ThermoFloor
Heating systems

TECHNICAL AND FUNCTIONAL SPECIFICATION

Multireg® Z-Wave thermostat TF 016

Heatit® Z-Wave thermostat TF 021

Engineering note

Thermo-Floor AS I Østre Totenvei 24
N-2816 Gjøvik, NORWAY I T: +47 61 18 77 77

post@thermo-floor.no I www.thermo-floor.no

Table of contents

1. TERMINOLOGY 3

2. INTRODUCTION 3

2.1 Z-Wave essentials 3

2.1.1 Z-Wave product information 3
2.1.2 Z-Wave technical 3

2.2 Thermostat features 3

3. COMMAND CLASSES 4

3.1 Supported command classes 4

3.1.1 COMMAND_CLASS_BASIC 4
3.1.2 COMMAND_CLASS_THERMOSTAT_SETPOINT_V3 4
3.1.3 COMMAND_CLASS_SENSOR_MULTILEVEL 5
3.1.4 COMMAND_CLASS_THERMOSTAT_MODE 5
3.1.5 COMMAND_CLASS_ASSOCIATION 5
3.1.6 COMMAND_CLASS_MANUFACTURER_SPECIFIC 5

Thermo-Floor AS I Østre Totenvei 24
N-2816 Gjøvik, NORWAY I T: +47 61 18 77 77

post@thermo-floor.no I www.thermo-floor.no

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

Thermo-Floor AS I Østre Totenvei 24
N-2816 Gjøvik, NORWAY I T: +47 61 18 77 77

post@thermo-floor.no I www.thermo-floor.no

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)

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

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

Thermo-Floor AS I Østre Totenvei 24
N-2816 Gjøvik, NORWAY I T: +47 61 18 77 77
post@thermo-floor.no I www.thermo-floor.no

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

Thermo-Floor AS I Østre Totenvei 24
N-2816 Gjøvik, NORWAY I T: +47 61 18 77 77

post@thermo-floor.no I www.thermo-floor.no