EnOcean Equipment Profiles

REVISION HISTORY

Ver.	Editor	Change	Date
2.6.8	NM	Last xml edition of the EEP-Specification	Dec 31, 2017

specification may be used in development of a product or service for sale without being a participant or promoter member of the EnOcean Alliance and/or joint owner of the appropriate joint IPR.

These errata may not have been subjected to an Intellectual Property review, and as such, may contain undeclared Necessary Claims.

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D2-10: Room Control Panels with Temperature & Fan Speed Control, Room Status Information and Time Program

Submitter: Kieback&Peter GmbH & CO KG

Description
This VLD family consists of several profiles for a group of different bidirectional solar powered room control panels with environmental sensors and display.

These profiles support various functions and measurements, e.g. room temperature, humidity and independent generation of utilization time profiles with continuous dynamic adaptation and optimization as well as for the wireless transmission of measured values. Such a room control panel should primarily be operated with valve controllers (actuators) in order to provide a functional unit for simple room temperature control.

The profiles are designed to establish a communication between a battery-powered room control panel and an always receiving (e.g. line-powered) gateway. Because of the high energy consumption when switching on the radio-receiver, the room control panel is always the initiator of a data exchange (communication slot). It cannot be triggered by the gateway, because the room control panel is not in receiving mode most of the time.

The room control panel wakes up due to a timer trigger and sends the measured sensor data. The gateway is always required to respond with a command message or a heartbeat message within a maximum response time of 250ms. If no further commands are placed in the queue, the gateway must send a heartbeat message to terminate the communication slot. The room control panel then goes into sleep mode. If no response from the gateway is sent within 250ms, the room control panel goes immediately into sleep mode and the current communication slot is terminated. However, the room control panel maintains the communication interval and continues to transmit data in the next communication slot.

Data exchange **TYPE 00 ff**
Direction: bidirectional
Addressing: unicast (ADT)
Communication trigger: event- & time-triggered
Communication interval: can be defined during runtime
Trigger event: device status change
Tx delay: 1 s
Rx timeout: N/A
Teach-in
Teach-in method: UTE
Security
Encryption required: no
Security level format: N/A

Data exchange **TYPE 30 ff**
Direction: bidirectional
Addressing: unicast (ADT)
Communication trigger: event- or time-triggered
Communication interval: the interval is configurable from 1 minute to 1 day Default=10 minutes)

Trigger event: device status change
Tx delay: 250 ms
Rx timeout: 5 ms
Teach-in
Teach-in method: UTE
Security
Encryption required: no
Security level format: N/A

EEP Family Tables **TYPE 00 ff**

Message Type (ID)	Commands ... of TYPE	0x00	0x01	0x02
0x0	General Message	X	X	X
0x1	Data Message	X	X	X
0x2	Configuration Message	X	X	X
0x3	Room Control Setup	X	X	X
0x4	Time Program Setup	X	X	-

Parameters ... of TYPE	0x00	0x01	0x02
Message Identifier	X	X	X
Message Continuation Flag	X	X	X
Information Request Classifier	X	X	X
Feedback Classifier	X	X	X
General Message Type	X	X	X
Humidity	X	-	-
Humidity Validity Flag	X	-	-
Fan Speed Control	X	-	-
Fan Speed Validity Flag	X	-	-
Fan Speed Mode	X	-	-
Custom Warning 2	X	X	X
Custom Warning 1	X	X	X
Mold Warning	X	-	-
Window Open Detection	X	X	X
Battery Status	X	X	X
Solar-power Status	X	-	X
PIR Status	X	-	X
Occupancy Button Status	X	X	X
Cooling Operation Status	X	-	-
Heating Operation Status	X	-	-
Room Control Mode	X	X	X
Temperature Set Point Validity	X	X	X
Temperature Validity	X	X	X
Temperature Set Point	X	X	X
Room Temperature	X	X	X
PIR Status Lock	X	-	X
Temperature Scale Lock	X	X	-
Display Content Lock	X	X	X
Date / Time Lock	X	X	X
Time Program Lock	X	X	X
Occupancy Button Lock	X	X	X
Temperature Set Point Lock	X	X	-
Fan Speed Lock	X	-	-
Radio Communication Interval	X	X	X
Key Lock	X	X	-
Display Content	X	X	X
Temperature Scale	X	X	X
Daylight Saving Time Flag	X	X	X
Time Notation	X	X	X
Day	X	X	X
Month	X	X	X
Year	X	X	X
Minute	X	X	X
Hour	X	X	X

Date / Time Update Flag	X	X	X
Temperature Set Point Building Protection Mode	X	X	-
Temperature Set Point Pre-comfort Mode	X	-	-
Temperature Set Point Economy Mode	X	X	X
Temperature Set Point Comfort Mode	X	X	X
Temperature Set Point Flag Building Protection Mode	X	X	-
Temperature Set Point Flag Pre-comfort Mode	X	-	-
Temperature Set Point Flag Economy Mode	X	X	X
Temperature Set Point Flag Comfort Mode	X	X	X
End Time: Minute	X	X	-
End Time: Hour	X	X	-
Start Time: Minute	X	X	-
Start Time: Hour	X	X	-
Period	X	X	-
Time Program Deletion	X	X	-

The list of parameters could be structured following the features that always include a certain group of parameters.

EEP Family Tables **TYPE 30 ff**

Message Type (ID)	Commands ... of TYPE	0x30	0x31	0x32
0x00	Heartbeat Message	X	X	X
0x20	Acknowledge Message	X	X	X
0x21	Data Message	X	X	X
0x22	Status Message	X	X	X
0x23	Actuator Status	X	X	X
0x24	Set Point Limits Status	X	X	X
0x61	Configuration Message	X	X	X
0x62	Clock Setup	X	X	X
0x80	Room Temperature Override	X	X	-
0x81	Recent Temperature Set Point Override Absolute	X	X	X
0x82	Recent Temperature Set Point Override Relative	X	X	-
0x83	External Value	X	X	-
0x84	Humidity Override	X	X	-
0x85	Fan Speed Override	X	-	-
0x86	Room Mode Override	X	X	X-
0x87	Open Window Override	X	X	X
0x88	PIR Override	X	X	-
0x89	Occupancy Override	X	X	X
0x8A	Set Display Advice Symbol	X	X	-
0x8B	Autonomous Level Override	X	X	-
0x8C	Set Display Cooling/Heating Symbol	X	-	-
0x8D	Set Display Sun/Moon Symbol	X	-	-
0x8E	Display Content Override	X	X	X
0x8F	Daylight Saving Time Override	X	X	-
0x90	Set User Defined Info Codes	X	-	-
0x91	Temperature Set Point Vacation Mode	X	X	-
0x92	Temperature Set Point Comfort Mode	X	X	X
0x93	Temperature Set Point Eco Mode	X	X	X
0x94	Upper Temperature Set Point Limit Vacation Mode	X	X	-
0x95	Lower Temperature Set Point Limit Vacation Mode	X	X	-
0x96	Upper Temperature Set Point Limit Eco Mode	X	X	-
0x97	Lower Temperature Set Point Limit Eco Mode	X	X	-
0x98	Upper Temperature Set Point Limit Comfort Mode	X	X	-
0x99	Lower Temperature Set Point Limit Comfort Mode	X	X	-
0x9A	Temperature Set Point Range Relative	X	X	-
0x9B	Energy Saving Mode Override	X	X	-

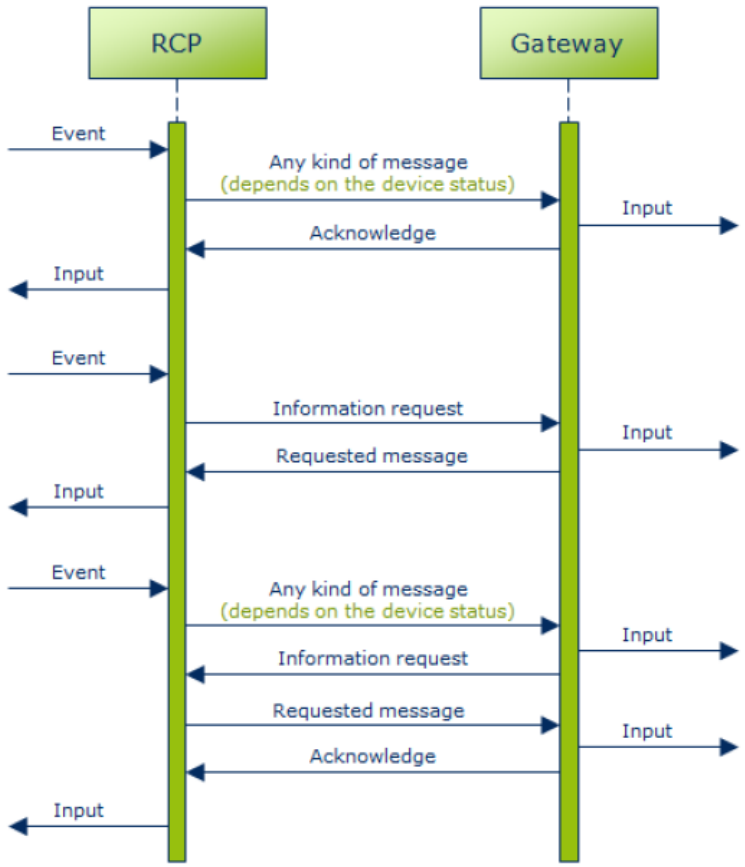
System Specification

Parameters ... of TYPE	0x30	0x31	0x32
Message Identifier	X	X	X
Humidity	X	X	X
Open Window Detect	X	X	X
Occupancy Button Status	X	X	-
Room Control Mode	X	X	X
Room Temperature	X	X	X
PIR Status	X	X	-
Fan Speed	X	-	-
Recent Temperature Set Point -absolute	X	X	X
Recent Temperature Set Point -relative	X	X	-
Analog Value	X	X	-
UI Type	X	X	X
Mold Warning/Advice	X	X	-
Display Content	X	X	-
Device Status	X	X	X
Party/Holiday Status	X	-	-
Heating/Cooling Status	X	-	-
Sun/Moon Status	X	-	-
Daylight Saving Time	X	X	-
Autonomous Level	X	X	-
Energy State	X	X	X
Solar Power Status	X	X	-
Temperature Set Point Vacation Mode	X	X	-
Temperature Set Point Eco Mode	X	X	X
Temperature Set Point Comfort Mode	X	X	X
Position, Valve 1	X	X	-
Position, Valve 2	X	X	-
Position, Valve 3	X	X	-
Position, Valve 4	X	X	-
Temperature, Actuator 1	X	X	-
Temperature, Actuator 2	X	X	-
Temperature, Actuator 3	X	X	-
Temperature, Actuator 4	X	X	-
Status, Actuator 1	X	X	-
Status, Actuator 2	X	X	-
Status, Actuator 3	X	X	-
Status, Actuator 4	X	X	-
Temperature Set Point Range Relative	X	X	-
Upper Temperature Set Point Limit Vacation Mode	X	X	-
Lower Temperature Set Point Limit Vacation Mode	X	X	-
Upper Temperature Set Point Limit Eco Mode	X	X	-
Lower Temperature Set Point Limit Eco Mode	X	X	-
Upper Temperature Set Point Limit Comfort Mode	X	X	-
Lower Temperature Set Point Limit Comfort Mode	X	X	-
PIR Status Lock	X	-	-
Temperature Scale Lock	X	-	-
Display Content Lock	X	-	-
Date / Time Lock	X	-	-
Time Program Lock	X	-	-

Occupancy Button Lock	X	-	-
Temperature Set Point Lock	X	X	-
Fan Speed Lock	X	-	-
Holiday Feature Lock	X	-	-
Time Bar	X	-	-
Season Energy Saving Mode	X	X	X
Mold Warning Signal	X	-	-
Mold Warning Coefficient	X	-	-
Mold Warning Limit	X	-	-
Set Point Mode Config	X	X	-
Display Content Toggle List	X	-	-
Radio Communication Interval	X	-	-
Temperature Scale	X	-	-
Heating Coefficient	X	X	-
Key Lock	X	-	-
Window Open Detection Stopping Time	X	X	-
Time Notation	X	X	-
Day	X	X	-
Month	X	X	-
Year	X	X	-
Minute	X	X	-
Date / Time Update Flag	X	X	-
Hour	X	X	-
Room Temperature Override	X	X	-
Recent Temperature Set Point Override	X	X	X
Recent Temperature Set Point Offset Override	X	X	-
External Value Scale and Unit	X	X	-
External Value	X	X	-
Humidity Override	X	X	-
Fan Speed Override	X	-	-
Room Mode Override	X	X	X
Open Window Override	X	X	X
PIR Override	X	X	-
Occupancy Override	X	X	X
Set Display Advice Symbol	X	X	-
Autonomous Level Override	X	X	-
Set Display Cooling/Heating Symbol	X	-	-
Set Display Sun/Moon Symbol	X	-	-
Display Content Override	X	X	-
Daylight Saving Time Override	X	X	-
Set User Defined Info Code	X	-	-
Temperature Set Point Vacation Mode	X	X	-
Temperature Set Point Comfort Mode	X	X	X
Temperature Set Point Eco Mode	X	X	X
Upper Temperature Set Point Limit Vacation Mode	X	X	-
Lower Temperature Set Point Limit Vacation Mode	X	X	-
Upper Temperature Set Point Limit Eco Mode	X	X	-
Lower Temperature Set Point Limit Eco Mode	X	X	-
Upper Temperature Setpoint Limit Comfort Mode	X	X	-
Lower Temperature Set Point Limit Comfort Mode	X	X	-
Temperature Set Point Range Relative	X	X	-
Energy Saving Mode Override	X	X	-

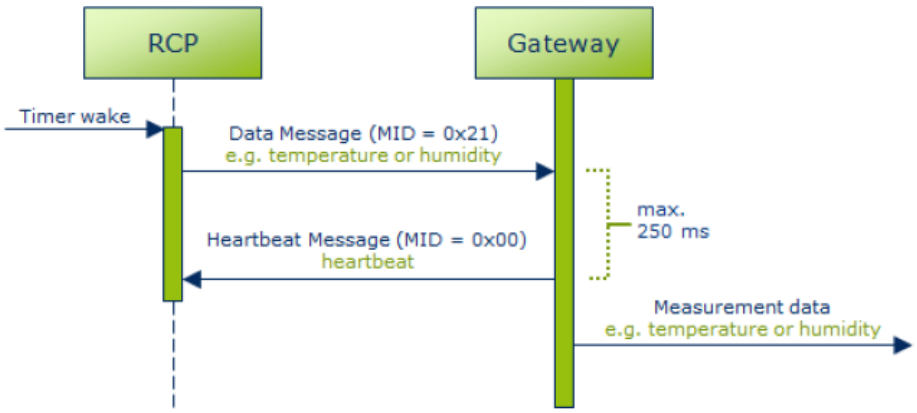
The list of parameters could be structured following the features that always include a certain group of parameters.

Telegram Definition **TYPE 00 ff**

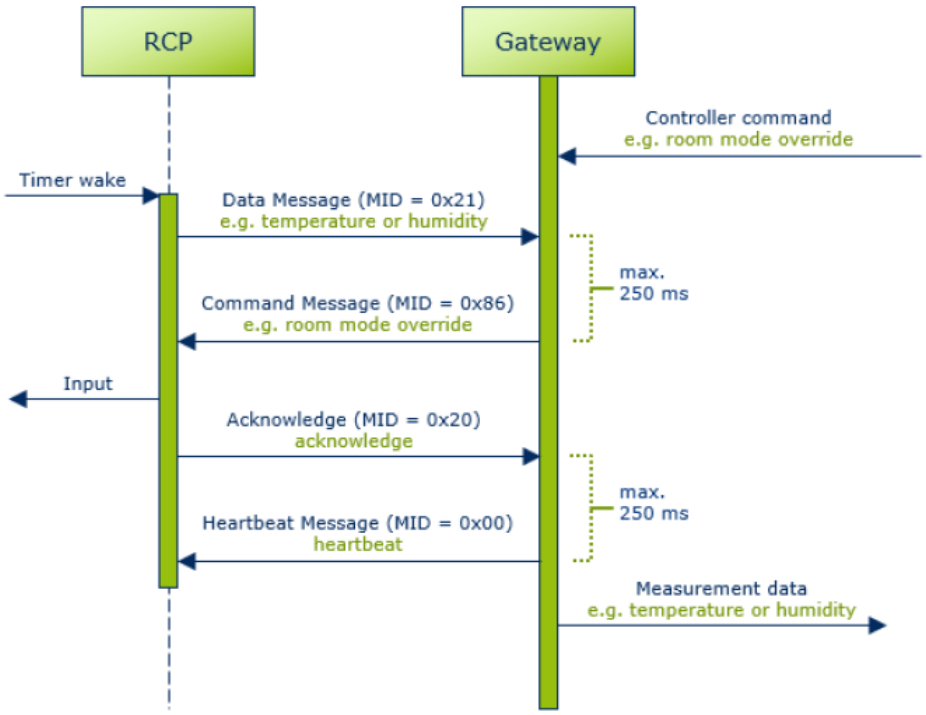


Telegram Definition **TYPE 30 ff**

Normal operation: Measurement data update, without further ado. (communication trigger: time wake)



Measurement data update, followed by a command message send by a gateway (communication trigger: time wake)



RORG	D2	**VLD Telegram**
FUNC	10	Room Control Panels with Temperature & Fan Speed Control, Room Status Information and Time Program
TYPE	32	Type 0x32 (description: see table)

Submitter: Kieback&Peter GmbH & CO KG

Heartbeat Message (0x00)

Direction: Gateway -> Sensor

Message ID **0x00** – Heartbeat Message

Data Byte	DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data	MID															

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x00: Heartbeat Message		
8	8	Not Used (= 0)					

Acknowledge Message (0x20)

Direction: Sensor -> Gateway

Message ID **0x20** – Acknowledge Message

Data Byte	DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data	MID															

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x20: Acknowledge Message		
8	8	Not Used (= 0)					

Data Message (0x21)

Direction: Sensor -> Gateway
Communication trigger: timer triggered

Message ID **0x21** - Data Message

Data Byte	DB_7								DB_6								DB_5								DB_4							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID								HUM								WOD		OBS			RCM			TMP							

	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Data				PIR		FS			TSP								TSPR								AV							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x21: Data Message		
8	8	Humidity	HUM	Measured relative air humidity (0.5% steps)	0...200	0...100	%RH
16	2	Open Window Detect	WOD	Indicates whether an open window has been detected	Enum: 0: NO_CHANGE 1: Window closed 2: Window open 3: Reserved		
18	2	Occupancy Button Status	OBS	Indicates if the occupancy button was pressed or is still in automatic mode	Enum: 0: NO_CHANGE 1: Occupied 2: Unoccupied 3: Automatic mode		
20	1	Not Used (= 0)					
21	2	Room Control Mode	RCM	Indicates the current room control mode	Enum: 0: NO_CHANGE 1: Eco mode 2: Comfort mode 3: Vacation mode		
23	9	Room Temperature	TMP	Measured room temperature (0.1K steps)	0...500	0...50	°C
32	3	Not Used (= 0)					
35	2	PIR Status	PIR	Indicates whether the motion sensor detected a movement	Enum: 0: NO_CHANGE 1: Movement detected 2: No movement detected		
					3: Locked		
37	3	Fan Speed	FS	Indicates the current fan speed level	Enum: 0: NO_CHANGE 1: Level 0 (OFF) 2: Level 1 3: Level 2 4: Level 3 5: AUTO 6: NO FAN 7: Reserved		
40	8	Recent Temperature Set Point - absolute	TSP	Indicates the current temperature set point as an absolute value (0.5K steps)	0...100	0...50	°C
48	8	Recent Temperature Set Point - relative	TSPR	Indicates the current temperature set point as a relative value in Kelvin (0.5K steps)	0...40	-10...10	K
56	8	Analog Value	AV	Analog measured value	0...255	0...100	%

Status Message (0x22)

Direction: Sensor -> Gateway
Communication trigger: event triggered

Message ID **0x22** - Status Message

Data Byte	DB_7								DB_6								DB_5								DB_4							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID								UITY						MW		DC				IEC				PHS			HCS			SMS	DST

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Data	AL			BS			SPS		SPB								SPE								SPC							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x22: Status Message		
8	4	UI Type	UITY	Indicates the user interface type	Enum: 1: No set point UI 2: Two buttons for set point 3: Rotary control for set point 4...15: Reserved		
12	2	Not Used (= 0)					
14	2	Mold Warning/Advice	MW	Mold warning and prevention advice	Enum: 0: NO_CHANGE 1: No warning 2: Mold warning – ventilation advice 3: Mold warning – heating advice		
16	4	Display Content	DC	Indicates the current main display content	Enum: 0: NO_CHANGE 1: Date 2: Time 3: Room temperature 4: Humidity 5: Temperature set point 6: Display off 7: External value 8...15: Reserved		

20	4	Device Status	IEC	Device status info code	Enum: 0: NO_CHANGE 1: Normal operating state 2: Actuator communication is weak 3: Actuator communication loss 4: RTC error 5: Actuator low energy 6: Reserved 7: Gateway communication loss 8: Reserved 9: Radio module error 10...15: Reserved
24	2	Party/Holiday Status	PHS	Indicates the current party or holiday status	Enum: 0: NO_CHANGE 1: Neither 2: Party mode 3: Holiday mode
26	2	Heating/Cooling Status	HCS	Indicates the current heating or cooling status	Enum: 0: NO_CHANGE 1: Neither 2: Heating mode 3: Cooling mode
28	2	Sun/Moon Status	SMS	Indicates the current sun or moon icon status	Enum: 0: NO_CHANGE 1: Neither 2: Sun icon 3: Moon icon
30	2	Daylight Saving Time	DST	Indicates the daylight saving time (summertime)	Enum: 0: NO_CHANGE 1: Automatic 2: + 0 h 3: + 1 h
32	3	Autonomous Level	AL	Indicates the current autonomous level, e.g. the device operates autonomic in stand-alone-mode or is fully controlled by a controller	Enum: 0: NO_CHANGE 1: Default

					2: Stand-alone mode 1 3: Stand-alone mode 2 4: Controlled mode 1 5: Controlled mode 2 6...7: Reserved		
35	3	Energy State	BS	Device energy state, e. g. battery power status	Enum: 0: NO_CHANGE 1: Line powered 2: Battery good 3: battery low 4: Battery critical 5...7: Reserved		
38	2	Solar Power Status	SPS	Indicates if the device is actually powered by its solar panel	Enum: 0: NO_CHANGE 1: Solar power good 2: Solar power low 3: Not solar powered		
40	8	Temperature Set Point Vacation Mode	SPB	Temperature set point for vacation room mode (0.5K steps)	0...100	0...50	°C
48	8	Temperature Set Point Eco Mode	SPE	Temperature set point for eco room mode (0.5K steps)	0...100	0...50	°C
56	8	Temperature Set Point Comfort Mode	SPC	Temperature set point for comfort room mode (0.5K steps)	0...100	0...50	°C

Actuator Status (0x23)

Direction: Sensor -> Gateway
Communication trigger: event triggered

Message ID 0x23 – Actuator Status

Data Byte	DB_8								DB_7								DB_6								DB_5								DB_4							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Data	MID								VP1								VP2								VP3								VP4							

	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Data	AT1				AT2				AT3				AT4				AS1				AS2				AS3				AS4			

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x23: Actuator Status		
8	8	Position, Valve 1	VP1	Current valve 1 position (1% steps)	0...100	0...100	%
16	8	Position, Valve 2	VP2	Current valve 2 position (1% steps)	0...100	0...100	%
24	8	Position, Valve 3	VP3	Current valve 3 position (1% steps)	0...100	0...100	%
32	8	Position, Valve 4	VP4	Current valve 4 position (1% steps)	0...100	0...100	%
40	4	Temperature, Actuator 1	AT1	Temperature of actuator 1 (5K steps)	0...14	0...70	°C
44	4	Temperature, Actuator 2	AT2	Temperature of actuator 2 (5K steps)	0...14	0...70	°C
48	4	Temperature, Actuator 3	AT3	Temperature of actuator 3 (5K steps)	0...14	0...70	°C
52	4	Temperature, Actuator 4	AT4	Temperature of actuator 4 (5K steps)	0...14	0...70	°C
56	4	Status, Actuator 1	AS1	Actuator 1 status	Enum: 0: NO_CHANGE 1: Line powered 2: Battery good 3: Battery low 4: Harvesting good 5: Harvesting low 6: Error 7: Not present		
60	4	Status, Actuator 2	AS2	Actuator 2 status	Enum: 0: NO_CHANGE 1: Line powered 2: Battery good 3: Battery low 4: Harvesting good 5: Harvesting low 6: Error 7: Not present		

64	4	Status, Actuator 3	AS3	Actuator 3 status	Enum: 0: NO_CHANGE 1: Line powered 2: Battery good 3: Battery low 4: Harvesting good 5: Harvesting low 6: Error 7: Not present
68	4	Status, Actuator 4	AS4	Actuator 4 status	Enum: 0: NO_CHANGE 1: Line powered 2: Battery good 3: Battery low 4: Harvesting good 5: Harvesting low 6: Error 7: Not present

Set Point Limits Status (0x24)

Direction: Sensor -> Gateway
Communication trigger: event triggered

Message ID **0x24** - Set Point Limits Status

Data Byte	DB_7								DB_6								DB_5								DB_4							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID								SPRR								SPBUL								SPBLL							

	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Data	SPEUL								SPELL								SPCUL								SPCLL							

Set Point Limits Status (0x24)

Direction: Sensor -> Gateway
Communication trigger: event triggered

Message ID **0x24** – Set Point Limits Status

Data Byte	DB_7								DB_6								DB_5								DB_4							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID								SPRR								SPBUL								SPBLL							

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Data	SPEUL								SPELL								SPCUL								SPCLL							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum:		
					0x24: Set Point Limits Status		
8	8	Temperature Set Point Range Relative	SPRR	Temperature set point range relative. The given value indicates the maximum permissible offset (positive or negative) to the temperature set point. (0.5K steps)	0...20	0...10	K
16	8	Upper Temperature Set Point Limit Vacation Mode	SPBUL	Sets the upper limit of the temperature set point for the vacation room mode (0.5K steps)	0...100	0...50	°C
24	8	Lower Temperature Set Point Limit Vacation Mode	SPBLL	Sets the lower limit of the temperature set point for the vacation room mode (0.5K steps)	0...100	0...50	°C
32	8	Upper Temperature Set Point Limit Eco Mode	SPEUL	Sets the upper limit of the temperature set point for the economic room mode (0.5K steps)	0...100	0...50	°C
40	8	Lower Temperature Set Point Limit Eco Mode	SPELL	Sets the lower limit of the temperature set point for the economic room mode (0.5K steps)	0...100	0...50	°C
48	8	Upper Temperature Set Point Limit Comfort Mode	SPCUL	Sets the upper limit of the temperature set point for the comfort room mode (0.5K steps)	0...100	0...50	°C
56	8	Lower Temperature Set Point Limit Comfort Mode	SPCLL	Sets the lower limit of the temperature set point for the comfort room mode (0.5K steps)	0...100	0...50	°C

Configuration Message (0x61)

Direction: bidirectional
Communication trigger: silent acknowledge

Message ID **0x61** - Configuration Message

Data Byte	DB_7								DB_6								DB_5								DB_4							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID								PSL		TSL		DCL		DTL		TPL		OBL		SPL		FSL		HFL		SBA		SEM		MWS	

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Data	MWC			MWH			SPM		DCTL										RCI				TS		HC			KL			WDST	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x61: Configuration Message		
8	2	PIR Status Lock	PSL	Indicates if the PIR status is transmitted	Enum: 0: NO_CHANGE 1: Transmitting on 2: Transmitting off 3: Reserved		
10	2	Temperature Scale Lock	TSL	Indicates if the temperature scale (°C/°F) can be changed at the room control panel	Enum: 0: NO_CHANGE 1: Unlocked 2: Locked 3: Reserved		
12	2	Display Content Lock	DCL	Indicates if the display content can be changed at the room control panel, e.g. toggle button	Enum: 0: NO_CHANGE 1: Unlocked 2: Locked 3: Reserved		
14	2	Date/Time Lock	DTL	Indicates if date and time can be changed at the room control panel	Enum: 0: NO_CHANGE 1: Unlocked 2: Locked 3: Reserved		
16	2	Time Program Lock	TPL	Indicates if the time program can be changed at the room control panel, in menu or auto adaptation	Enum: 0: NO_CHANGE 1: Unlocked 2: Locked / disabled 3: Reserved		
18	2	Occupancy Button Lock	OBL	Indicates if the occupancy button and menu entry is blocked at the room control panel, e.g. 2 = only menu entry is blocked, 3 = button and menu is blocked	Enum: 0: NO_CHANGE 1: Unlocked 2: Menu entry locked 3: Complete locked		

20	2	Temperature Set Point Lock	SPL	Indicates if the temperature set point are allowed to be changed at the room control panel	Enum: 0: NO_CHANGE 1: Unlocked 2: Menu entry locked 3: Complete locked
22	2	Fan Speed Lock	FSL	Indicates if the fan speed can be changed at the room control panel	Enum: 0: NO_CHANGE 1: Unlocked 2: Locked 3: Reserved
24	2	Holiday Feature Lock	HFL	Indicates if the holiday feature can be activated at the room control panel	Enum: 0: NO_CHANGE 1: Unlocked 2: Locked 3: Reserved
26	2	Time Bar	SBA	Indicates if the time bar is now activated, or not activated, or even the configuration is blocked	Enum: 0: NO_CHANGE 1: Bar is active 2: Bar is not active 3: Menu locked
28	2	Season Energy Saving Mode	SEM	Season energy saving mode, e.g. Summer-Mode	Enum: 0: NO_CHANGE 1: Automatic 2: Active 3: Not active
30	2	Mold Warning Signal	MWS	Indicates what mold warning signal is activated	Enum: 0: NO_CHANGE 1: Either activated 2: Communication active 3: Local display active
32	3	Mold Warning Coefficient	MWC	Defines room specific mold warning delta in degree kelvin	Enum: 0: NO_CHANGE 1: Default 2: 2 K 3: 5 K 4: 7 K 5: 10 K 6: 14 K 7: Ventilation advice disabled

35	3	Mold Warning Limit	MWH	Defines Room specific mold warning limit for heating	Enum: 0: NO_CHANGE 1: Default 2: 7 °C 3: 10 °C 4: 12 °C 5: 14 °C 6: 16 °C 7: Heating advice disabled
38	2	Set Point Mode Config	SPM	Indicates which set point mode is used. Temperature set point = absolute; temperature offset = relative/correction	Enum: 0: NO_CHANGE 1: Default 2: Temperature set point 3: Temperature offset
40	8	Display Content Toggle List	DCTL	Indicates what content is allowed to display. 8 Bits masked. Multiple choices are allowed.	Enum: 0x00: NO_CHANGE 0x01: Date is allowed 0x02: Time is allowed 0x04: Temperature is allowed 0x08: Humidity is allowed 0x10: Temp set point is allowed 0x20: External value is allowed 0x40: Analog channel 0x80: Default
48	2	Not Used (= 0)			

50	4	Radio Communication Interval	RCI	The configurable interval is 1 per minute to 1 per day. It defines the longest time between two consecutive telegrams. (default = 600 s)	Enum: 0: NO_CHANGE 1: 1 min. 2: 2 min. 3: 4 min. 4: 6 min. 5: 8 min. 6: 10 min. 7: 15 min. 8: 30 min. 9: 1 hour 10: 3 hours 11: 6 hours 12: 12 hours 13: 24 hours 14: No communication interval 15: Reserved
54	2	Temperature Scale	TS	Defines the used temperature scale for the room control panel display and menus	Enum: 0: NO_CHANGE 1: °C 2: °F 3: Reserved
56	3	Heating Coefficient	HC	Defines Room specific heating coefficient in degree kelvin per hour	Enum: 0: NO_CHANGE 1: Auto adapt 2: 4 K/h 3: 2 K/h 4: 1.4 K/h 5: 1 K/h 6: 0.7 K/h 7: 0.5 K/h

59	2	Key Lock	KL	Indicates if only the hidden keys or all keys (front side and back side) on the device are locked	Enum: 0: NO_CHANGE 1: Unlocked 2: Hidden keys locked 3: All keys locked
61	3	Window Open Detection Stopping Time	WDST	Window open detection stopping time	Enum: 0: NO_CHANGE 1: Default 2: 30 minutes 3: 1 hour 4: 1.5 hour 5: 2 hour 6: 3 hour 7: Window detection disabled

Clock Setup (0x62)

Direction: bidirectional
Communication trigger: silent acknowledge

Message ID **0x62** – Clock Setup

Data Byte	DB_5								DB_4								DB_3								DB_2							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID								TN			DAY									MON					YR							

Data Byte	DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Data			MIN								DTU	HR				

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x62: Clock Setup		
8	1	Not Used (= 0)					
9	2	Time Notation	TN	Defines the used time notation	Enum: 0: NO_CHANGE 1: Default 2: 24 h 3: 12 h		
11	5	Day	DAY	Day	1...31	1...31	Day
16	4	Not Used (= 0)					
20	4	Month	MON	Month	1...12	1...12	Mon
24	1	Not Used (= 0)					
25	7	Year	YR	Year = 2000 + x	0...127	2000...2127	Year
32	2	Not Used (= 0)					
34	6	Minute	MIN	Minute	0...59	0...59	Min
40	2	Not Used (= 0)					
42	1	Date/Time Update Flag	DTU	Indicates if an update of date and time is provided by the gateway	Enum: 0: NO_CHANGE 1: Update		
43	5	Hour	HR	Hour	0...23	0...23	Hour

COMMAND MESSAGE – Room Temperature Override (0x80)

Direction: Gateway -> Sensor

Message ID **0x80** – Room Temperature Override

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								TMPO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x80: Room temperature override		
8	15	Not Used (= 0)					
23	9	Room Temperature Override	TMPO	Room temperature override (0.1K steps)	0...500	0...50	°C

COMMAND MESSAGE – Recent Temperature Set Point Override Absolute (0x81)

Direction: Gateway -> Sensor

Message ID **0x81** – Recent Temperature Set Point Override Absolute

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								TSPO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x81: Recent temperature set point override absolute		
8	16	Not Used (= 0)					
24	8	Recent Temperature Set Point Override Absolute	TSPO	Recent temperature set point override absolute (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Recent Temperature Set Point Override Relative (0x82)

Direction: Gateway -> Sensor

Message ID **0x82** – Recent Temperature Set Point Override Relative

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								TSPRO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x82: Recent temperature set point override relative		
8	16	Not Used (= 0)					
24	8	Recent Temperature Set Point Offset Override	TSPRO	Recent temperature set point override relative offset, in Kelvin (0.5K steps)	0...40	-10...10	K

COMMAND MESSAGE – External Value (0x83)

Direction: Gateway -> Sensor

Message ID **0x83** – External Value

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																		EXVSU						EXV							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x83: External value		
8	10	Not Used (= 0)					
18	4	External Value Scale and Unit	EXVSU	Display representation for external value, scaling and unit	Enum: 0: NO_CHANGE 1: Temperature valid range 0 ... 1000, scale -40 ... 60, 0.1K steps, unit = °C 2: Humidity valid range 0 ... 200, scale 0 ... 100, 0.5% steps, unit = % RH 3: CO2/VOC valid range 0 ... 1000, scale 0 ... 5000, 5ppm steps, unit = ppm 4: VOC valid range 0 ... 100, scale 0 ... 100, 1% steps, unit = % 5...15: Reserved		
22	10	External Value	EXV	External value, raw data; scaling and unit in according to EXVSU	0...1023	0...1023	N/A

COMMAND MESSAGE – Humidity Override (0x84)

Direction: Gateway -> Sensor

Message ID **0x84** – Humidity Override

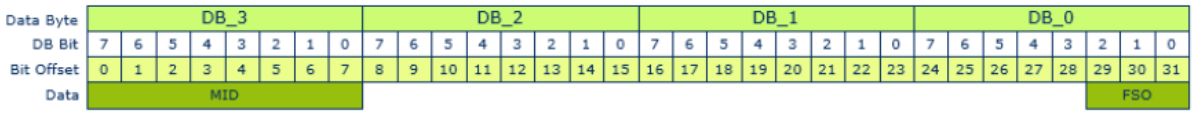
Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								HUMO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x84: Humidity Override		
8	16	Not Used (= 0)					
24	8	Humidity Override	HUMO	Humidity override (0.5% steps)	0...200	0...100	%RH

COMMAND MESSAGE – Fan Speed Override (0x85)

Direction: Gateway -> Sensor

Message ID **0x85** – Fan Speed Override

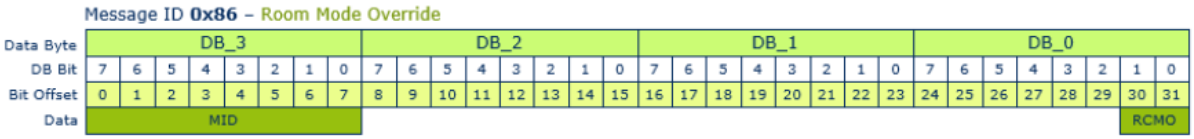


Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x85: Fan speed override		
8	21	Not Used (= 0)					
29	3	Fan Speed Override	FSO	Fan speed display symbol override	Enum: 0: NO_CHANGE 1: Level 0 (OFF) 2: Level 1 3: Level 2 4: Level 3 5: AUTO 6: NO FAN 7: Reserved		

COMMAND MESSAGE – Room Mode Override (0x86)

Direction: Gateway -> Sensor

Message ID **0x86** – Room Mode Override



Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x86: Room mode override		
8	22	Not Used (= 0)					
30	2	Room Mode Override	RCMO	Room mode override	Enum: 0: NO_CHANGE 1: ECO mode 2: COMFORT mode 3: VACATION mode		

COMMAND MESSAGE – Open Window Override (0x87)

Direction: Gateway -> Sensor

Message ID **0x87** – Open Window Override

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														WODO	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x87: Open window override		
8	22	Not Used (= 0)					
30	2	Open Window Override	WODO	Open window override	Enum: 0: NO_CHANGE 1: Window closed 2: Window open 3: Reserved		

COMMAND MESSAGE – PIR Override (0x88)

Direction: Gateway -> Sensor

Message ID **0x88** – PIR Override

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														PIRO	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x88: PIR override		
8	22	Not Used (= 0)					
30	2	PIR Override	PIRO	PIR override, e.g. a single movement from an external sensor detected	Enum: 0: NO_CHANGE 1: Movement detected 2...3: Reserved		

COMMAND MESSAGE – Occupancy Override (0x89)

Direction: Gateway -> Sensor

Message ID **0x89** – Occupancy Override

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														OBO	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x89: Occupancy override		
8	22	Not Used (= 0)					
30	2	Occupancy Override	OBO	Sets the room in occupied or unoccupied mode	Enum: 0: NO_CHANGE 1: Occupied 2: Unoccupied 3: Reserved		

COMMAND MESSAGE – Set Display Advice Symbol (0x8A)

Direction: Gateway -> Sensor

Message ID **0x8A** – Set Display Advice Symbol

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														SDAS	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x8A: Set display advice symbol		
8	22	Not Used (= 0)					
30	2	Set Display Advice Symbol	SDAS	Set display advice symbol	Enum: 0: NO_CHANGE 1: No warning 2: Mold – ventilation advice 3: Mold – heating advice		

COMMAND MESSAGE – Set Display Cooling/Heating Symbol (0x8C)

Direction: Gateway -> Sensor

Message ID **0x8C** – Set Display Cooling/Heating Symbol

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														SDCH	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x8C: Set display cooling/heating symbol		
8	22	Not Used (= 0)					
30	2	Set Display Cooling/Heating Symbol	SDCH	Sets the cooling/heating icon in the display	Enum: 0: NO_CHANGE 1: Both icons off 2: Heating icon 3: Cooling icon		

COMMAND MESSAGE – Set Display Sun/Moon Symbol (0x8D)

Direction: Gateway -> Sensor

Message ID **0x8D** – Set Display Sun/Moon Symbol

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														SDSM	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x8D: Set display sun/moon symbol		
8	22	Not Used (= 0)					
30	2	Set Display Sun/Moon Symbol	SDSM	Sets the sun/moon icon in the display	Enum: 0: NO_CHANGE 1: Both icons off 2: Sun icon 3: Moon icon		

COMMAND MESSAGE – Display Content Override (0x8E)

Direction: Gateway -> Sensor

Message ID **0x8E** – Display Content Override

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																												DCO			

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x8E: Display content override		
8	20	Not Used (= 0)					
28	4	Display Content Override	DCO	Sets the display to a specific mode	Enum: 0: NO_CHANGE 1: Date 2: Time 3: Room temperature 4: Humidity 5: Temperature set point 6: Display off 7: External value 8...15: Reserved		

COMMAND MESSAGE – Daylight Saving Time Override (0x8F)

Direction: Gateway -> Sensor

Message ID **0x8F** – Daylight Saving Time Override

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														DSTO	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x8F: Daylight saving time override		
8	22	Not Used (= 0)					
30	2	Daylight Saving Time Override	DSTO	Sets the summer time to the automatic mode or to a certain value	Enum: 0: NO_CHANGE 1: Automatic 2: +0 h 3: +1 h		

COMMAND MESSAGE – Set User Defined Info Code (0x90)

Direction: Gateway -> Sensor

Message ID **0x90** – Set User Defined Info Code

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								UDEC							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x90: Set user defined info code		
8	20	Not Used (= 0)					
28	4	Set User Defined Info Code	UDEC	User defined information code are to be displayed	Enum: 0: NO_CHANGE 1...9: Reserved 10: No user information 11: User info code 1 12: User info code 2 13: User info code 3 14: User info code 4 15: User info code 5		

COMMAND MESSAGE – Temperature Set Point Vacation Mode (0x91)

Direction: Gateway -> Sensor

Message ID **0x91** – Temperature Set Point Vacation Mode

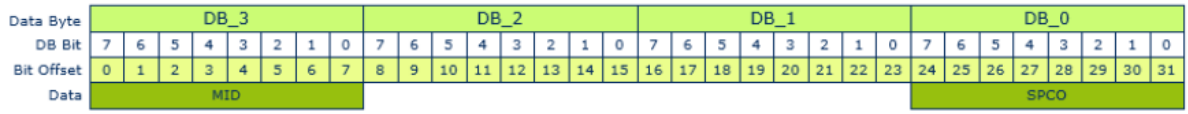
Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPBO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x91: Temperature set point vacation mode		
8	16	Not Used (= 0)					
24	8	Temperature Set Point Vacation Mode	SPBO	Sets the temperature set point for the vacation room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Temperature Set Point Comfort Mode (0x92)

Direction: Gateway -> Sensor

Message ID **0x92** – Temperature Set Point Comfort Mode

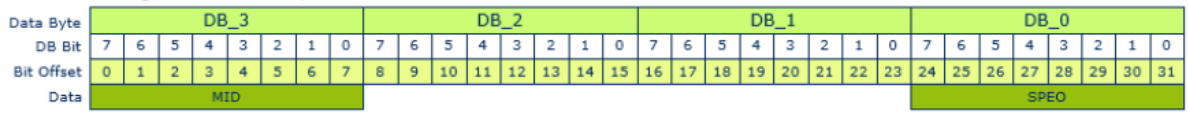


Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x92: Temperature set point comfort mode		
8	16	Not Used (= 0)					
24	8	Temperature Set Point Comfort Mode	SPCO	Sets the temperature set point for the comfort room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Temperature Set Point Eco Mode (0x93)

Direction: Gateway -> Sensor

Message ID **0x93** – Temperature Set Point Eco Mode



Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x93: Temperature set point eco mode		
8	16	Not Used (= 0)					
24	8	Temperature Set Point Eco Mode	SPEO	Sets the temperature set point for the economic room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Upper Temperature Set Point Limit Vacation Mode (0x94)

Direction: Gateway -> Sensor

Message ID **0x94** – Upper Temperature Set Point Limit Vacation Mode

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPBULO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x94: Upper temperature set point limit vacation mode		
8	16	Not Used (= 0)					
24	8	Upper Temperature Set Point Limit Vacation Mode	SPBULO	Sets the upper limit of the temperature set point for the vacation room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Lower Temperature Set Point Limit Vacation Mode (0x95)

Direction: Gateway -> Sensor

Message ID **0x95** – Lower Temperature Set Point Limit Vacation Mode

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPBLLO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x95: Lower temperature set point limit vacation mode		
8	16	Not Used (= 0)					
24	8	Lower Temperature Set Point Limit Vacation Mode	SPBLLO	Sets the lower limit of the temperature set point for the vacation room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Upper Temperature Set Point Limit Eco Mode (0x96)

Direction: Gateway -> Sensor

Message ID **0x96** – Upper Temperature Set Point Limit Eco Mode

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPEULO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x96: Upper temperature set point limit eco mode		
8	16	Not Used (= 0)					
24	8	Upper Temperature Set Point Limit Eco Mode	SPEULO	Sets the upper limit of the temperature set point for the economic room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Lower Temperature Set Point Limit Eco Mode (0x97)

Direction: Gateway -> Sensor

Message ID **0x97** – Lower Temperature Set Point Limit Eco Mode

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPELLO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x97: Lower temperature set point limit eco mode		
8	16	Not Used (= 0)					
24	8	Lower Temperature Set Point Limit Eco Mode	SPELLO	Sets the lower limit of the temperature set point for the economic room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Upper Temperature Set Point Limit Comfort Mode (0x98)

Direction: Gateway -> Sensor

Message ID **0x98** – Upper Temperature Set Point Limit Comfort Mode

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPCULO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x98: Upper temperature set point limit comfort mode		
8	16	Not Used (= 0)					
24	8	Upper Temperature Set Point Limit Comfort Mode	SPCULO	Sets the upper limit of the temperature set point for the comfort room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Lower Temperature Set Point Limit Comfort Mode (0x99)

Direction: Gateway -> Sensor

Message ID **0x99** – Lower Temperature Set Point Limit Comfort Mode

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPCLLO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x99: Lower temperature set point limit comfort mode		
8	16	Not Used (= 0)					
24	8	Lower Temperature Set Point Limit Comfort Mode	SPCLLO	Sets the lower limit of the temperature set point for the comfort room mode (0.5K steps)	0...100	0...50	°C

COMMAND MESSAGE – Temperature Set Point Range Relative (0x9A)

Direction: Gateway -> Sensor

Message ID **0x9A** – Temperature Set Point Range Relative

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																								SPRRO							

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x9A: Temperature set point range relative		
8	16	Not Used (= 0)					
24	8	Temperature Set Point Range Relative	SPRRO	Temperature set point range relative in Kelvin, e.g. 10K sets a -10K ... +10K maximum permissible offset (0.5K steps)	0...20	0...10	K

COMMAND MESSAGE – Energy Saving Mode Override (0x9B)

Direction: Gateway -> Sensor

Message ID **0x9B** – Energy Saving Mode Override

Data Byte	DB_3								DB_2								DB_1								DB_0							
DB Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Bit Offset	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Data	MID																														SEMO	

Offset	Size	Data	ShortCut	Description	Valid Range	Scale	Unit
0	8	Message identifier	MID	Defines the message identifier	Enum: 0x9B: Energy saving mode override		
8	22	Not Used (= 0)					
30	2	Energy Saving Mode Override	SEMO	Energy saving mode override, e.g. no heating in summertime	Enum: 0: NO_CHANGE 1: Automatic 2: Saving mode 3: Normal mode		