ThermoFloor
Heating systems

TECHNICAL AND FUNCTIONAL SPECIFICATION

Multireg® Z-Wave thermostat TF 016

Heatit® Z-Wave thermostat TF 021

Engineering note

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1. TERMINOLOGY

Abbreviations used in the lists and their meanings

- TBD   To-Be-Defined, these will be defined later on
- TBU   To-Be-Updated, these will be updated later on

2. INTRODUCTION

This document describes the Z-Wave thermostat operation from the Z-Wave point of view.

2.1 Z-Wave essentials

2.1.1 Z-Wave product information

- Supports Z-Wave beaming technology?   Yes
- Supports Z-Wave network security?   Yes
- Supports Z-Wave AES-128 security?   No

2.1.2 Z-Wave technical

- Z-Wave frequency   Europe
- Z-Wave manufacturer ID: 0x019B
- Z-Wave product ID: 0x0001
- Z-Wave product type: 0x0001
- Z-Wave device type/ role type: Thermostat - HVAC / Always on slave

2.2 Thermostat features

The thermostat has the following Z-Wave related features:

- This is a Z-Wave Plus certified device
- 3 operating states: Heat/ Energy saving heat/ Off
- Temperature setpoint for CO - comfort mode (Heat)
- Temperature setpoint for ECO - economy mode (Energy saving heat)
- Room temperature sensor

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Thermostat features (cont.)

- Support for controlling 8 external switching units (assoc. grp. 2)
- Association group 1: Max 1 unit, (Lifeline)
- Association group2: Max 8 units (On/off control)
- Configuration cc allows device configuration via gateway

3. COMMAND CLASSES

3.1 Supported command classes

The thermostat implements the following command classes:

- COMMAND_CLASS_BASIC
- COMMAND_CLASS_ZWAVEPLUS_INFO_V2
- COMMAND_CLASS_THERMOSTAT_SETPOINT_V3
- COMMAND_CLASS_SENSOR_MULTILEVEL
- COMMAND_CLASS_VERSION
- COMMAND_CLASS_THERMOSTAT_MODE
- COMMAND_CLASS_ASSOCIATION_GRP_INFO
- COMMAND_CLASS_ASSOCIATION
- COMMAND_CLASS_POWERLEVEL
- COMMAND_CLASS_MANUFACTURER_SPECIFIC
- COMMAND_CLASS_DEVICE_RESET_LOCALLY
- COMMAND_CLASS_CONFIGURATION_V2

3.1.1 COMMAND_CLASS_BASIC

The thermostat will change the operating mode when it receives BASIC_SET:

- BASIC_SET value 0x00: Thermostat enters Energy saving heat mode (ECO)
- BASIC_SET value 0xFF: Thermostat enters Heat mode (CO)

With BASIC_GET, the device reports its state with BASIC_REPORT using the same values as above.

3.1.2 COMMAND_CLASS_THERMOSTAT_SETPOINT_V3

The device supports the following setpoints:

- THERMOSTAT_SETPOINT_SET_SETPOINT_TYPE_ENERGY_SAVE_HEATING_V2
- THERMOSTAT_SETPOINT_SET_SETPOINT_TYPE_HEATING_1_V2
- Scale: Celsius
- Size: 2 bytes
- Precision: 1 decimal

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3.1.3 COMMAND_CLASS_SENSOR_MULTILEVEL

Thermostat implements room air temperature sensor functionality. The sensor always measures the room temperature no matter what the operating mode is set to.

- • Sensor type: Air temperature 0x01
- • Scale: Celsius 0x00
- • Size: 2 bytes
- • Precision: 1 decimal

3.1.4 COMMAND_CLASS_THERMOSTAT_MODE

The following modes are supported

- • OFF 0x00
- • HEAT 0x01
- • ENERGY 0x0B

3.1.5 COMMAND_CLASS_ASSOCIATION

- • Association group 1: Lifeline. All run-time reporting is addressed to this group. Max. nodes: 1.
- • Association group 2: On/off control. This controls external heaters replicating the state of the internal relay. Uses BASIC_SET command, values 0x00 (off) and 0xFF (on). Max. nodes: 8.

3.1.6 COMMAND_CLASS_MANUFACTURER_SPECIFIC

- • Manufacturer ID: 0x019B
- • Product ID: 0x0001
- • Product type: 0x0001

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3.1.3 COMMAND_CLASS_CONFIGURATION_V2

Supports parameter numbers from 1 to 12 (if cooling is enabled, 1-13)

Parameter	Description	Range	What if value is out of range
1	Operation mode	0x00 OFF 0x01 HEAT (0x02 COOL) 0x0B ENERGY SAVE HEAT	Ignored
2	Sensor mode	0: F-mode 1: A-mode 2: AF-mode 3: A2-mode 4: P-mode 5: FP-mode	Ignored
3	Floor sensor type	0: 10k NTC 1: 12k NTC 2: 15k NTC 3: 22k NTC 4: 33k NTC 5: 47k NTC	Ignored
4	DIFF I. Temperature control hysteresis	2-30 (0,2°C - 3.0°C)	Ignored
5	FLo, Floor min limit	50-400 (5.0°C - 40.0°C)	Ignored
6	FHi, Floor max limit	50-400 (5.0°C - 40.0°C)	Ignored
7	ALo, Air min limit	50-400 (5.0°C - 40.0°C)	Ignored
8	AHi, Air max limit	50-400 (5.0°C - 40.0°C)	Ignored
9	PLo, FP-mode P setting	0-9	Ignored
10	CO mode setpoint	50-400 (5.0°C - 40.0°C)	Ignored
11	ECO mode setpoint	50-400 (5.0°C - 40.0°C)	Ignored
12	P setting	0-10	Ignored
13 (only if cooling is enabled)	COOL setpoint	50-400 (5.0°C - 40.0°C)	Ignored

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