CHERUBINI
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META
Energy Driven Switch-C 7

Energy meter with relay   **EN**

CE   INSTRUCTIONS

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ENGLISH

EU declaration of conformity

CHERUBINI S.p.A. declares that the product is in conformity with the relevant Union harmonisation legislation: Directive 2014/53/EU, Directive 2011/65/EU.
The full text of the EU declaration of conformity is available upon request at the following website: www.cherubini.it.

Failure to comply with these instructions annuls CHERUBINI's responsibilities and guarantee.

The crossed-out wheelie bin symbol indicates that the product must be collected separately from other waste at the end of its useful life. Therefore, users should deliver this product to appropriate waste collection points or return it to their dealers at the end of its service life. See your local authority's regulations. Adequate waste sorting for subsequent processing and environmentally compatible disposal helps to avoid possible negative effects on the environment and public health and promotes reuse and/or recycling of the materials used to make the equipment.

DEVICE DESCRIPTION

META Energy Driven Switch C 7 is a device designed to monitor all parameters, usage, faults and overloads of your electrical system. Unlike ordinary energy meters, it is a bi-directional meter capable of measuring both the consumed and produced power, equipped with a relay that can be activated to initiate specific scenarios in relation to detected power levels.

The device is equipped with an external current transformer and can measure powers over 10 KW.

- **Active Energy-saving management**
  Automatically connects and disconnects a specific load if the established threshold limit is exceeded, or supplies the required power, momentarily excluding non-priority loads.
- **Management and prevention of electrical faults**
  Identifies malfunctions based on irregular consumptions and to the maximum time of activity.
- **Electrical overload management**
  Notifies or disconnects non-priority loads in the eventuality of system overloads.

META Energy Driven Switch C 7 boasts the **lowest energy consumption on the market**.

Similarly to the other Smart Serie 7 devices, it can be fully integrated into pre-existing systems and configured in full integration with the Z-Wave™ home automation ecosystem.

At the same time, it is completely configurable so that it can adapt to the most varied needs while also being ready to be used without needing additional configurations in order to operate.

The device is equipped with contact protection technology (Zero Crossing) which reduces the electrical stress on the relay contacts and ensures a longer life. The open/closed switching of the device always occur when the instantaneous value of voltage is 0.

It operates in any Z-Wave™ network with other Z-Wave™/Z-Wave Plus™ certified devices and controllers from any other manufacturer. As a constantly powered node, the device will act as repeater regardless of the vendor in order to increase the reliability of the network.

Integrated Button

Integrated Button	1 or 3 clicks to enter in Learn Mode
	6 clicks to reset the system to manufacturer's settings
	2 clicks to enter in setup mode
Power Supply	1 – Null
	6 – Line
Output	5 – Line signal referred to Null
Current transformer	2, 3 – Connection terminals for external Current Transformer
Terminal not used	4

TECHNICAL SPECIFICATIONS

Power supply	110 - 230 VAC ± 10% 50/60 Hz
Maximum Load on Relay	3750 VA – 250 VAC – 15 A
System temperature limitation	105 °C
Work temperature	From -10° to 40° C
Power consumption	< 260 mW in standby
	< 480 mW with working load
Radio frequency	868,4 MHz
Protection system	S2 Security
Maximum distance	Up to 100 m outdoor
	Up to 40 m indoor
Dimensions	37x37x17 mm
Actuator element	Relay
Compliance	CE, RoHs
Electrical IP Rating	IP20

METER SPECIFICATIONS

Parameters	Voltage RMS, Current RMS, Active Power, Power Factor, Energy
Meter Range	Voltage RMS: 250 V
	Current RMS: 45 A
	Active Power: ± 11250 W
	Power Factor: ±1.00
	Energy: 2.000.000 kWh
Resolution	Voltage RMS: 0.1 V
	Current RMS: 0.01 A
	Active Power: 0.01 W
	Power Factor: 0.01
	Energy: 0.001 kWh
Maximum Error (Within the dynamic range)	Voltage (dynamic range 20:1): ±0.95%
	Current (dynamic range 1000:1): ±2.9%
	Active Power (dynamic range 4000:1):
	• PF=1: ±4%
	• PF=0.8: ±5.5%

SAFETY INFORMATION

INFO: The device is designed to be installed in flush mounting junction boxes, close to the loads to be controlled, at the point of entry of the electric network sections to be monitored.

WARNING: The device must be installed by electricians qualified to operate on electrical systems in compliance with safety requirements set out by current regulations.

DANGER: The device must be connected to 230 VAC, before carrying out any operation, please make sure that the power main switch is in OFF position.

DANGER: Any procedure requiring the use of the Integrated Button is related only to the installation phase and is to be considered a service procedure that must be performed by qualified personnel. This operation must be performed with all necessary precautions for operating in areas with a single level of insulation.

WARNING: Do not connect loads exceeding the maximum power load permitted by the relay contacts.

WARNING: All connections must be performed according to the electrical diagrams provided.

WARNING: The device must be installed in norm-compliant systems suitably protected from overloads and short circuits.

ELECTRICAL CONNECTIONS DIAGRAM

META Energy Driven Switch C 7 must be supplied by phase and neutral. Connections must be made according to the diagram below.
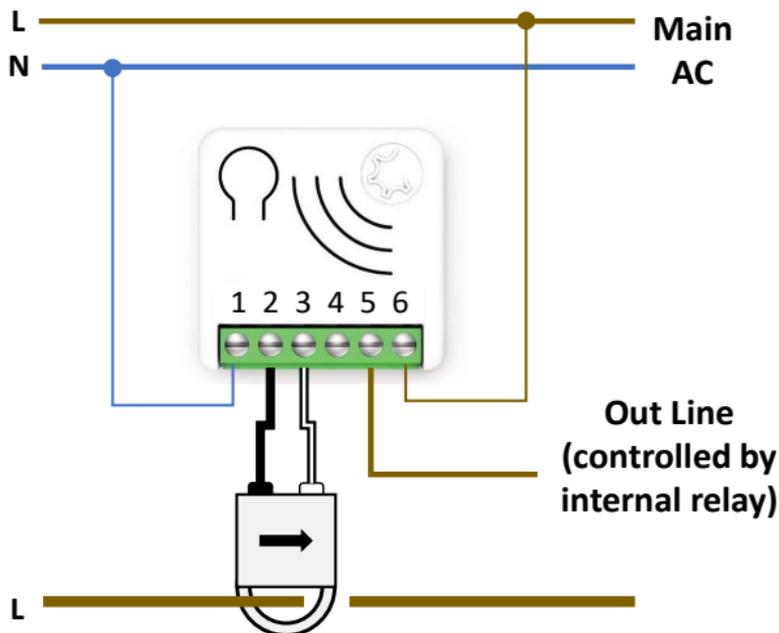
ℹ️ The current transformer must be clamped on the phase wire leading to the load and adjusted to have the arrow pointing towards the load to be monitored.

Power Supply	1– Null, 6 – Line
Output Loads	5 – Line signal referred to Null
External current transformer	2 – Black terminal, 3 – White terminal
Terminal not used	4

DEVICE INSTALLATION

1) Make sure the main switch is set to the OFF position
2) Connect the device based on the diagrams provided above
3) Turn the main switch to the ON position
4) Include the device into the Z-Wave™ network

TIP: The antenna must not be shortened, removed or modified. To ensure maximum efficiency, it must be installed as shown. Large size metal equipment near the antenna can negatively affect reception. Each device is a node in a mesh network. If there are metal obstacles, the obstacle can often be overcome with a further triangulation node.

LED STATUS INDICATOR

The system includes an RGB LED that shows the device's status during installation:

Solid RED: the device is not included in any network

Solid BLUE: the device is Offline setup mode

4 GREEN blinks then OFF: the device has been just added to a Z-Wave™ network in S2 Authenticate Mode

4 BLUE blinks then OFF: the device has been just added to a Z-Wave™ network in S2 Unauthenticated Mode

4 RED blinks then OFF: the device has been just added to a Z-Wave™ network without security

Sequence of GREEN-BLUE Learn Mode for inclusion

Sequence of RED-BLUE Learn Mode for exclusion

i The *Learn Mode status* is activated or deactivated by a single or triple click on the integrated button.

ADD/REMOVE THE DEVICE INTO A Z-WAVE™ NETWORK *(classic)*

Standard Inclusion (add)

All META Serie 7 devices are compatible with all Z-Wave™/Z-Wave Plus™ certified controllers. The devices support both the ***Network Wide Inclusion*** mechanism (which offers the ability to be included in a network, even if the device is not directly connected to the controller) and ***Normal Inclusion***.

By default, the inclusion procedure starts in ***Normal Inclusion*** mode and after a short timeout the procedure continues in ***Network Wide Inclusion*** mode that lasts for about 20 Seconds.

Only a controller can add the device into the network. After activating the inclusion function by the controller, the device can be added by setting it in Learn Mode.

Before including the device, the LED status indicator is solid RED. _The adding of a device is executed by activating the adding procedure in the inclusion section of the controller interface and then executing 1 or 3 click on the integrated button._ As soon as the inclusion procedure initiates the LED indicator starts a sequence of GREEN-BLUE blinks. The device is included in the network when the LED status is OFF and the interview is completed.

Standard exclusion (remove)

Only a controller can remove the device from the network. After activating the exclusion function by the controller, the device can be removed by setting it in ***Learn Mode***.

The procedure of exclusion can be activated by **Removing** a node from the Z-Wave™ network and _executing 1 or 3 click on the integrated button._ As soon as the exclusion initiates, the LED indicator starts a sequence of RED-BLUE blinks. The device is excluded from the network when the LED status indicator is solid RED and the App_status in the interface is OK.

SMARTSTART INCLUSION

Z-Wave™ SmartStart aims to shift the tasks related to inclusion of an end device into a Z-Wave™ network away from the end device itself, and towards the more user-friendly interface of the gateway.

Z-Wave™ SmartStart removes the need for initiating the end device to start inclusion. Inclusion is initiated automatically on power-ON and repeated at dynamic intervals for as long as the device is not included into a Z-Wave™ network. As the new device announces itself on power-ON, the protocol will provide notifications, and the gateway can initiate the inclusion process in the background, without the need for user interaction or any interruption of normal operation. The SmartStart inclusion process only includes authenticated devices.

META Serie 7 devices 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.

The SmartStart QR and the full DSK string code can be found on the back of the device. The PIN is the first group of 5 digits printed underlined. If you plan to use the DSK, it is important that you take a picture of the label and keep it in a safe place.

S2 SECURE INCLUSION

When adding META Serie 7 devices to a Z-Wave™ network with a controller supporting Security 2 Authenticated (S2), the PIN code of the Z-Wave™ Device Specific Key (DSK) is required. The unique DSK code is printed on the product label. The first five digits of the key are highlighted and underlined to help the user identify the PIN code.

Pin Code

SUPPORTED COMMAND CLASSES

Command Class	Version	Non-Secure CC	Secure CC
ZWAVEPLUS_INFO	2	x	
ASSOCIATION	2		x
MULTI_CHANNEL_ASSOCIATION	3		x
ASSOCIATION_GRP_INFO	3		x
TRANSPORT_SERVICE	2	x	
VERSION	3		x
MANUFACTURER_SPECIFIC	2		x
DEVICE_RESET_LOCALLY	1		x
INDICATOR	3		x
POWERLEVEL	1		x
SECURITY_2	1	x	
SUPERVISION	1	x	
FIRMWARE_UPDATE_MD	5		x
APPLICATION_STATUS	1	x	
CONFIGURATION_V4	4		x
NOTIFICATION	8		x
METER	5		x

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Supporting Command Class Indicator
The device supports the Command Class Indicator V3 (ID 0x50). When the device receives an indicator set, the led blinks accordingly to the Indicator set received.

The color shown by the indicator will be:
RED: if the device is included without Security
BLUE: if the device is included in S2 Unauthenticated Mode
GREEN: if the device is already included in S2 Authenticated Mode.

ASSOCIATIONS

META Energy Driven Switch C 7 can control other devices such as relays or dimmers. The device supports 5 association groups, each of which supports the association of 5 nodes.

Group ID	Group Name	N° max nodes supported in the group	Description	Command sent
1	Lifeline	5	Lifeline Group. Devices to receive notifications on: energy and power levels; device local reset; and indicator notification	DEVICE RESET LOCALLY NOTIFICATION, METER REPORT, INDICATOR REPORT
2	Up Power Detected G1	5	G1 and G2 group are controlled in sequence, after a user defined delay, in the case of an Up Power Event	BASIC_SET
3	Up Power Detected G2	5		
4	Down Power Detected G1	5	G1 and G2 group are controlled in sequence, after a user defined delay, in the case of a Down Power Event	BASIC_SET
5	Down Power Detected G2	5		

INFO: Association ensures direct transfer of control commands between devices and is performed without participation of the main controller.

SPECIAL FEATURES

Timer Management

The device has a timer that can be configured to turn ON and/or OFF the local relay. The timer starts its counter after a relay commutation.

Active Energy management

META Energy Driven Switch C 7 can implement an active energy saving policy by managing electric loads in order to maximize the self-consumption during the greater production period of a wind power or photovoltaic plant, optimizing the net metering and the energy saving. Refer to the configuration section for the parameter details.

The system implements a control logic of the associated loads through load controlled directly by the integrated relay, and the association groups which is based on the following logic:
The Up Power G1 and Up Power G2 groups are controlled if an Up Power event occurs. The Down Power G1 and Down Power G2 groups are controlled if a Down Power event occurs.

The Up Power and Down Power events are defined based on the power value above / below a certain level, over a certain period of time.

Both the power levels and the time thresholds of permanence are defined by the user.

In case the device recognizes an UP/DOWN Power event threshold, it tries to overcome the situation, by controlling in sequence the:

1. Integrated relay
2. UP/DOWN G1 group
3. UP/DOWN G2 group

The command sent during the controlling sequence can be configured by the user as the first timeout generates the event and the next timeout passes at the next controlling step.

The Up/Down Power First Timeout is always to be considered as Local Control on the relay, even if the relay is not connected to a load.

The Up/Down Power Next Timeout is always to be considered for both G1 and G2 groups in sequence after the Local Up/Down Power First Timeout.

The minimum time after which the group that has been commanded can be re-commanded, is defined as Protection Time.
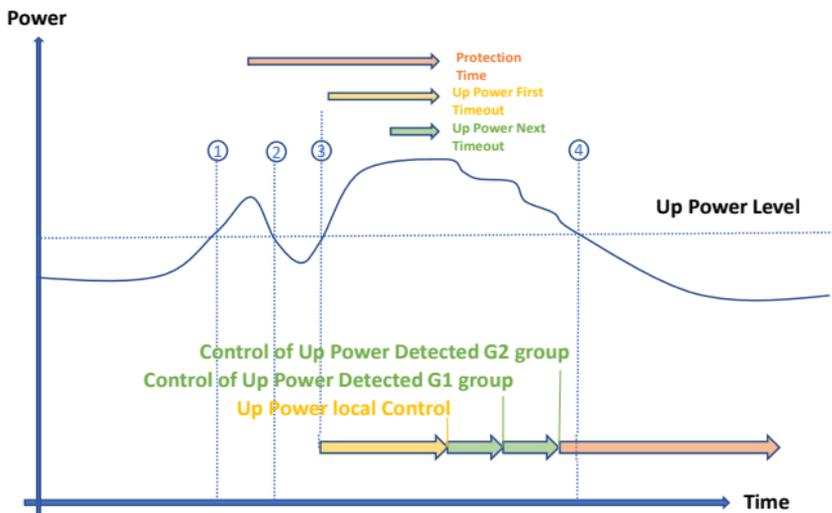
At point 1 the instantaneous power is above the threshold defined by Up Power Level, but the permanence above this level, ending in point 2, is less than the minimum time defined by Up Power First Timeout for the Up Power event to occur.

At point 3 the power is again above the threshold and remains so up to point 4.

After the Up Power First Timeout starting from point 3, the Up Power event which controls the local relay is triggered.

Since the power level is still above the threshold after the following Up Power Next Timeout duration, the control of the nodes associated with Group 1 is activated, and then the control of the nodes associated with Group 2.

The control sequence Local, G1, G2 stops as soon as the power returns below the threshold. If the power remains above the threshold and it does so for longer than the Protection time, the control sequence will be repeated. Once the power drops below the threshold value, to activate a new control sequence, it is necessary to wait for at least a time equal to the Protection Time.

An upper and lower power threshold can be configured which, when exceeded, activates, or deactivates the two groups of loads connected to the two thresholds.

Predefined loads can be disconnected when the power consumed exceeds a specific threshold for longer than a certain amount of time, or specific loads can be activated when the level of energy produced and not consumed exceeds a second threshold.

The device allows you to detect irregular consumption to prevent or identify faults by means of specific alarms.

Example 1: Avoid auto power cut-off for overload.

Configure the device so that, if the consumed power remains above 3 kWh for more than 10 seconds, it can initiate the following sequence of activities:

1. Activate a siren / alarm connected to the integrated relay,
2. If the event persists for further 10 seconds, disconnect a first group of loads (G1 GROUP)
3. If the event persists after further 10 seconds, disconnect a second group of loads (G2 GROUP)

Device configuration for example 1:

Add the devices that control the first and second load respectively in the G1 Up Power Level and G2 Up Power Level association groups and set the following configuration parameters.

Parameter	Description
50 (UP Power Level)	Set to 3000 the power level above which the timer starts counting
52 (UP_POWER_FIRST_TIMEOUT)	Set the first timeout to 10 seconds, relating to the time spent above the UP Power event
40 (UP_POWER_LOCAL_CONTROL)	Set the value to 1, so that the load connected to the integrated relay is switched ON (in this case it is a siren / alarm)
53 (UP_POWER_NEXT_TIMEOUT)	Set to 10 seconds the subsequent timeouts, for sending commands to the groups Up Power Level G1 and then G2
44 (UP_POWER_REMOTE_CONTROL)	Set the value to 0 so that the switch OFF command is sent to the devices included in the Up Power G1 and G2 groups

Example 2: Usage optimization of Energy Production and its usage.
Configure the device so that if the produced power exceeds 1,3 kW for more than 1 minute, a first load is switched ON (e.g. the water heater), and if after 3 minutes the consumed power is below 2 kW a second load is switched ON (e.g. the air conditioner)

The graph below describes the example in a simplified way:
When the produced power is higher than 1,3 kW, both conditions of consumption below 2 kW "Consumed Down Power Level" and production above 1,3 kW "Produced UP Power Level" are verified. The activation times of the loads are configured so that, if the Produced UP Power Level event is still present after 1 minute, the first remote load is switched ON (in point 1), and after 3 minutes of persistence of the Consumed Down Power Level event, the second load is also switched ON (point 2).
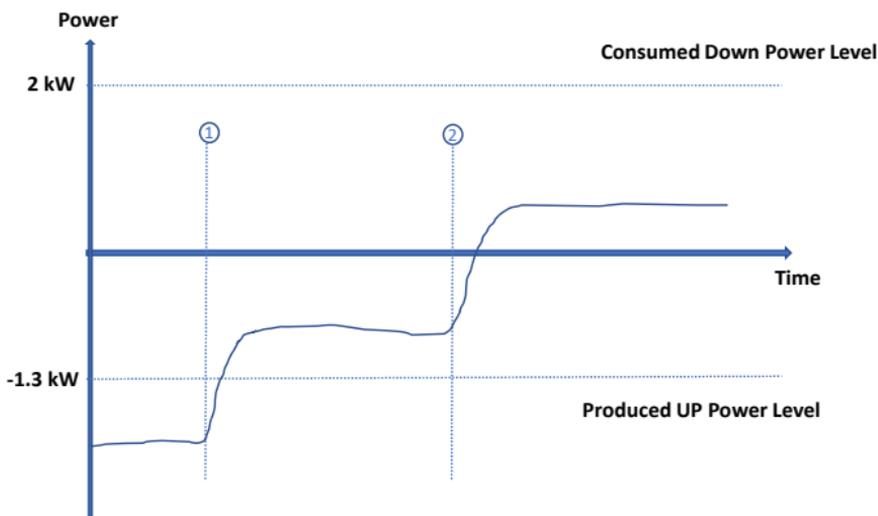
Device configuration for example 2:
Add in the association groups G1 Up Power Level and G1 Down Power Level the devices that control respectively the first load and the second load and set the following configuration parameters.

Parameter	Description
42 (METER_TYPE)	Set the value to 0 so that the device distinguishes between produced and consumed power.
50 (UP POWER LEVEL)	Set to 1300 the power level above which the timer starts counting
51 (UP_POWER_TYPE)	Set the value to 1 so that the level of power produced is considered for the Up Power level
52 (UP_POWER_FIRST_TIMEOUT)	Set the First Timeout to 2 seconds, relating to the time spent above the UP Power event produced (minimum value allowed 2 seconds)
53 (UP_POWER_NEXT_TIMEOUT)	Set to 58 seconds the next Timeout for sending commands to the G1 Up Power Level group. (The value takes into account the 2 second delay due to the minimum value of the first time out.)
44 (UP_POWER_REMOTE_ CONTROL)	Set the value to 100 for remote control of the device belonging to the G1 Up Power Level group for switching it ON
54 (DOWN_POWER_LEVEL)	Set to 2000 the power level below which the timer starts counting
55 (DOWN_POWER_TYPE)	Set the value to 0 so that the level of power consumed is considered for the Down Power level
56 (DOWN_POWER_FIRST_ TIMEOUT)	Set the first timeout to 2 seconds, relating to the time spent under the Down Power consumed event (minimum value allowed 2 seconds)
57 (DOWN_POWER_NEXT_ TIMEOUT)	Set to 178 seconds the next timeout for sending commands to the G1 Down Power Level group. (The value takes into account the 2 second delay due to the minimum value of the first time out.)
45 (DOWN_POWER_REMOTE_ CONTROL)	Set the value to 100 for remote control of the device belonging to the G1 Down Power group for switching it ON

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OVERVOLTAGE PROTECTION

The product can be configured to detect if the voltage remains within a range defined by the user, who can set an Overvoltage limit (parameter 46) and a Down voltage limit (parameter 47). When the voltage values go out of the defined range, a notification is sent to the Lifeline association group.

In the following diagram is shown an example of device behavior:
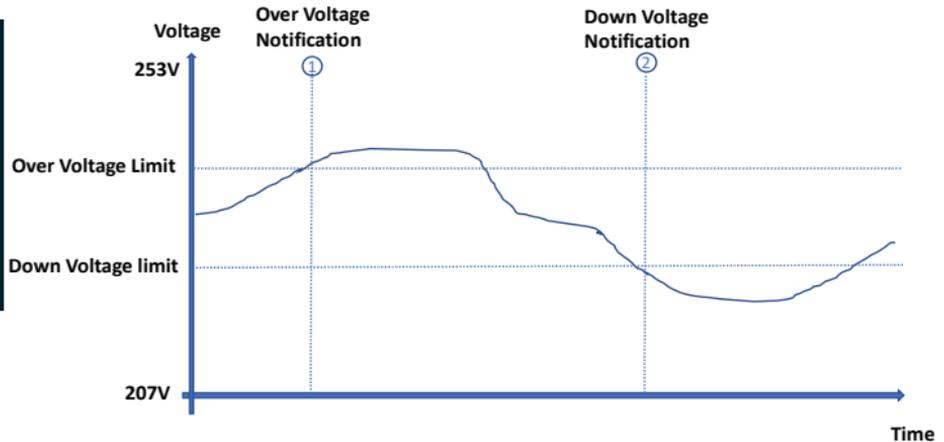
At point 1 the device detects an Overvoltage so it sends an Overvoltage Notification.
In the same way, at point 2 the device will send a Down Voltage Notification.

NOTIFICATION COMMAND CLASS

The product supports the **Notification Command Class for POWER_MANAGEMENT Type and the Following Events:**

Event	Description
OVERVOLTAGE _ DETECTION	The event is Sent when an Overvoltage has been recognized. The over Voltage default value is 253 Volt and can be changed by the user with the parameter OVER_VOLTAGE_LIMIT
VOLTAGE_DROP_DRIFT	The event is Sent when a Low voltage has been recognized. The low Voltage default value is 207 Volt and can be changed by the user with the parameter LOW_VOLTAGE_LIMIT
OVERLOADED_ DETECTED	The event is Sent when an Over Load has been recognized. This event is disabled by default but can be enabled by using the parameter UP_POWER_LEVEL. The same alert is send also when the produced power overcomes the up power level and the UP_POWER_TYPE parameter is set to on the produced power.

METER COMMAND CLASS

The product supports the meter command class and KWh is the default scale report send when the scale type is not present in the received Get.

OFFLINE SETUP MODE

The device has a unique feature that allows to configure some parameters without using any user interface. This feature enables the professional user to setup the main features of the device in the field even if the device is not included in a Z-Wave™ Network. When the device will be included in the network all these configuration parameters will be maintained.

To enter in offline setup mode, operate 2 clicks on the integrated button.

When the device is in Offline setup mode the led becomes solid Blue and the following configurations are permitted:

1 click	Setup input type to toggle switch. Equivalent to set parameter n. 1 to 2.
2 clicks	Activate a switch Off timer of 10 minutes. Equivalent to set parameter n.30 to 15 and parameter n. 31 to 6000.
After receiving the command the led blinks a number of times equal to the number of clicks recognized.	
6 clicks	Exit from Offline setup mode and return to normal operation.
Hold down for 5 seconds	Reset all configuration parameters to their default value and return to normal operation.

After entering in Offline setup mode, the device returns to normal operation if no action on the switch is detected for more than 20 seconds.

RESET TO THE FACTORY SETTINGS

The device can be reset to the original factory with 6 consecutive clicks on the integrated button.

After the reset is completed, the device will reboot and a RED solid led is showed.
Please use this procedure only when the network primary controller is missing or otherwise inoperable.

INFO: If the reset is performed while the device is still part of a network, it notifies the other devices that it has been removed *(Device Reset Locally Notification).*

FIRMWARE UPDATE

The system supports over-the-air firmware updates that do not require the device to be removed from its location. The firmware update can be activated from all certified controllers supporting version 2 of the Firmware Update function.

WARNING: The system will be rebooted at the end of the firmware update procedure. It is advisable to carry out the firmware update procedure only when necessary and following careful planning of the intervention.

CONFIGURATIONS

Output configuration

Parameter Number	Size	Parameter Name	Default Value	Description
21	1	OUT_TYPE	0	Define the output type.
Parameters Values			Min: 0	Max: 1
Value	Description			
0	Direct load or normally Open relay			
1	Normally Closed relay			

Parameter Number	Size	Parameter Name	Default Value	Description
23	1	STARTUP_OUT	2	Define the output level on startup.
Parameters Values			Min: 0	Max: 2
Value	Description			
0	OFF			
1	ON			
2	Previous status			

Timer management

Parameter Number	Size	Parameter Name	Default Value	Description
31	4	OFF_TIMEOUT	0	Time in tenth of seconds after which the output will be switched Off.
Parameters Values			Min: 0	Max: 360000
Value	Description			
0	Disabled			
0-360000	Specific time expressed in tenth of seconds for Status change.			

Parameter Number	Size	Parameter Name	Default Value	Description
32	4	ON_TIMEOUT	0	Time in tenth of second after which the output will be switched On.
Parameters Values			Min: 0	Max: 360000
Value	Description			
0	Disabled			
0-360000	Specific time expressed in tenth of seconds for Status change.			

Local Control

Parameter Number	Size	Parameter Name	Default Value	Description
40	1	UP_POWER_LOCAL_CONTROL	1	The value used to control the integrated Relay in case of Up Power Event.
Parameters Values			Min: 0	Max: 1
Value	Description			
0	OFF			
1	ON			

Parameter Number	Size	Parameter Name	Default Value	Description
41	1	DOWN_POWER_LOCAL_CONTROL	1	The value used to control the integrated Relay in case of Down Power Event.
Parameters Values			Min: 0	Max: 1
Value	Description			
0	OFF			
1	ON			

Basic Meter configuration

Parameter Number	Size	Parameter Name	Default Value	Description
42	**1**	**METER_ TYPE**	**3**	Defines how positive and negative power is treated.
Parameters Values			**Min: 0**	**Max:**
Value	**Description**			
0	As is (The meter is connected in a bidirectional system and you want to measure consumed and produced energy)			
1	Negative value is considered 0 (The meter is connected in a bidirectional system, but you are interested only in consumed energy)			
2	Positive value is considered 0 (The meter is connected in a bidirectional system, but you are interested only in produced energy)			
3	All values are considered positive (The meter is connected in a system that only consumes Energy)			
4	All values are considered negative (The meter is connected in a system that only produces Energy)			

Parameter Number	Size	Parameter Name	Default Value	Description
43	**4**	**CT_TYPE**	**1**	Define the Model of Current Transformer connected to the device.
Parameters Values			**Min: 1**	**Max: 2**
Value	**Description**			
1	Standard Type			
2	Type 2 version			

Remote control

Parameter Number	Size	Parameter Name	Default Value	Description
44	1	UP_ POWER_ REMOTE_ CONTROL	0	The value used to control Up Power Group.
Parameters Values			**Min: 0**	**Max: 100**
Value	**Description**			
0-99	Specific value (where 0 equals OFF)			
100	ON			

Parameter Number	Size	Parameter Name	Default Value	Description
45	1	DOWN_ POWER_ REMOTE_ CONTROL	100	The value used to control Down Power Group.
Parameters Values			**Min: 0**	**Max: 100**
Value	**Description**			
0-99	Specific value (where 0 equals OFF)			
100	ON			

Voltage protection

Parameter Number	Size	Parameter Name	Default Value	Description
46	2	OVER_ VOLTAGE_ LIMIT	2530	The value used to control Up Power Group.
Parameters Values			**Min: 900**	**Max: 2530**
Value	**Description**			
900-2530	Over Voltage limit			

Parameter Number	Size	Parameter Name	Default Value	Description
47	2	**DOWN_ VOLTAGE_ LIMIT**	2070	Define the Down Voltage Limit in tenth of volt.
Parameters Values			**Min: 900**	**Max: 2530**
Value	**Description**			
900-2530	Down Voltage limit			

Advanced Meter configuration

Parameter Number	Size	Parameter Name	Default Value	Description
50	4	**UP_ POWER_ LEVEL**	0	Sets the level of Watts beyond which time of permanence above this level is calculated.
Parameters Values			**Min: 0**	**Max: 100000**
Value	**Description**			
0	Up Power Event Disabled			
1-100000	Instantaneous power in Watts			

Parameter Number	Size	Parameter Name	Default Value	Description
51	1	**UP_ POWER_ TYPE**	0	Defines if the Up Power is consumed or produced.
Parameters Values			**Min: 0**	**Max: 1**
Value	**Description**			
0	Consumed			
1	Produced			

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Parameter Number	Size	Parameter Name	Default Value	Description
52	2	UP_POWER_FIRST_TIMEOUT	30	Defines the time of permanence in seconds above the Up power level after which the First Up Power event occurs.

Parameters Values		Min: 2	Max: 7200

Value	Description
2-7200	Specific time expressed in seconds

Parameter Number	Size	Parameter Name	Default Value	Description
53	2	UP_POWER_NEXT_TIMEOUT	5	Defines the time of permanence in seconds above the Up power level after which the Next Up Power event occurs.

Parameters Values		Min: 2	Max: 7200

Value	Description
2-7200	Specific time expressed in seconds

Parameter Number	Size	Parameter Name	Default Value	Description
54	4	DOWN_POWER_LEVEL	0	Sets the level of Watts beyond which time of permanence below this level is calculated.

Parameters Values		Min: 0	Max: 100000

Value	Description
0	Down Power Event Disabled
1-100000	Instantaneous power in Watt

Parameter Number	Size	Parameter Name	Default Value	Description
55	1	DOWN_ POWER_ TYPE	0	Defines if the Down Power is consumed or produced.
Parameters Values			Min: 0	Max: 1
Value	Description			
0	Consumed			
1	Produced			

Parameter Number	Size	Parameter Name	Default Value	Description
56	2	DOWN_ POWER_ FIRST_ TIMEOUT	30	Defines the time of permanence in seconds below the Down Power level after which the first Down Power event occurs.
Parameters Values			Min: 2	Max: 7200
Value	Description			
2-7200	Specific time expressed in seconds			

Parameter Number	Size	Parameter Name	Default Value	Description
57	2	DOWN_ POWER_ NEXT_ TIMEOUT	5	Defines the time of permanence in seconds below the Down Power level after which the next Up Down event occurs.
Parameters Values			Min: 2	Max: 7200
Value	Description			
2-7200	Specific time expressed in seconds			

Parameter Number	Size	Parameter Name	Default Value	Description
58	2	PROTECTION_TIME	60	Define the minimum time is seconds, after which an Up/Down Power Event can be triggered again.
Parameters Values			**Min: 2**	**Max: 3600**
Value	**Description**			
2-3600	Protection time in seconds			

Meter Report Configuration

Parameter Number	Size	Parameter Name	Default Value	Description
71	1	METER_REPORT_MAX_DELAY	10	The Maximum Time in minutes after which the next Meter sequence report will be sent.
Parameters Values			**Min: 1**	**Max: 120**
Value	**Description**			
1-120	The maximum delay in minutes from a sequence of meter report and the next			

Parameter Number	Size	Parameter Name	Default Value	Description
75	1	METER_ISTANT_REPORT	20	The percentage of Power change from the last sent report that triggers a new meter report sequence.
Parameters Values			**Min: 0**	**Max: 100**
Value	**Description**			
0	No report is sent (for any power change)			
1-100	The percentage of Power change from the last sent report that triggers a new meter report sequence			

Parameter Number	Size	Parameter Name	Default Value	Description
76	**1**	**REPORT_ CONFIG**	**117**	Define which Report scale will be sent.

Parameters Values		Min: 0	Max: 117

Value	Description
0	None
1	Energy
4	Power
16	Voltage
32	Current
64	Power Factor

If you want to receive more than 1 scale, the value for the configuration parameter is the sum of the event values.

For example:

If you want to receive the Energy and Power reports -> Parameter value must be $1 + 4 = 5$

If you want to receive the Voltage and Current reports -> Parameter value must be $16 + 32 = 48$

Default value: 117 (to receive all reports)

ENGLISH

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