HELTUN™

IMPOSSIBLY SMART

HIGH LOAD SWITCH

WITH THERMOSTAT FUNCTIONS

HE-HLS01

Z-WAVE 700 PLATFROM

HELTUN

YOUR COMFORT & CONVENIENCE MATTER

- When considering your comfort and convenience, what is most important?
- Is it home climate control?
- Remote or automatic control of appliances, outlets, or groups of lights?
- Or maybe something else?

Whatever the need,

HELTUN has got you covered.

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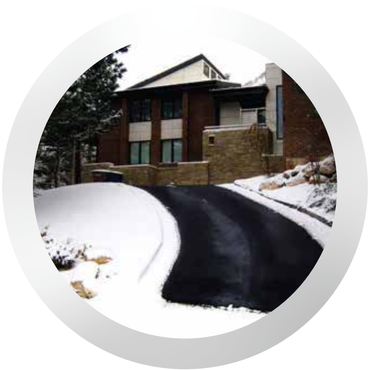
TAKE CONTROL

Electric Water Heaters/Boilers

Electric Underfloor Heating Systems

Electric Outlets

HELTUN Advanced Zero-Cross Technology delivers greatly increased longevity and reliability for maximum 16 Amp loads.



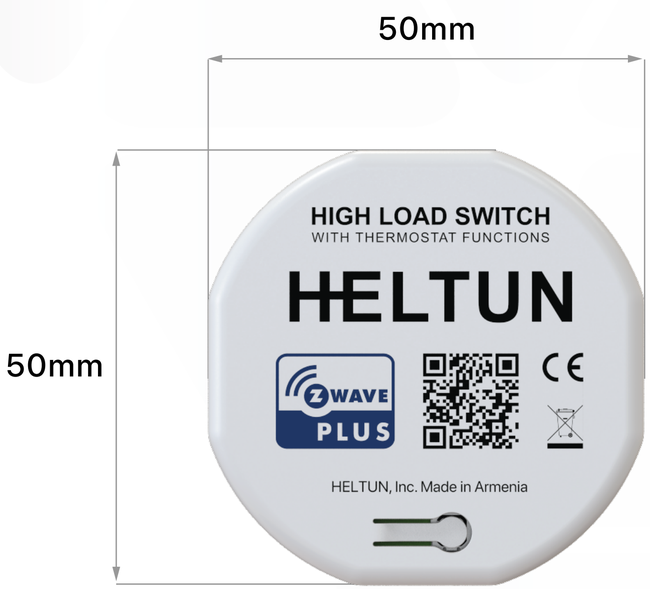
Electric Snow Melt System for Decks & Driveways

Electric Roof and Gutter De-Icing Systems

Electric Radiators

Circuit Breakers Appliances, Outlets & Lights

IMPOSSIBLY SMALL



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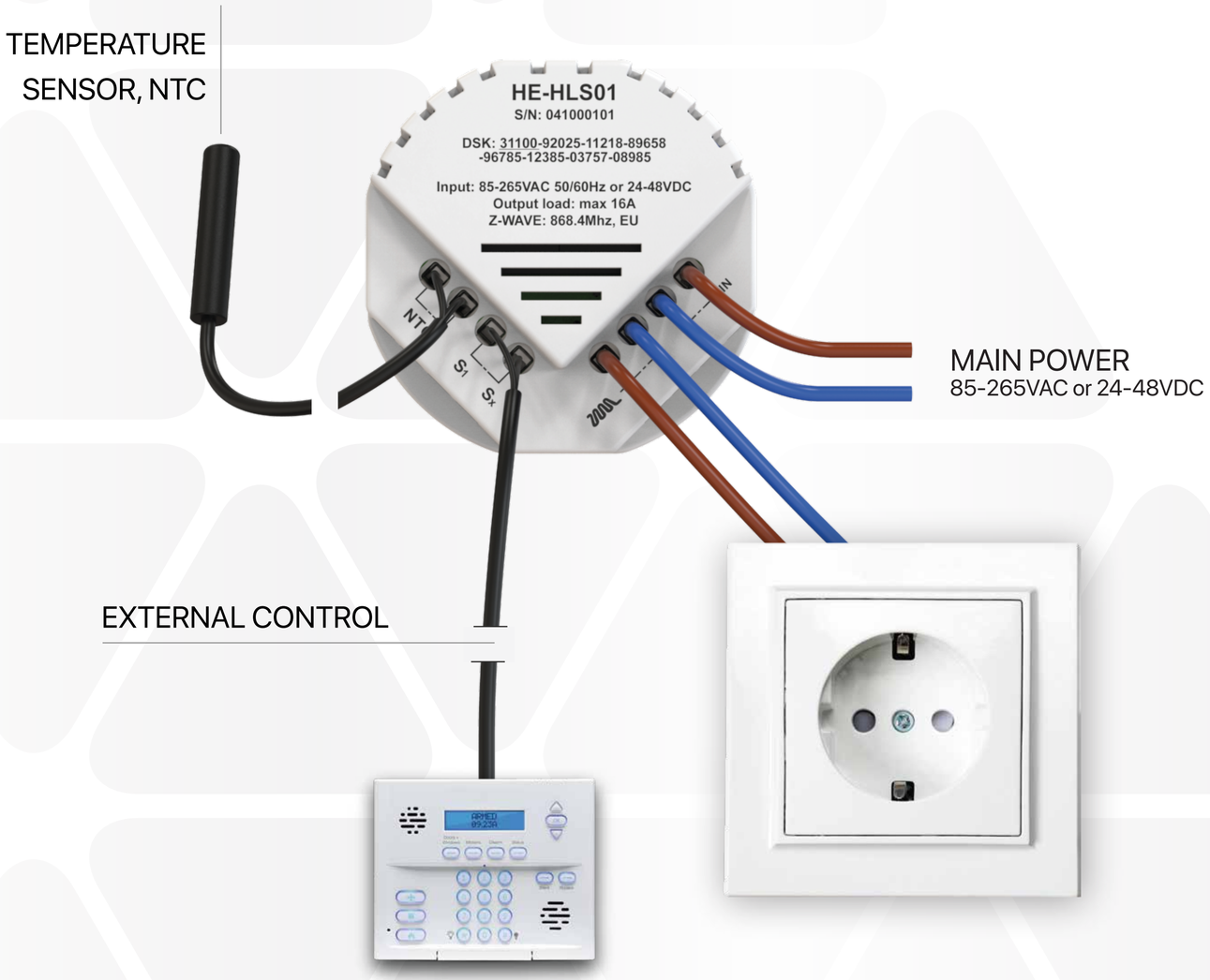
IMPOSSIBLY SMART

The High Load Switch with Thermostat Functions brings incredible capabilities to any connected device. It makes electric outlets and whole banks of lights ‘smart’ with full remote monitoring, control, and advanced programmability. You can now enable Internet-connected thermostat functions where a local display and controls are not needed, such as with roof or driveway de-icing systems, etc. This brings the convenience of smartphone app control and programmability to ‘dumb’ devices such as electrical outlets & panels, electric water heaters, radiators, fireplaces, and radiant floor or de-icing systems.

At 26mm in depth, the High Load Switch is also impossibly small, fitting into any rectangular, round or square electrical junction box, even behind an attached device.



INPUTS, OUTPUTS & SENSORS

You can connect an NTC temperature sensor to monitor ambient or radiant floor/roof system temperatures. This sensor can be installed on the wall, under floorboards, on the roof, or under decking, allowing you to accurately measure surface temperatures. The HELTUN High Load Switch is fully compatible with NTC sensors from other manufacturers, so there is no need to replace an existing sensor when installing it.

You can also control the High Load Switch by connecting it to an external system - like an alarm system - using a pilot wire which could be programmed to automatically reduce the temperature when the house is empty or turn on electric outlets/lights when people come home.

KNOW HOW MUCH ENERGY YOU USE

The HELTUN built-in Power Consumption System precisely monitors how much energy has passed through your High Load Switch during any particular day, week, or month. With the High Load Switch, you can determine how much energy is used by major appliances, entertainment systems, computers, small appliances, or entire lighting systems.

We have also designed the circuitry so it draws almost zero watts to power itself when in standby mode. This saves you energy and money even if your home is equipped with many HELTUN products.

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THERMOSTAT MODES

COM Comfort mode

ECO Energy saving mode

VAC Vacation mode

DRY Quick drying mode

MAN Manual mode

Time mode

Even though the High Load Switch does not have a display or buttons, all of its thermostat functions can be accessed through a Z-Wave controller. Here are the available thermostat modes.

COM (comfort), ECO (energy-saving), and VAC (vacation) modes maintain the temperature you specified using the Z-Wave controller.

DRY mode switches to a rapid heating mode at a higher temperature to dry floors after washing. DRY mode reverts back to the previous mode after the specified time.

MAN (manual) mode allows you to override any current mode or schedule and turn the heat ON or OFF manually using your controller interface.

See your controller manual for instructions on setting temperature set points and modes for connected thermostats.

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TIME MODE: THERMOSTAT

You can reduce your power bill and help the environment just by using TIME mode through your Z-Wave controller. Adjust your home comfort level according to your family's habits by reducing the temperature while everyone is away, and by boosting it for evenings and early mornings.

People spend about 12-14 hours a day at home on average. The rest of the time an empty house needs minimal heating. And considering that much of the time at home your family is sleeping, it can make a huge difference setting your home's comfort level to 18° Celsius overnight which is considered to be the optimal sleeping temperature.

Using TIME mode and your controller, set different temperatures for Morning, Day, Evening, or Night. For example: 'Morning' mode might start at 7:00 @ 23°C and then shift to 'Day' at 8:30 @ 17°C when everyone is off to work and school. 'Evening' mode might start at 16:00 @ 22°C and then shift to 'Night' at 23:00 @ 18°C. Setting temperatures for these four periods can save a lot on your power bill plus you can adjust for weekdays versus weekend days.

TIME MODE: OTHER DEVICES

The High Load Switch can be connected to products other than ones that are thermostatically-controlled, such as electric panels, outlets, and banks of lights. Time Mode provides an extremely powerful ability to schedule ON and OFF cycles for groups of connected devices. Here are just a few ways Time Mode can add convenience, comfort, safety, and savings to your home:

- Disable electric outlets connected to power-hungry devices such as washing machines, clothes dryers, and dishwashers during times when power is expensive.
- Turn OFF your electric water heater/boiler when on vacation or even overnight and back ON again in the morning.
- Disable electric outlets when family members are at work or on vacation to prevent a fire from having left an appliance on (kettle, clothes iron, curling iron, etc.).
- Pre-schedule all house and yard lights to turn ON before visitors arrive at your vacation home.

And just as with the High Load Switch thermostat functions, through a controller you can assign attached devices to be ON or OFF during Morning, Day, Evening, or Night periods. This can make it easy to turn OFF outlets connected to game consoles at night or schedule all outdoor lights for evening turn-ON and morning turn-OFF. The possibilities are limited only by the creativity of the user of the High Load Switch.

POWERFULLY CUSTOMIZABLE

There are eight different modes that can be selected for the High Load Switch using a pilot wire to another device (e.g. alarm panel, wall switch, etc.):

- **Invert State** - If ON, turn OFF when circuit is closed (or if OFF, switch ON).
- **Momentary** - Switch ON when pilot wire circuit is closed, switch OFF when opened.
- **Momentary Reversed** - Switch OFF when pilot wire circuit is opened, switch ON when closed.
- **Switch ON Only** - When the pilot wire circuit is closed (i.e. short-circuited).
- **Switch OFF Only** - When the pilot wire circuit is closed (i.e. short-circuited).
- **Switch to Mode** - Switch to specific thermostat mode (pre-configured in parameter menu).

The High Load Switch relay output can also be controlled by an internal timer. For example, after the switch is turned ON, it can be configured to automatically switch OFF a specified time later (or vice-versa: turn ON after being turned OFF).

- **Timer (ON then OFF)** - Switch ON when pilot wire circuit is closed, then Switch OFF after specified time.
- **Timer (OFF then ON)** - Switch OFF when pilot wire circuit is closed, then Switch ON after specified time.

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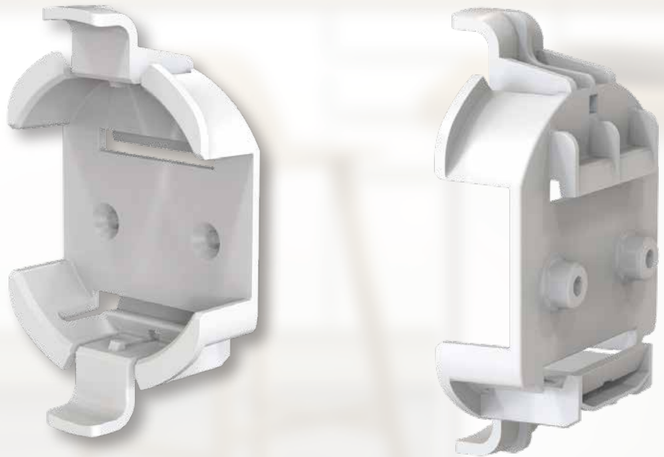

MAKE CIRCUIT BREAKERS IMPOSSIBLY SMART

Is your DIN rail a ‘dumb’ rail?

Since the HELTUN High Load Switch can handle up to 16 Amp loads, it is a perfect addition to your circuit breaker panel for monitoring and controlling groups of devices from the Internet through a Z-Wave gateway, such as:

- Outlets connected to major appliances
- Outlets connected to high load small appliances
- Entire groups of electric outlets
- Entire groups of lights

The Micromodule Mounting Adaptor is available from HELTUN as an accessory for the High Load Switch to fit standard DIN rails (50mm width), or it can also be mounted directly on the wall using the supplied screws & anchors.

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SAFETY

There are a number of ways that the High Load Switch can add to the safety of your home.

- **Overload –** If the High Load Switch detects too much wattage being drawn from connected devices - such as multiple connected electric outlets - it will automatically shut down to protect against circuit overload. This is useful for many applications where multiple loads are connected to one High Load Switch.
- **Overheat –** The High Load Switch also constantly monitors temperature offering multiple layers of protection. With an external NTC sensor, it monitors the temperatures inside the junction box enabling automatic disconnection, and notification of the user, if an outlet gets too hot. It can even notify the user of rising temperatures prior to reaching a critical shutoff level, after which it will automatically shut off the outlet when it crosses a dangerous threshold.
- **High Load Timeout –** If a family member leaves a device turned ON that draws a lot of power for a long time - such as a clothes iron connected for more than 1 hour - the High Load Switch can be configured to automatically shut OFF connected outlets to prevent a fire.

Users can define the high load, time, and temperature shutoff limits and notification settings in the High Load Switch parameters using a Z-Wave controller.

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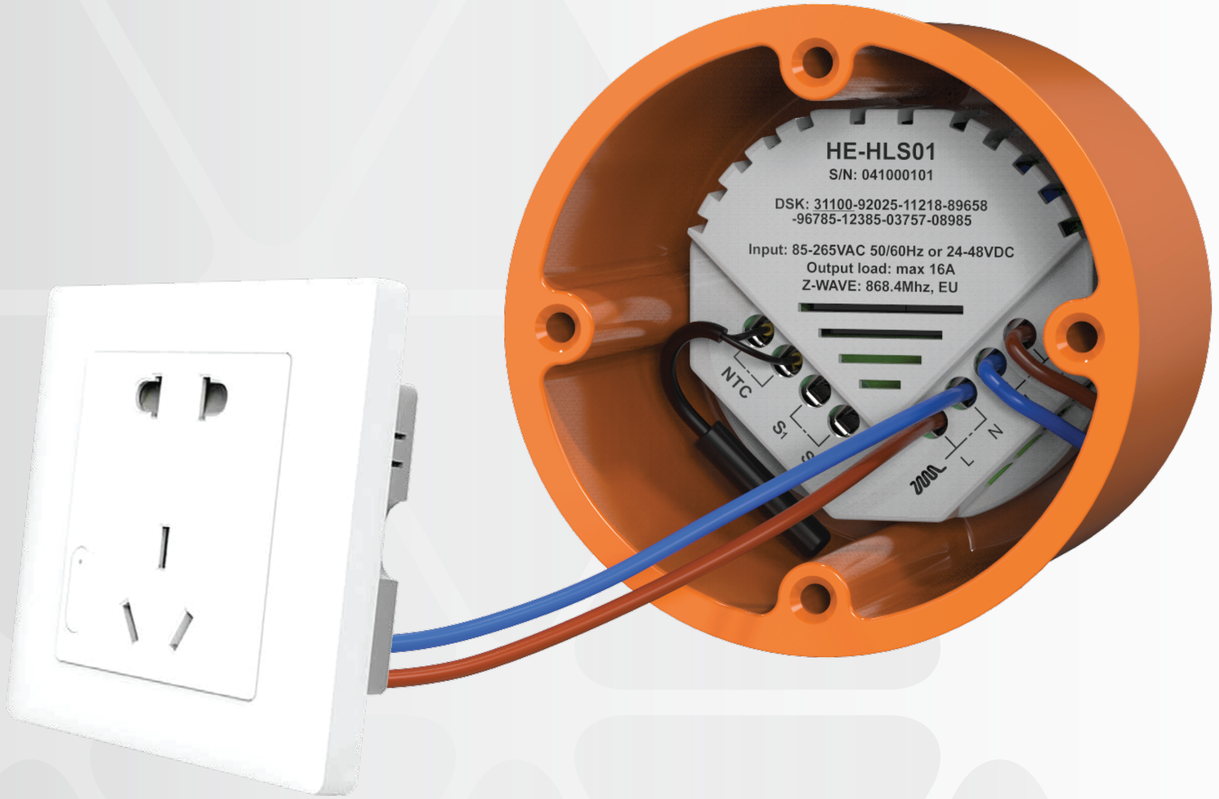
EASY TO INSTALL

The HELTUN High Load Switch can be easily installed into any standard electrical junction box (rectangular, square, or round) in just minutes.
Installation must only be performed by someone trained in handling high voltage electrical systems.



HELTUN

Zipato

Athom Homey

HomeSeer

Vera

Fibaro
Home Center Lite

Eedomus

Fibaro
Home Center 2

Z-Wave.me
RaZberry

Z-WAVE PLUS V2 CERTIFIED

You can connect HELTUN devices to a Smart Home controller using the latest Z-Wave Plus V2 700 platform. HELTUN features advanced Smart Start technology for easy system integration, and the Security 2 (S2) framework with AES 256 encryption for safe data transfer.

This High Load Switch is compatible with all Z-Wave certified controllers and devices that properly implement Z-Wave switch and thermostat classes. Using a Z-Wave controller, you can manage all switch functions via a mobile app including temperature & mode changes, viewing energy consumption charts, and much more.

Up to 10 separate devices can be connected to your HELTUN High Load Switch. You can associate it with any Z-Wave compatible ON/OFF switch, or other Switch, to control different climate systems in a room. You can even connect motion sensors and change High Load Switch modes when people are detected in the house.

HELTUN devices are compatible with all Z-Wave frequencies for different countries (Europe, Russia, Israel, Australia, USA, India, Hong Kong, China, Japan, and Korea). The correct frequency can be selected in the device menu.

HELTUN periodically releases new device firmware with added features which can be remotely updated via an encrypted OTA (Over-The-Air) process.

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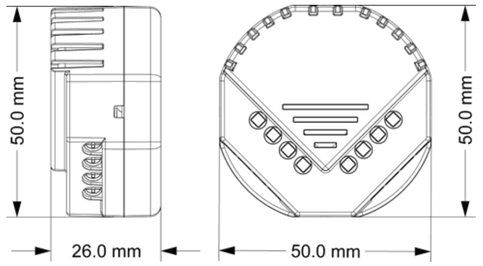

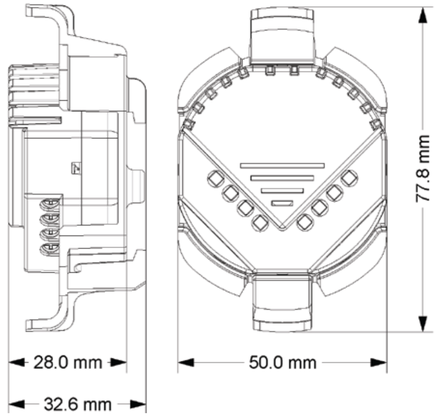

TECHNICAL SPECIFICATIONS:

- Dimensions: 50x50x26mm
- Material: Flame retardant plastic
- Color: White
- Operating temperature: 0°C to +60°C
- Power supply: 85-265VAC 50Hz/60Hz, or 24-48VDC
- Power consumption: <1W
- Maximum resistive load: 16A, 4000W @ 220V
- Relay switching with HELTUN Advanced Zero-Cross Technology
- Relay lifetime: 100.000 cycles
- External floor temperature sensor
  - NTC 10kΩ (included)
  - Measurement range: -30°C to +80°C
  - Accuracy: ±0.5°C
- Energy consumption meter
- IP class: IP21
- Z-Wave Plus V2 SDK: V7.11
- Z-Wave module: ZGM130S
- Mounting – either:
  - Flush electrical junction box: round, rectangular or square type – min. depth 40mm
  - Optional adapter for DIN Rail mounting (50mm width) or on wall screwing

FUNCTIONAL SPECIFICATIONS :

- Options for Inclusion/exclusion to/from Z-Wave network
  - Non-Secure
  - S0 Secure
  - S2 Unauthorized, S2 Authorized with Key
- Association control of 10 devices from network
- Six operation modes: COM, ECO, VAC, DRY, TIME, MANUAL
- Four Schedules: Morning, Day, Evening & Night
  - Time & Temperature Set Point (Heating Devices)
  - Time Only (All Other Devices)
- Eight relay modes (using pilot wire to another device):
  - Invert State
  - Momentary
  - Momentary Reversed
  - Switch ON Only
  - Switch OFF Only
  - Switch to Mode
  - Timer (ON then OFF)
  - Timer (OFF then ON)
- Three Safety Modes with Notification & Auto Shutoff:
  - Overload (auto-shutoff on overload)
  - Overheat (auto-shutoff on outlet over-temp)
  - High Load Timeout (notification and auto-shutoff on high load timeout)
- Usable with different NTC-sensors: Resistance value range: 1kΩ – 100kΩ
- Temperature sensor calibration
- Temperature set intervals: 4°C – 37°C
- Temperature limiter
- Set temperature hysteresis
- Temperature measurement: Celsius (°C) or Fahrenheit (°F)
- Energy consumption meter reset
- Factory reset button
- OTA (Over-The-Air) firmware update

Z-WAVE CLASSES:

CLASSES GENERIC_TYPE_THERMOSTAT
SPECIFIC_TYPE_THERMOSTAT_GENERAL_V2
COMMAND_CLASS_BASIC
COMMAND_CLASS_SUPERVISION
COMMAND_CLASS_SECURITY_2
COMMAND_CLASS_THERMOSTAT_SETPOINT_V3
COMMAND_CLASS_THERMOSTAT_SETBACK
COMMAND_CLASS_THERMOSTAT_MODE_V3
COMMAND_CLASS_THERMOSTAT_OPERATING_STATE
COMMAND_CLASS_SENSOR_MULTILEVEL_V7
COMMAND_CLASS_VERSION
COMMAND_CLASS_MANUFACTURER_SPECIFIC
COMMAND_CLASS_ZWAVEPLUS_INFO
COMMAND_CLASS_METER_V3
COMMAND_CLASS_DEVICE_RESET_LOCALLY
COMMAND_CLASS_POWERLEVEL
COMMAND_CLASS_CLOCK
COMMAND_CLASS_CONFIGURATION_V2
COMMAND_CLASS_ASSOCIATION
COMMAND_CLASS_ASSOCIATION_GRP_INFO
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V3

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