# SE Devices Multifunction Switch FMS Manual

Contents



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### SE Devices

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# Multifunction Switch

### SKU: FMS


WAVE
PLUS
SECURE V2

## Quickstart

This is a
**secure**
**Wall Controller**
for
**CEPT (Europe)**.

To run this device please connect it to your mains power supply.

To add this device to your network execute the following action:
Push and Hold both Lower buttons simultaneously for 5 seconds. Inclusion is indicated by the LEDs flashing in a “U” shaped pattern.

Please refer to the
**Manufacturers Manual** for more information.

## 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 or batteries in a fire or near open heat sources.

## What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.

## Product Description

The Multifunction Switch is a Z-Wave Plus mains powered Wallbox mountable Wall Controller. It can be configured

to control up to Four separate Light Zones or Central Scenes. Each Light Zone can consist of both Dimmers and Switches. The device can be combined with a Back Unit, which provide local Switch or Dimmer functionality.Room and Floor temperature sensors can also be connected to the device, which enables the device to function as a head-less Thermostat. The Thermostat is fully controllable from a Z-Wave Controller, and can control both a Local and Remote heating relay.

## Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state.** Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

## Reset to factory default

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.

Push and Hold both Left buttons simultaneously for 15 seconds, until the Lower Left LED starts blinking. Push and Hold the Lower Right button to confirm Factory Reset. The procedure can be aborted at any time, and will also be aborted if any other button than the Lower Right is pushed after the initial 15 second push and hold.WARNING! Executing a Factory Reset will set all configuration to factory defaults, and remove the device from the Z-Wave network. As all configuration is reset, the device may stop operating as intended and may require a re-configuration. Please use this procedure only when the network primary controller is missing or otherwise inoperable.

## Safety Warning for Mains Powered Devices

ATTENTION: only authorized technicians under consideration of the country-specific installation guidelines/norms may do works with mains power. Prior to the assembly of the product, the voltage network has to be switched off and ensured against re-switching.

## Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

## Inclusion

Push and Hold both Lower buttons simultaneously for 5 seconds. Inclusion is indicated by the LEDs flashing in a “U” shaped pattern.

## Exclusion

Push and Hold both Lower buttons simultaneously for 5 seconds. Exclusion is indicated by the LEDs flashing in a “U” shaped pattern.

## Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

### Association – one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, …). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a ‘Basic Set’ Command.

### Association Groups:

Group NumberMaximum NodesDescription

| | | |
|---|---|---|
| 1 | 5 | Z-Wave Plus Lifeline – Supports MultichannelOnly local Light Zone changes are reported if Multichannel association is not used.Commands issued:- Basic Report: Reports Light Zone state and level changes- Central Scene Notification: Notifies activated Scenes- Sensor Multilevel Report: Power Consumption and Air Temperature (if a sensor is connected)- Meter: Reports energy consumption- Device Reset Local ly – Reports device Factory Reset |
| 2 | 5 | Controls devices in Light Zone 1. Supports Multichannel AssociationCommands Issued:- Basic Set: Controlled by Light Zone 1. Dimmer or Switch mapped Basic command values is configurable |
| 3 | 5 | Controls devices in Light Zone 2. Supports Multichannel AssociationCommands Issued:- Basic Set: Controlled by Light Zone 1. Dimmer or Switch mapped Basic command values is configurable |
| 4 | 5 | Controls devices in Light Zone 3. Supports Multichannel AssociationCommands Issued:- Basic Set: Controlled by Light Zone 1. Dimmer or Switch mapped Basic command values is configurable |
| 5 | 5 | Controls devices in Light Zone 4. Supports Multichannel AssociationCommands Issued:- Basic Set: Controlled by Light Zone 1. Dimmer or Switch mapped Basic command values is configurable |
| 6 | 5 | Enables control of external Heating Thermostats in the same heating zone.Commands Issued:- Thermostat Setpoint Set: Sent on local Thermostat Set-Point changes- Thermostat Mode Set: Sent on lo cal Thermostat Mode changes |
| 7 | 5 | Enables the Thermostat to control Remote Heating Relays.Commands issued:- Basic Set: Value ON (25 5) or OFF (0), according to Thermostat Heating State changes. |

### Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

**IMPORTANT:** Controllers may only allow configuring signed values. In order to set values in the range 128 … 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200â€ˆit may be needed to set a value of 200 minus 256 = minus 56.

In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

### Parameter 10: Dimming Speed

*Defines the u0022fadeu0022 time when setting a dim level from a controller. Fade time is defined as the time it takes to dim from MIN level to MAX level, which means an increase of 10% in light level takes 1/10th of the configured time. The value defines the dim time in 1/100'th of a second, which means a value of 200 means the Dimming Speed is 2.0 seconds from MIN to MAX. Max time is 327.67 seconds (around 5.5 minutes). Values below 300 (0.3 seconds) are ignored and values below 1000 (1 second) are discouraged.*
Size: 1 Byte, Default Value: 200

SettingDescription

| | |
|---|---|
| 30 – 32767 | Dimmer Speed in 1/100th of a Second |

### Parameter 11: Dimmer Mode

*Defines if Dimmer should operate in Leading or Tailing Edge mode. Most Lights work quite OK in the default Leading Edge mode, but this mode also usually cause some noise from the dimmer unit. During installation it is therefore recommended to try TE mode, and use this if the Light operates properly. Tailing Edge mode is known to cause instability in some type of Lights! This configuration does not have an effect on 1-10V Dimmer Back Units!0 = Leading Edge Mode (LE)1 = Tailing Edge Mode (TE)*
Size: 1 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| 0 – 1 | Dimmer Operation Mode |

### Parameter 12: Maximum Level

*The Maximum Light level of the dimmer. Typically there is no visible difference when the dimming level reaches a point in the range 75 – 90, and the installer should set this value to the lowest value where no change is visible. The default value of 90 is usually OK. Range 1-99.*
Size: 1 Byte, Default Value: 90

SettingDescription

| | |
|---|---|
| 1 – 99 | Maximum Dimmer Level |

### Parameter 13: Minimum Level

*The Minimum Light Level of the dimmer. This should be adjusted so the controlled Light is still ON and stable. Remember that LED type lights may work if dimmed down to a low value, but may not start if the light is turned OFF and ON again. Range 1-99.*
Size: 1 Byte, Default Value: 12

SettingDescription

| | |
|---|---|
| 1 – 99 | Minimum Dimmer Level |

### Parameter 14: Button Mode

*Controls the operation mode of the buttons. Valid configuration values are:0Single Switch Mode (default)1Dual Switch Mode2Quadruple Switch Mode3Legacy Scenario Mode4Central Scene Controller Mode(See detailed description in manual)*
Size: 1 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| 0 – 4 | Set Button Mode |

### Parameter 15: Light Zone Control Mode

*Controls if the Light Zones should operate in Switch or Dimmer Mode (only used in Button Modes 0, 1 and 2):0All Light Zones in Dimmer Mode (default)1All Light Zones in Switch Mode (default with Relay back unit)To control Light Zones mode individually, add any of the following values to enable switch mode individually (dimmer is default):2Light Zone 1 Switch Mode4Light Zone 2 Switch Mode8Light Zone 3 Switch Mode16Light Zone 4 Switch ModeExample: A value of 10 (8 + 2) enables switch mode in Light Zone 1 and 3.*
Size: 1 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| 0 – 1 | Common Mode for all Light Zones |
| 2 – 30 | Switch Mode for individual Light Zones |

### Parameter 17: Back Unit Role

*Configures the Role of the Back Unit, which dictates what Local functionality controls it.Valid configuration values are:0 – The Thermostat will control the Back Unit (if the back unit is a dimmer, then this value has no effect as Thermostats requires a relay to function)1 – The Light Control feature (buttons) will control the Back Unit.2 – Disconnected mode means the Back Unit is not controlled by any local UI or features, and can only be controlled via Z-Wave End-Point 5 (or non-channel encapsulated commands).*
Size: 1 Byte, Default Value: 1

SettingDescription

| | |
|---|---|
| 0 – 2 | Selected Back Unit Role |

### Parameter 18: Back Unit Light Zone

*Selects which Light Zone the Back Unit should be assigned to. Possible values are:1Light Zone 1 (Button and Z-Wave) (default)2Light Zone 2 (Button and Z-Wave)3Light Zone 3 (Button and Z-Wave)4Light Zone 4 (Button and Z-Wave)This can be used to assign the back unit control to any of the Multiswitch buttons (Light Zone 1 – 4). This does not have any effect however when the BU role is set to Thermostat or Disconnected!*
Size: 1 Byte, Default Value: 1

SettingDescription

| | |
|---|---|
| 1 – 4 | Selected Back Unit Light Zone |

### Parameter 240: Floor Sensor Temperature Offset

*Defines an offset to the Floor Temperature, given as a signed integer at 1/10 of a degree celcius. This provides an offset range of 12.8 to +12.7 degrees celcius (-128 to 127).*
Size: 1 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| -128 – 127 | Temperature Offset in 1/10th of a degree Celcius |

### Parameter 241: Room Sensor Temperature Offset

*Defines an offset to the Room Temperature, given as a signed integer at 1/10 of a degree celcius. This provides*

*an offset range of 12.8 to +12.7 degrees celcius (-128 to 127).*
Size: 1 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| -128 – 127 | Temperature Offset in 1/10th of a degree Celcius |

### Parameter 32: Thermostat Set Point Max

*Maximum Heat Set Point the Thermostat is allowed to be set to. If the Thermostat is used for Floor Heating, please make sure that this value is configured to the same value as (or lower than) the Max Floor Temperature. Given in 1/10 of a degree Celcius, which means a value of 300 means 30 degrees C. Range: 0500 (0-50 degrees).*
Size: 2 Byte, Default Value: 270

SettingDescription

| | |
|---|---|
| 0 – 500 | Set Point Max in 1/10th of a degree Celcius |

### Parameter 34: Thermostat Set Point Min

*Minimum Heat Set Point the Thermostat is allowed to be set to. Given in 1/10 of a degree Celcius, which means a value of 50 means 5 degrees C. Range: 0500 (0-50 degrees).*
Size: 2 Byte, Default Value: 50

SettingDescription

| | |
|---|---|
| 0 – 500 | Set Point Min in 1/10th of a degree Celcius |

### Parameter 36: Thermostat Control Resend Interval

*Defines the interval between each time the Thermostat will repeat its last control command. This is used in combination with the Relay Safety configuration when controlling external Relays. If the Thermostat should fail, it would then stop sending control commands which in turn means the Relay will turn itself OFF after the safety mode delay has expired. This insures that heating will not be left ON indefinitely in failure situations. Range: 6032767 seconds*
Size: 2 Byte, Default Value: 3600

SettingDescription

| | |
|---|---|
| 0 – 32767 | Resend Interval in seconds |

### Parameter 37: Thermostat Minimum On/Off Interval

*This configuration defines the minimum interval the controlled Thermostat Relays will be ON and OFF. This is a feature intended to avoid turning control relays ON and OFF too frequently, which should insure a better lifetime of controlled relays. The default value is 5 minutes, which is OK for most electrical heating control. If used to control Water based heating, the value MUST be adjusted in accordance with the manufacturers specifications. Range: 6032767 seconds*
Size: 2 Byte, Default Value: 300

SettingDescription

| | |
|---|---|
| 60 – 32767 | Minimum On/Off interval in seconds |

### Parameter 38: Thermostat Floor Temp Max

*Max floor temperature if a local floor sensor is connected. If the Floor Sensor reads a temperature Higher than the configured value, it will immediately turn the relay (or any associated relays) OFF. The relay will stay off until the temperature sinks below this value, and the Thermostat issues it's next control command. Disabled if zero (0) value, or if no floor sensor is connected. The value is given as 1/10th of a degree Celcius. Range: 0500 (0-50 degrees). NOTE! MAX 27 degrees is recommended for Wooden Floors! NOTE! This function is always active as long as a Floor Sensor is connected, regardless of the sensor configuration described below.*
Size: 2 Byte, Default Value: 270

SettingDescription

| | |
|---|---|
| 0 – 500 | Floor Temp Max in 1/10th of a degree Celcius |

### Parameter 4: Safety Activate Delay

*Safety Mode is activated after the configured number of seconds has elapsed. It will start by turning OFF the Back Unit when activated. A 0 value Disables Safety Mode. The MAX limit is 32767 seconds (9 hours, 6 minutes and 7 seconds). The minimum Actication delay is 60 seconds, and values from 1 to 59 will automatically be translated to a 60 second delay.*
Size: 2 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| 0 – 32767 | Safety Activate Delay in seconds |

### Parameter 40: Temperature Sensor Select

*Defines which temperature Sensor should be used for Heating Control. The default value is Both (3), which should work well in most scenarios (even when only a Floor or Room sensor is present). If both a Room and Floor sensor is used, the Thermostat will always control heating based on the lowest temperature reading of the two, to insure a comfortable floor temperature even if the room is already warm enough. If this is not wanted, the Thermostat should be configured to use the Room sensor Only. NOTE! The Floor Max Temperature feature will ALWAYS be active as long as a floor sensor is available, even if the Thermostat is configured to only use the Room Sensor. 1 – Local Room – Use temperature from Locally connected Room sensor ONLY. Max Floor Temp protection is still active as long as a floor sensor is available. 2 – Local Floor – Use temperature from Locally connected Floor sensor ONLY 3 – Both (auto) – Use temperature from Locally connected Floor AND Room sensor if available (Default).*
Size: 1 Byte, Default Value: 3

SettingDescription

| | |
|---|---|
| 1 – 3 | Temperature Sensor Select |

### Parameter 44: Cold Start Minimum Level

*Sets the minimum level the Dimmer should go to when the light is switched ON. This is typically used for LED lamps which does not switch ON correctly when the dimming level is at the Minimum. See detailed description below.*
Size: 1 Byte, Default Value: 12

SettingDescription

| | |
|---|---|
| 1 – 99 | Cold Start Minimum Level |

### Parameter 5: Safety OFF Period

*The number of seconds to stay in OFF mode when Safety is activated. The Back unit turns ON when the timer have elapsed. If value is 0, the Back Unit will not turn back ON. The MAX limit is 32767 seconds (9 hours, 6*

*minutes and 7 seconds). A 60 second minimum period applies.*
Size: 2 Byte, Default Value: 600

SettingDescription

| | |
|---|---|
| 0 – 32767 | Safety OFF Period in seconds |

### Parameter 6: Safety ON Period

*The number of seconds to stay in ON mode when Safety is activated. The Back Unit turns back OFF when the timer have elapsed (and continues to turn ON and OFF alternately). If value is 0, the Back Unit WILL NOT turn ON at all. The MAX limit is 32767 seconds (9 hours, 6 minutes and 7 seconds). A 60 second minimum period applies.*
Size: 2 Byte, Default Value: 300

SettingDescription

| | |
|---|---|
| 0 – 32767 | Safety ON Period in seconds |

### Parameter 64: Temperature Report Inteval

*Defines the Periodic Report interval for temperature readings. This can be configured to a minimum of 60 seconds and maximum of (32767 seconds. A 0 value disables the Interval based Periodic reporting, and any value below 60 results in a 60 second interval.*
Size: 2 Byte, Default Value: 600

SettingDescription

| | |
|---|---|
| 0 – 32767 | Report Interval in seconds |

### Parameter 66: Temperature Report Threshold

*Defines a temperature change threshold where a temperature report is sent regardless of the Report Interval. This also works if the report interval is disabled. The value is given in 1/10 of a degree celsius, and can be in the range 1-127. A zero value disables the Threshold.*
Size: 1 Byte, Default Value: 10

SettingDescription

| | |
|---|---|
| 0 – 127 | Report Threshold in 1/10th of a degree Celcius |

### Parameter 67: Thermostat OnOff Interval Override Threshold

*Defines a temperature threshold at which the configured On/Off interval is overridden and the Heating relay state will change regardless. The value is given in 1/10th of a degree, supporting a max threshold of 12.7 degrees celcius. A Zero (0) value disables this feature (the default)*
Size: 1 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| 0 – 127 | Temperature Threshold in 1/10th of a degree Celcius |

### Parameter 80: Button LED Mode

*Controls the operation of the LEDs. Possible values are:0LEDs are always OFF (default)1Momentary ON2Stable ONThe LED operation is described in details in the User Manual, and also depends on the Button Mode configuration.*
Size: 1 Byte, Default Value: 0

SettingDescription

| | |
|---|---|
| 0 – 2 | Selected LED Mode |

### Technical Data

| | |
|---|---|
| Hardware Platform | ZM5202 |
| Device Type | Wall Controller |
| Network Operation | Always On Slave |
| Firmware Version | HW: 30 FW: 3.00:03.00 |
| Z-Wave Version | 6.71.01 |
| Certification ID | ZC10-18026000 |
| Z-Wave Product Id | 0x024F.0x0003.0x1002 |
| Sensors | |
| Thermostat HVAC Systems Supported | |
| Thermostat Power Source | |
| Thermostat Modes | |
| Color | |
| Z-Wave Scene Type | |
| Electric Load Type | |
| Firmware Updatable | |
| Switch Type | |
| Supported Meter Type | |
| Neutral Wire Required | ok |
| Security V2 | S2_UNAUTHENTICATED |
| Frequency | XXfrequency |
| Maximum transmission power | XXantenna |

### Supported Command Classes

- Association Grp Info
- Association V2
- Basic
- Central Scene V3
- Configuration
- Device Reset Locally
- Firmware Update Md V4
- Manufacturer Specific V2
- Meter V2

- Multi Channel Association V3
- Multi Channel V4
- Powerlevel
- Security
- Security 2
- Sensor Multilevel V5
- Supervision
- Switch Binary
- Switch Multilevel
- Thermostat Mode
- Thermostat Setpoint
- Transport Service V2
- Version V2
- Zwaveplus Info V2

### Controlled Command Classes

- Basic
- Thermostat Mode
- Thermostat Setpoint

### Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways,Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announces that is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.