	Set the interval time of sending report in Report group 3			

Parameter	0xFC (252)			
Name	Enable/disable to lock configuration setting			
Info	Enable/disable to lock configuration setting			
Properties	Size	1	Min Value	0
	Format	Unsigned Integer	Max Value	1
	Read-only	False	Default Value	0
	Altering capabilities	False	Advanced	False
Description	Enable/disable to lock configuration parameters			

Value	Function
0	Disable
1	Enable.

Configuration Values for parameter 101-103: (Enpoint 1, Enpoint 3, Enpoint 5, Enpoint 7)

	7	6	5	4	3	2	1	0
Configuration Value 1(MSB)	import factor of phase A (send through endpoint 1)	import kVAh of phase A (send through endpoint 1)	import kVar of phase A (send through endpoint 1)	import kVarh of phase A (send through endpoint 1)	import current of phase A (send through endpoint 1)	import voltage of phase A (send through endpoint 1)	import watt of phase A (send through endpoint 1)	import kwh of phase A (send through endpoint 1)
Configuration Value 2	import factor of phase B (send through endpoint 3)	import kVAh of phase B (send through endpoint 3)	import kVar of phase B (send through endpoint 3)	import kVarh of phase A (send through endpoint 3)	import current of phase B (send through endpoint 3)	import voltage of phase B (send through endpoint 3)	import watt of phase B (send through endpoint 3)	import kwh of phase B (send through endpoint 3)
Configuration Value 3	import factor of phase C (send through endpoint 5)	import kVAh of phase C (send through endpoint 5)	import kVar of phase C (send through endpoint 5)	import kVarh of phase C (send through endpoint 5)	import current of phase C (send through endpoint 5)	import voltage of phase C (send through endpoint 5)	import watt of phase C (send through endpoint 5)	import kwh of phase C (send through endpoint 5)
Configuration	import	import kVah	import kVar	import	import	import	import watt	import kwh

Value 4(LSB)	factor of tatal (send through endpoint 7)	of tatal (send through endpoint 7)	of tatal (send through endpoint 7)	kVarh of tatal (send through endpoint 7)	current of tatal (send through endpoint 7)	voltage of tatal (send through endpoint 7)	of tatal (send through endpoint 7)	of tatal (send through endpoint 7)

Configuration Values for parameter 104-106: (Enpoint 2, Enpoint 4, Enpoint 6, Enpoint 8)

	7	6	5	4	3	2	1	0
Configuration Value 1(MSB)	export factor of phase A (send through endpoint 2)	export kVAh of phase A (send through endpoint 2)	export kVar of phase A (send through endpoint 2)	export kVarh of phase A (send through endpoint 2)	export current of phase A (send through endpoint 2)	export voltage of phase A (send through endpoint 2)	export watt of phase A (send through endpoint 2)	export kwh of phase A (send through endpoint 2)
Configuration Value 2	export factor of phase B (send through endpoint 4)	export kVAh of phase B (send through endpoint 4)	im export port kVar of phase B (send through endpoint 4)	export kVarh of phase A (send through endpoint 4)	export current of phase B (send through endpoint 4)	export voltage of phase B (send through endpoint 4)	export watt of phase B (send through endpoint 4)	export kwh of phase B (send through endpoint 4)
Configuration Value 3	export factor of phase C (send through endpoint 6)	export kVAh of phase C (send through endpoint 6)	export kVar of phase C (send through endpoint 6)	export kVarh of phase C (send through endpoint 6)	export current of phase C (send through endpoint 6)	export voltage of phase C (send through endpoint 6)	export watt of phase C (send through endpoint 6)	export kwh of phase C (send through endpoint 6)
Configuration Value 4(LSB)	export factor of tatal (send through endpoint 8)	export kVah of tatal (send through endpoint 8)	export kVar of tatal (send through endpoint 8)	export kVarh of tatal (send through endpoint 8)	export current of tatal (send through endpoint 8)	export voltage of tatal (send through endpoint 8)	export watt of tatal (send through endpoint 8)	export kwh of tatal (send through endpoint 8)

Mark:
When sending to the aggregation point, add sending to the root device.