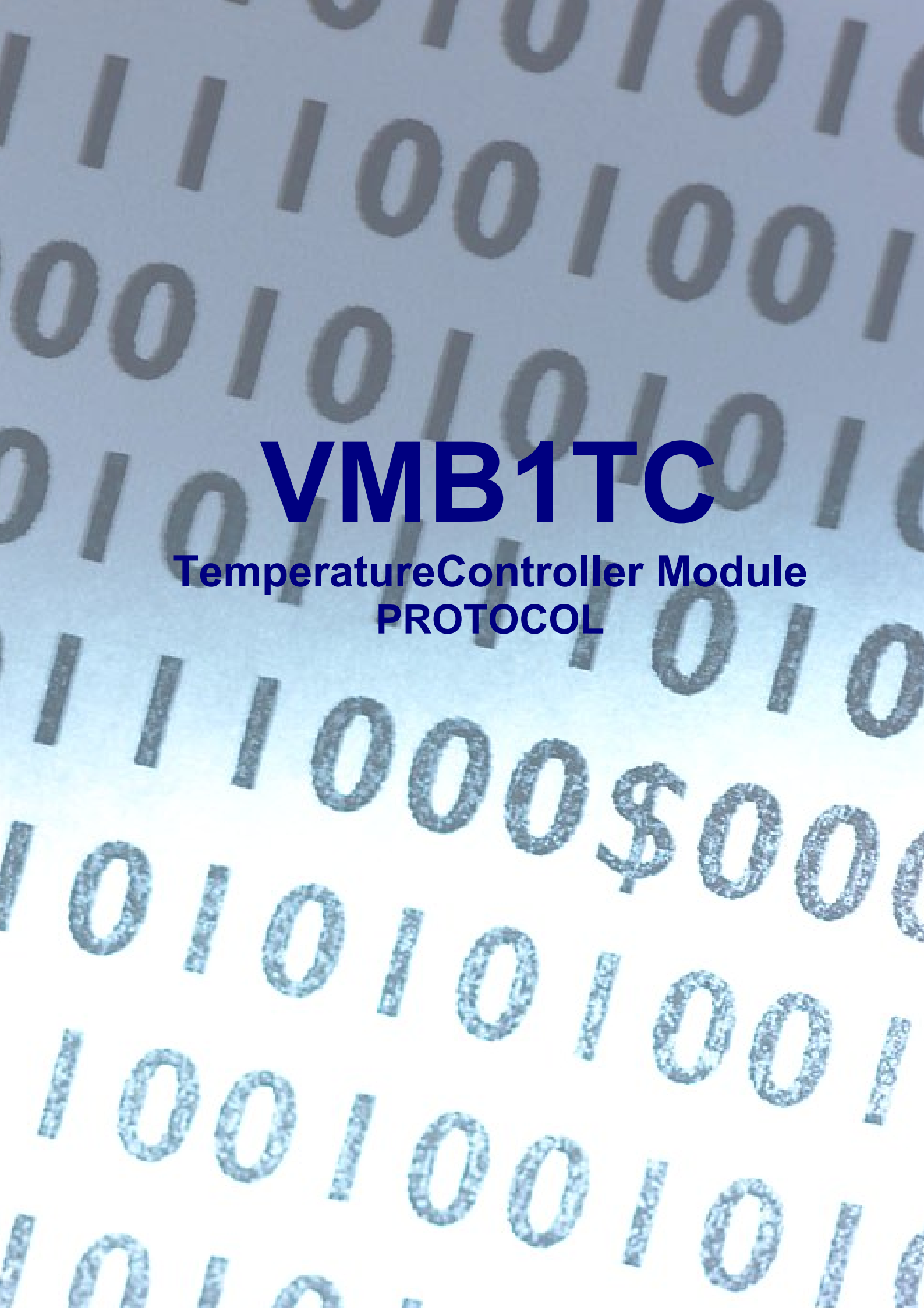

VMB1TC

TemperatureController Module

PROTOCOL

Binary format

<SOF-SID10...SID0-RTR-IDE-r0-DLC3...0-DATABYTE1...DATABYTEn-CRC15...CRC1-CRCDEL-ACK-ACKDEL-EOF7...EOF1-IFS3...IFS1>

bits	***Description***
SOF	Start Of Frame (always 0)
SID10 & SID9	Priority (00: highest … 11: lowest priority)
SID8…SID1	Address
SID0	Always 0
RTR	Remote Transmit Request
IDE	Identifier Extension (always 0)
r0	reserved (always 0)
DLC3…DLC0	Data Length Code (0…8)
Databyte1	Command
Databyte2	Parameter
Databyte3	Parameter
Databyte4	Parameter
Databyte5	Parameter
Databyte6	Parameter
Databyte7	Parameter
Databyte8	Parameter
CRC15…CRC1	Cyclic Redundancy Checksum
CRCDEL	CRC Delimiter (always 1)
ACK	Acknowledge slot (transmit 1 readback 0 if received correctly)
ACKDEL	Acknowledge Delimiter (always 1)
EOF7...EOF1	End Of Frame (always 1111111)
IFS3...IFS1	InterFrame Space (always 111)

The temperature controller module can transmit the following messages:

- Controller clock alarm output status
- Temperature controller status
- Temperature controller type
- First, second and third part of the controller name
- Bus error counter status
- Memory data
- Memory data block (4 bytes)
- Program step info
- Real time clock status

The temperature controller module can transmit the following commands:

- Module type request (scan for sensor types)

- Real time clock status request
- Set global clock alarm

- Set sensor program location
- Write program step
- Read program step
- Set program availability

- Set sensor zone number
- Sensor name request
- Sensor settings request
- Sensor status request
- Sensor temperature request
- Sensor time statistics request
- Lock sensor local control
- Unlock sensor local control
- Set sensor heating mode
- Set sensor cooling mode

- Set sensor default sleep time
- Switch sensor into comfort mode
- Switch sensor into day mode
- Switch sensor into night mode
- Switch into anti frost or cooler standby mode
- Set sensor target temperature
- Set sensor heating comfort temperature
- Set sensor heating day temperature
- Set sensor heating night temperature
- Set sensor heating anti frost temperature
- Set sensor upper heating temperature
- Set sensor temperature difference
- Set sensor hysteresis
- Set sensor cooling comfort temperature
- Set sensor cooling day temperature
- Set sensor cooling night temperature
- Set sensor lower cooling temperature
- Set sensor upper cooling temperature
- Set sensor calibration factor
- Reset sensor minimum/maximum temperature
- Reset sensor time statistics
- Enable/disable unjamming heater valve/pump
- Set sensor low temperature alarm
- Set sensor high temperature alarm
- Write to sensor memory data
- Set differential sensor address

The temperature controller module can receive the following commands:

- Real time clock status request
- Real time clock status
- Set global clock alarm
- Set clock alarm

- Module type request
- Temperature or thermostat type
- Bus error counter status request
- Module status request
- Module name request
- Read memory data
- Read memory data block (4 bytes)
- Memory dump request
- Write memory data
- Write memory block (4 bytes)

- Set sensor program location
- Read program step
- Write program step
- Program step info

- Sensor temperature
- Sensor status
- First, second and third part of the sensor settings
- First, second and third part of the sensor name
- Sensor time statistics
- Set sensor zone number

Transmits real time clock status request:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 1 databyte to send
DATABYTE1 = COMMAND_REALTIME_CLOCK_STATUS_REQUEST (H'D7')

Transmits the real time clock status:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_REALTIME_CLOCK_STATUS (H'D8')
DATABYTE2 = Day

Contents	Day
0	Monday
1	Tuesday
2	Wednesday
3	Thursday
4	Friday
5	Saturday
6	Sunday

DATABYTE3 = Hour (0…23)
DATABYTE4 = Minute (0…59)

Transmits set global clock alarm:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 7 databytes to send
DATABYTE1 = COMMAND_SET_ALARM_CLOCK (H'C3')
DATABYTE2 = Alarm number (1)
DATABYTE3 = Wake up hour (0…23)
DATABYTE4 = Wake up minute (0…59)
DATABYTE5 = Go to bed hour (0…23)
DATABYTE6 = Go to bed minute (0…59)
DATABYTE7 = Clock alarm enable flag (0 = disabled / 1 = enabled)

Transmits set sensor program location:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_SET_SENSOR_PROGRAM_LOCATION (H'BF')
DATABYTE2 = Module address
DATABYTE3 = Program type

Contents	Day
0…32	Sensor program
33	All rooms program
34	Zone 1 program
35	Zone 2 program
36	Zone 3 program
37	Zone 4 program
38	Zone 5 program
39	Zone 6 program
40	Zone 7 program
40…255	Not valid

DATABYTE4 = Sensor address

Transmits set sensor program availability:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_SENSOR_PROGRAM_AVAILABILITY (H'BC')
DATABYTE2 = Program availabitlity (0 = no program ; 1 = program available)
DATABYTE3 = Program type

Contents	Day
0…32	Sensor program
33	All rooms program
34	Zone 1 program
35	Zone 2 program
36	Zone 3 program
37	Zone 4 program
38	Zone 5 program
39	Zone 6 program
40	Zone 7 program
40…255	Not valid

DATABYTE4 = Sensor address

Transmits the memory data:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_MEMORY_DATA (H'FE')
DATABYTE2 = High memory address (H'0000'…H'14FF')
DATABYTE3 = LOW memory address
DATABYTE4 = memory data

Transmits memory data block (4 bytes):

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_MEMORY_DATA_BLOCK (H'CC')
DATABYTE2 = High start address of memory block (H'0000'…H'14FC')
DATABYTE3 = LOW start address of memory block
DATABYTE4 = memory data1
DATABYTE5 = memory data2
DATABYTE6 = memory data3
DATABYTE7 = memory data4

Transmit bus error counter status

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_BUSERROR_COUNTER_STATUS (H'DA')
DATABYTE2 = Transmit error counter
DATABYTE3 = Receive error counter
DATABYTE4 = Bus off counter

Transmits the first part of the module name:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_MODULE_NAME_PART1 (H'F0')
DATABYTE2 = Module number (1)
DATABYTE3 = Character 1 of the sensor name
DATABYTE4 = Character 2 of the sensor name
DATABYTE5 = Character 3 of the sensor name
DATABYTE6 = Character 4 of the sensor name
DATABYTE7 = Character 5 of the sensor name
DATABYTE8 = Character 6 of the sensor name

Transmits the second part of the module name:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_MODULE_NAME_PART2 (H'F1')
DATABYTE2 = Module number (1)
DATABYTE3 = Character 7 of the sensor name
DATABYTE4 = Character 8 of the sensor name
DATABYTE5 = Character 9 of the sensor name
DATABYTE6 = Character 10 of the sensor name
DATABYTE7 = Character 11 of the sensor name
DATABYTE8 = Character 12 of the sensor name

Transmits the third part of the module name:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 6 databytes to send
DATABYTE1 = COMMAND_MODULE_NAME_PART3 (H'F2')
DATABYTE2 = Module number (1)
DATABYTE3 = Character 13 of the sensor name
DATABYTE4 = Character 14 of the sensor name
DATABYTE5 = Character 15 of the sensor name
DATABYTE6 = Character 16 of the sensor name

Remarks:
Unused characters contain H'FF'.

Transmit the module status:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_TEMP_CONTROLLER_STATUS (H'C4')
DATABYTE2 = Output status (1 = activated)

Contents	Output channel
Xxx0xxxx	Wake up alarm output off
xxx1xxxx	Wake up alarm output on
Xx0xxxxx	Go to bed alarm output off
Xx1xxxxx	Go to bed alarm output on

DATABYTE3 = Wake up hour (0…23)
DATABYTE4 = Wake up minute (0…59)
DATABYTE5 = Go to bed hour (0…23)
DATABYTE6 = Go to bed minute (0…59)
DATABYTE7 = Module configuration settings

Contents	Configuration
Xxxxxxx0	Battery backup disabled
Xxxxxxx1	Battery backup enabled
Xxxxxx0x	Master clock disabled
Xxxxxx1x	Master clock enabled
Xxxxx0xx	Clock alarm disabled
xxxxx1xx	Clock alarm enabled
Xxxx0xxx	Celsius readout
Xxxx1xxx	Fahrenheit readout
Xxx0xxxx	Local clock alarm
Xxx1xxxx	Global clock alarm

DATABYTE8 = Language

Contents	Language
0	English
1	French
2	Dutch
3	Spanish
4	German

Transmits the module type:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_MODULE_TYPE (H'FF')
DATABYTE2 = NODETYPE_TEMPERATURE_CONTROLLER (H'0E')
DATABYTE4 = Build year
DATABYTE5 = Build week

Transmits program step info:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_PROGRAM_STEP_INFO (H'C1')
DATABYTE2 = Zone number

Contents	Zone
0	All rooms
1	Zone 1
2	Zone 2
3	Zone 3
4	Zone 4
5	Zone 5
6	Zone 6
7	Zone 7
8…255	No zone

DATABYTE3 = Sensor address
DATABYTE4 = Program step number (0…30)
DATABYTE5 = Program step time reference, mode & day

Contents	Program step time reference
00xxxxxx	Program step hour & minute
01xxxxxx	Wake up alarm time + relative time
10xxxxxx	Go to bed alarm time + relative time
11xxxxxx	Not valid

Contents	Program mode
xx00xxxx	Anti frost or cooler standby mode
xx01xxxx	Night mode
xx10xxxx	Day mode
xx11xxxx	Comfort mode

Contents	Program step day
Xxxx0000	Monday
Xxxx0001	Tuesday
Xxxx0010	Wednesday
Xxxx0011	Thursday
Xxxx0100	Friday
Xxxx0101	Saturday
Xxxx0110	Sunday
Xxxx0111	Saturday & Sunday
Xxxx1000	Monday … Friday
Xxxx1001	Monday … Saturday
Xxxx1010	Every day
Xxxx1011	Never
Xxxx1100	Never
Xxxx1101	Never
Xxxx1110	Never
Xxxx1111	Never

DATABYTE6 = Program step hour (0…23)
DATABYTE7 = Program step minute (0…59)
DATABYTE8 = Program step relative time

Contents	Program step time
00010000	Alarm time + 4h
00001111	Alarm time + 3h45m
. . .	…
00000001	Alarm time + 15m
00000000	Alarm time
10000001	Alarm time +15m
. . .	…
10001111	Alarm time – 3h15m
10010000	Alarm time – 4h

Transmits the module output status:

SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_OUTPUT_STATUS (H'00')
DATABYTE2 = Output channel just activated (1 = just activated)

Contents	Output channel
xxx1xxxx	Wake up alarm output just activated
xx1xxxxx	Go to bed alarm output just activated

DATABYTE3 = Outputs just deactivated (1 = just deactivated)

Contents	Output channel
xxx1xxxx	Wake up alarm output just deactivated
Xx1xxxxx	Go to bed alarm output just deactivated

DATABYTE4 = Link output

Contents	Output channel
xxx1xxxx	Link wake up alarm output
Xx1xxxxx	Link go to bed alarm output

Transmits write program step:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Program location address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_WRITE_PROGRAM_STEP (H'C2')
DATABYTE2 = Zone number

Contents	Zone
0	All rooms
1	Zone 1
2	Zone 2
3	Zone 3
4	Zone 4
5	Zone 5
6	Zone 6
7	Zone 7
8…255	No zone

DATABYTE3 = Sensor address
DATABYTE4 = Program step number (0…30)
DATABYTE5 = Program step time reference, mode & day

Contents	Program step time reference
00xxxxxx	Program step hour & minute
01xxxxxx	Wake up alarm time + relative time
10xxxxxx	Go to bed alarm time + relative time
11xxxxxx	Not valid

Contents	Program mode
xx00xxxx	Anti frost or cooler standby mode
xx01xxxx	Night mode
xx10xxxx	Day mode
xx11xxxx	Comfort mode

Contents	Program step day
Xxxx0000	Monday
Xxxx0001	Tuesday
Xxxx0010	Wednesday
Xxxx0011	Thursday
Xxxx0100	Friday
Xxxx0101	Saturday
Xxxx0110	Sunday
Xxxx0111	Saturday & Sunday
Xxxx1000	Monday … Friday
Xxxx1001	Monday … Saturday
Xxxx1010	Every day
Xxxx1011	Never
Xxxx1100	Never
Xxxx1101	Never
Xxxx1110	Never
Xxxx1111	Never

DATABYTE6 = Program step hour (0…23)
DATABYTE7 = Program step minute (0…59)
DATABYTE8 = Program step relative time

Contents	Program step time
00010000	Alarm time + 4h
00001111	Alarm time + 3h45m
. . .	…
00000001	Alarm time + 15m
00000000	Alarm time
10000001	Alarm time +15m
. . .	…
10001111	Alarm time – 3h15m
10010000	Alarm time – 4h

Transmits read program step:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Program location address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_READ_PROGRAM_STEP (H'C0')
DATABYTE2 = Zone number

Contents	Zone
0	All rooms
1	Zone 1
2	Zone 2
3	Zone 3
4	Zone 4
5	Zone 5
6	Zone 6
7	Zone 7
8…255	No zone

DATABYTE3 = Sensor address
DATABYTE4 = Program step number (0…30)

Transmits the module type request:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = module scan address
RTR = 1
DLC3...DLC0 = 0 databytes to send

Transmits set sensor zone number:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SET_SENSOR_ZONE_NUMBER (H'C5')
DATABYTE2 = Zone number

Contents	Zone
0	Sensor not assigned to a zone
1	Sensor assigned to zone 1
2	Sensor assigned to zone 2
3	Sensor assigned to zone 3
4	Sensor assigned to zone 4
5	Sensor assigned to zone 5
6	Sensor assigned to zone 6
7	Sensor assigned to zone 7
8…255	Not valid

Transmits sensor name request:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SENSOR_NAME_REQUEST (H'EF')
DATABYTE2 = Sensor number (1)

Transmits sensor settings request:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SENSOR_SETTINGS_REQUEST (H'E7')
DATABYTE2 = Sensor number (1)

Transmits sensor status request:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SENSOR_STATUS_REQUEST (H'FA')
DATABYTE2 = Sensor number (1)

Transmits lock sensor local control:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_LOCK_LOCAL_CONTROL (H'E1')
DATABYTE2 = Sensor number (1)

Transmits unlock sensor local control:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_UNLOCK_LOCAL_CONTROL (H'E2')
DATABYTE2 = Sensor number (1)

Transmits set sensor heating mode:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SET_HEATING_MODE (H'E0')
DATABYTE2 = Sensor number (1)

Transmits set sensor cooling mode:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SET_COOLING_MODE (H'DF')
DATABYTE2 = Sensor number (1)

Transmits sensor temperature request:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SENSOR_TEMPERATUTE_REQUEST (H'E5')
DATABYTE2 = Autosend time interval into seconds
(valid range: 10…255s)
(1…9 = autosend when temperature changed)
(0 = autosend disabled)

Transmits sensor time statistics request:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_TIME_STATISTICS_REQUEST (H'C7')
DATABYTE2 = statistics mode index

Contents	Time statistics request
1xxxxxx1	Heating antifreeze mode time statistics
1xxxxx1x	Heating night mode time statistics
1xxxx1xx	Heating day mode time statistics
1xxx1xxx	Heating comfort mode time statistics
1xx1xxxx	Heating global time statistics
x1xxxxx1	Cooling standby mode time statistics
x1xxxx1x	Cooling night mode time statistics
x1xxx1xx	Cooling day mode time statistics
x1xx1xxx	Cooling comfort mode time statistics
x1x1xxxx	Cooling global time statistics

Transmits set sensor default sleep time:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes to send
DATABYTE1 = COMMAND_SET_DEFAULT_SLEEP_TIME (H'E3')
DATABYTE2 = High byte of the default sleep time
DATABYTE3 = Low byte of the default sleep time into minutes
(valid range H'0001' to H'FEFF' or 1min to 65.279min)

Transmits switch sensor into comfort mode:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes to send
DATABYTE1 = COMMAND_SWITCH_TO_COMFORT_MODE (H'DB')
DATABYTE2 = High byte of the sleep time
DATABYTE3 = Low byte of the sleep time into minutes

Remark:
If the sleep time contains H'FF00', the command is a program step.
A sleep time between H'0001' and H'FEFF' (1 to 65.279min) starts the sleep timer for that time and program steps will not be executed during that time.
A sleep time of H'FFFF' puts the sensor into manual mode. Program steps will not be executed anymore and local control is disabled.
A value of zero for the sleep time cancels the manual mode or sleep timer.

Transmits switch sensor into day mode:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes to send
DATABYTE1 = COMMAND_SWITCH_TO_DAY_MODE (H'DC')
DATABYTE2 = High byte of the sleep time
DATABYTE3 = Low byte of the sleep time into minutes

Remark:
If the sleep time contains H'FF00', the command is a program step.
A sleep time between H'0001' and H'FEFF' (1 to 65.279min) starts the sleep timer for that time and program steps will not be executed during that time.
A sleep time of H'FFFF' puts the sensor into manual mode. Program steps will not be executed anymore and local control is disabled.
A value of zero for the sleep time cancels the manual mode or sleep timer.

Transmits switch sensor into night mode:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes to send
DATABYTE1 = COMMAND_SWITCH_TO_NIGHT_MODE (H'DD')
DATABYTE2 = High byte of the sleep time
DATABYTE3 = Low byte of the sleep time into minutes

Remark:
If the sleep time contains H'FF00', the command is a program step.
A sleep time between H'0001' and H'FEFF' (1 to 65.279min) starts the sleep timer for that time and program steps will not be executed during that time.
A sleep time of H'FFFF' puts the sensor into manual mode. Program steps will not be executed anymore and local control is disabled.
A value of zero for the sleep time cancels the manual mode or sleep timer.

Transmits switch into anti frost or cooler standby mode:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes to send
DATABYTE1 = COMMAND_SWITCH_TO_SAFE_MODE (H'DE')
DATABYTE7 = High byte of the sleep time
DATABYTE8 = Low byte of the sleep time into minutes

Remark:
If the sleep time contains H'FF00', the command is a program step.
A sleep time between H'0001' and H'FEFF' (1 to 65.279min) starts the sleep timer for that time and program steps will not be executed during that time.
A sleep time of H'FFFF' puts the sensor into manual mode. Program steps will not be executed anymore and local control is disabled.
A value of zero for the sleep time cancels the manual mode or sleep timer.

Transmits set sensor target temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Current temperature index (0)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor heating comfort temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating comfort temperature index (1)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor heating day temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating day temperature index (2)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor heating night temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating night temperature index (3)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor heating anti frost temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating anti frost temperature index (4)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
00100100	18°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor temperature difference:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Turbo difference index (5)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
00010100	10°C
00000001	0.5°C
00000000	0°C
11111111	-0.5°C
11110110	-10°C

Transmits set sensor hysteresis:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Hysteresis index (6)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
00011111	15.5°C
00000010	1°C
00000001	0.5°C
00000000	0°C

Transmits set sensor cooling comfort temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating comfort temperature index (7)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor cooling day temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating day temperature index (8)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor cooling night temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating night temperature index (9)
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor cooling standby temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating anti frost temperature index (H'0A')
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor calibration factor:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Calibration factor index (H'0B')
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
00001111	7.5°C
00000001	0.5°C
00000000	0°C
11111111	-0.5°C
11110000	-8°C

Transmits reset sensor minimum/maximum temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Minimum/maximum temperature index (H'0C')
DATABYTE3 = Reset minimum and/or maximum temperature

Contents	Reset temperature
00000001	Reset minimum temperature
00000010	Reset maximum temperature
00000011	Reset minimum & maximum temperature

Transmits reset sensor time statistics:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Time statistics index (H'0D')
DATABYTE3 = Reset time statistics

Contents	Reset time statistics
10000001	Reset heating antifreeze mode time statistics
10000010	Reset heating night mode time statistics
10000100	Reset heating day mode time statistics
10001000	Reset heating comfort mode time statistics
10010000	Reset heating global time statistics
01000001	Reset cooling standby mode time statistics
01000010	Reset cooling night mode time statistics
01000100	Reset cooling day mode time statistics
01001000	Reset cooling comfort mode time statistics
01010000	Reset cooling global time statistics

Transmits enable/disable unjamming heater valve/pump:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating anti frost temperature index (H'0E')
DATABYTE3 = Enable/disable unjamming heater valve and pump

Contents	Enable/disable unjamming
00000000	Disable unjamming heater valve & pump
00000001	Disable unjamming heater valve & enable unjamming pump
00000010	Enable unjamming heater valve & disable unjamming pump
00000011	Enable unjamming heater valve & pump

Transmits set sensor low temperature alarm:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Low temperature alarm index (H'0F')
DATABYTE3 = Low temperature alarm (resolution 0.5°)

Contents	Temperature set
01111000	60°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set sensor high temperature alarm:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Low temperature alarm index (H'10')
DATABYTE3 = High temperature alarm (resolution 0.5°)

Contents	Temperature set
01111000	60°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set lower cool temperature limit:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Set lower cool temperature index (H'11')
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set upper heat temperature limit:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Heating night temperature index (H'12')
DATABYTE3 = Temperature set (resolution 0.5°)

Contents	Temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Transmits set differential sensor address:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Set differential sensor address (H'13')
DATABYTE3 = Differential sensor address (H'FF' = no differential sensor)

Transmits write to sensor memory data:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_MEMORY_DATA (H'FC')
DATABYTE2 = High memory address (H'00')
DATABYTE3 = LOW memory address (H'00'...H'FF')
DATABYTE4 = memory data

'Real time clock status request' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 1 databyte received
DATABYTE1 = COMMAND_REALTIME_CLOCK_STATUS_REQUEST (H'D7')

'Real time clock status' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 4 databytes received
DATABYTE1 = COMMAND_REALTIME_CLOCK_STATUS (H'D8')
DATABYTE2 = Day

Contents	Day
0	Monday
1	Tuesday
2	Wednesday
3	Thursday
4	Friday
5	Saturday
6	Sunday

DATABYTE3 = Hour (0…23)
DATABYTE4 = Minute (0…59)

'Set sensor program location' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_SET_SENSOR_PROGRAM_LOCATION (H'BF')
DATABYTE2 = program location address
DATABYTE3 = Program type

Contents	Day
0…32	Sensor program
33	All rooms program
34	Zone 1 program
35	Zone 2 program
36	Zone 3 program
37	Zone 4 program
38	Zone 5 program
39	Zone 6 program
40	Zone 7 program
40…255	Not valid

DATABYTE4 = Sensor address

'Set global clock alarm' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 7 databytes to send
DATABYTE1 = COMMAND_SET_ALARM_CLOCK (H'C3')
DATABYTE2 = Alarm number (1)
DATABYTE3 = Wake up hour (0…23)
DATABYTE4 = Wake up minute (0…59)
DATABYTE5 = Go to bed hour (0…23)
DATABYTE6 = Go to bed minute (0…59)
DATABYTE7 = Clock alarm enable flag (0 = disabled / 1 = enabled)

'Module type request' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 1
DLC3...DLC0 = 0 databytes received

'Bus error counter status request' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 1 databytes to send
DATABYTE1 = COMMAND_BUS_ERROR_CONTER_STATUS_REQUEST (H'D9')

'Read data from memory' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_READ_DATA_FROM_MEMORY (H'FD')
DATABYTE2 = High memory address (H'0000'…H'14FF')
DATABYTE3 = LOW memory address

'Read data block from memory' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 databytes received
DATABYTE1 = COMMAND_READ_MEMORY_BLOCK (H'C9')
DATABYTE2 = High memory address (H'0000'…H'14FC')
DATABYTE3 = LOW memory address

'Memory dump request' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 1 databytes received
DATABYTE1 = COMMAND_MEMORY_DUMP_REQUEST (H'CB')

'Write data to memory' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 databytes received
DATABYTE1 = COMMAND_WRITE_DATA_TO_MEMORY (H'FC')
DATABYTE2 = High memory address (H'0000'…H'14FF')
DATABYTE3 = LOW memory address
DATABYTE4 = memory data to write

Remark:
Wait for 'memory data' feedback before sending a next command on the velbus.

'Write memory block' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 databytes received
DATABYTE1 = COMMAND_WRITE_MEMORY_BLOCK (H'CA')
DATABYTE2 = High memory address (must be H'00')
DATABYTE3 = LOW memory address (H'00'...H'FC')
DATABYTE4 = memory databyte1 to write
DATABYTE5 = memory databyte2 to write
DATABYTE6 = memory databyte3 to write
DATABYTE7 = memory databyte4 to write

Remark:
Wait for 'memory data block' feedback before sending a next command on the velbus.

'Module status request' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_MODULE_STATUS_REQUEST (H'FA')
DATABYTE2 = don't care

'Module name request' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 databytes received
DATABYTE1 = COMMAND_SENSOR_NAME_REQUEST (H'EF')
DATABYTE2 = don't care

'Read program step' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 databytes to send
DATABYTE1 = COMMAND_READ_PROGRAM_STEP (H'C0')
DATABYTE2 = Zone number

Contents	Zone
0	All rooms
1	Zone 1
2	Zone 2
3	Zone 3
4	Zone 4
5	Zone 5
6	Zone 6
7	Zone 7
8…255	No zone

DATABYTE3 = Program sensor address
DATABYTE4 = Program step number (1…31)

'Set clock alarm' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 databytes to send
DATABYTE1 = COMMAND_SET_ALARM_CLOCK (H'C3')
DATABYTE2 = Alarm number (1)
DATABYTE3 = Wake up hour (0…23)
DATABYTE4 = Wake up minute (0…59)
DATABYTE5 = Go to bed hour (0…23)
DATABYTE6 = Go to bed minute (0…59)
DATABYTE7 = Clock alarm enable flag (0 = disabled / 1 = enabled)

'Write program step' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_WRITE_PROGRAM_STEP (H'C2')
DATABYTE2 = Zone number

Contents	Zone
0	All rooms
1	Zone 1
2	Zone 2
3	Zone 3
4	Zone 4
5	Zone 5
6	Zone 6
7	Zone 7
8…255	No zone

DATABYTE3 = Sensor address
DATABYTE4 = Program step number (0…30)
DATABYTE5 = Program step time reference, mode & day

Contents	Program step time reference
00xxxxxx	Program step hour & minute
01xxxxxx	Wake up alarm time + relative time
10xxxxxx	Go to bed alarm time + relative time
11xxxxxx	Not valid

Contents	Program mode
xx00xxxx	Anti frost or cooler standby mode
xx01xxxx	Night mode
xx10xxxx	Day mode
xx11xxxx	Comfort mode

Contents	Program step day
Xxxx0000	Monday
Xxxx0001	Tuesday
Xxxx0010	Wednesday
Xxxx0011	Thursday
Xxxx0100	Friday
Xxxx0101	Saturday
Xxxx0110	Sunday
Xxxx0111	Saturday & Sunday
Xxxx1000	Monday … Friday
Xxxx1001	Monday … Saturday
Xxxx1010	Every day
Xxxx1011	Never
Xxxx1100	Never
Xxxx1101	Never
Xxxx1110	Never
Xxxx1111	Never

DATABYTE6 = Program step hour (0…23)
DATABYTE7 = Program step minute (0…59)
DATABYTE8 = Program step relative time

Contents	Program step time
00010000	Alarm time + 4h
00001111	Alarm time + 3h45m
. . .	…
00000001	Alarm time + 15m
00000000	Alarm time
10000001	Alarm time +15m
. . .	…
10001111	Alarm time – 3h15m
10010000	Alarm time – 4h

'Program step info' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_PROGRAM_STEP_INFO (H'C1')
DATABYTE2 = Zone number

Contents	Zone
0	All rooms
1	Zone 1
2	Zone 2
3	Zone 3
4	Zone 4
5	Zone 5
6	Zone 6
7	Zone 7
8…255	No zone

DATABYTE3 = Sensor address
DATABYTE4 = Program step number (0…30)
DATABYTE5 = Program step time reference, mode & day

Contents	Program step time reference
00xxxxxx	Program step hour & minute
01xxxxxx	Wake up alarm time + relative time
10xxxxxx	Go to bed alarm time + relative time
11xxxxxx	Not valid

Contents	Program mode
xx00xxxx	Anti frost or cooler standby mode
xx01xxxx	Night mode
xx10xxxx	Day mode
xx11xxxx	Comfort mode

Contents	Program step day
Xxxx0000	Monday
Xxxx0001	Tuesday
Xxxx0010	Wednesday
Xxxx0011	Thursday
Xxxx0100	Friday
Xxxx0101	Saturday
Xxxx0110	Sunday
Xxxx0111	Saturday & Sunday
Xxxx1000	Monday … Friday
Xxxx1001	Monday … Saturday
Xxxx1010	Every day
Xxxx1011	Never
Xxxx1100	Never
Xxxx1101	Never
Xxxx1110	Never
Xxxx1111	Never

DATABYTE6 = Program step hour (0…23)
DATABYTE7 = Program step minute (0…59)
DATABYTE8 = Program step relative time

Contents	Program step time
00010000	Alarm time + 4h
00001111	Alarm time + 3h45m
. . .	…
00000001	Alarm time + 15m
00000000	Alarm time
10000001	Alarm time +15m
. . .	…
10001111	Alarm time – 3h15m
10010000	Alarm time – 4h

'First part of the sensor settings' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_TEMP_SENSOR_SETTINGS_PART1 (H'E8')
DATABYTE2 = Current temperature set (resolution 0.5°)

Contents	Current temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE3 = Comfort temperature set for heating mode (resolution 0.5°)

Contents	Comfort temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE4 = Day temperature set for heating mode (resolution 0.5°)

Contents	Day temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE5 = Night temperature set for heating mode (resolution 0.5°)

Contents	Night temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE6 = Anti freeze temperature set for heating mode (resolution 0.5°)

Contents	Temperature set
00100100	18°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE7 = Temperature difference set (resolution 0.5°)

Contents	Turbo temperature difference set
00010100	10°C
00000001	0.5°C
00000000	0°C
11111111	-0.5°C
11110110	-10°C

DATABYTE8 = Hysteresis temperature set

Contents	Hysteresis
00011111	15.5°C
00000001	0.5°C

'Second part of the sensor settings' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_TEMP_SENSOR_SETTINGS_PART2 (H'E9')
DATABYTE2 = Comfort temperature set for cooling mode (resolution 0.5°)

Contents	Comfort temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE3 = Day temperature set for cooling mode (resolution 0.5°)

Contents	Day temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE4 = Night temperature set for cooling mode (resolution 0.5°)

Contents	Night temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE5 = Standby temperature set for cooling mode (resolution 0.5°)

Contents	Standby temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE6 = High byte of the default sleep timer H'0001' … H'FEFF' (1 to 65.279min)
DATABYTE7 = Low byte of the default sleep timer into minutes
DATABYTE8 = Default auto send temperature time interval into seconds
(valid range: 10…255s)
(1…9 = autosend when temperature changed)
(0 = autosend disabled)

'Third part of the sensor settings' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 7 databytes to send
DATABYTE1 = COMMAND_TEMP_SENSOR_SETTINGS_PART3 (H'C6')
DATABYTE2 = Low temperature alarm setting (resolution 0.5°)

Contents	Comfort temperature set
01111000	60°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE3 = High temperature alarm setting (resolution 0.5°)

Contents	Comfort temperature set
01111000	60°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE4 = Lower temperature range cool mode (resolution 0.5°)

Contents	Comfort temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE5 = Upper temperature range heat mode (resolution 0.5°)

Contents	Comfort temperature set
01101100	54°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE6 = Calibration factor (resolution 0.5°)

Contents	Calibration factor
00001111	Calibration factor +7.5°C
00000001	Calibration factor +0.5°C
00000000	Calibration factor +0°C
11111111	Calibration factor -0.5°C
11110000	Calibration factor -8°C

DATABYTE7 = Differential (slave) sensor address (H'FF': no slave sensor)

'Sensor temperature' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 7 databytes to send
DATABYTE1 = COMMAND_SENSOR_TEMPERATURE (H'E6')
DATABYTE2 = High byte current sensor temperature
DATABYTE3 = Low byte current sensor temperature into two's complement format (res. 0.0625°)
DATABYTE4 = High byte minimum sensor temperature
DATABYTE5 = Low byte minimum sensor temperature into two's complement format (res. 0.0625°)
DATABYTE6 = High byte maximum sensor temperature
DATABYTE7 = Low byte maximum sensor temperature into two's complement format (res 0.0625°)

High byte	Low byte	Current sensor temperature
01111111	11100000	63.5°C
00000001	000xxxxx	0.5°C
00000000	100xxxxx	0.25°C
00000000	010xxxxx	0.125°C
00000000	001xxxxx	0.0625°C
00000000	000xxxxx	0°C
11111111	110xxxxx	-0.0625°C
11111111	100xxxxx	-0.125°C
11111111	010xxxxx	-0.25°C
11111110	000xxxxx	-0.5°C
10010010	000xxxxx	-55°C

Remark:
The 5 least significant bits of the low byte are always zero.
The low order bytes are not sending with the data length of 4 bytes (resolution 0.5°C)

'First part of the sensor name' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_SENSOR_NAME_PART1 (H'F0')
DATABYTE2 = Sensor number ('00000001' = Sensor 1)
DATABYTE3 = Character 1 of the sensor name
DATABYTE4 = Character 2 of the sensor name
DATABYTE5 = Character 3 of the sensor name
DATABYTE6 = Character 4 of the sensor name
DATABYTE7 = Character 5 of the sensor name
DATABYTE8 = Character 6 of the sensor name

'Second part of the sensor name' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_SENSOR_NAME_PART2 (H'F1')
DATABYTE2 = Sensor number ('00000001' = Sensor 1)
DATABYTE3 = Character 7 of the sensor name
DATABYTE4 = Character 8 of the sensor name
DATABYTE5 = Character 9 of the sensor name
DATABYTE6 = Character 10 of the sensor name
DATABYTE7 = Character 11 of the sensor name
DATABYTE8 = Character 12 of the sensor name

'Third part of the sensor name' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 6 databytes to send
DATABYTE1 = COMMAND_SENSOR_NAME_PART3 (H'F2')
DATABYTE2 = Sensor number ('00000001' = Sensor 1)
DATABYTE3 = Character 13 of the sensor name
DATABYTE4 = Character 14 of the sensor name
DATABYTE5 = Character 15 of the sensor name
DATABYTE6 = Character 16 of the sensor name

Remarks: Unused characters contain H'FF'.

'Sensor status' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_TEMP_SENSOR_STATUS (H'EA')
DATABYTE2 = Operating mode

Contents	Operating mode
xxxxxxx1	Mode push button locked
xxxxxxx0	Mode push button unlocked
xxxxx01x	Manual mode
xxxxx10x	Sleep timer mode
xxxxx00x	Run mode
xxxx1xxx	Auto send sensor temperature enabled
xxxx0xxx	Auto send sensor temperature disabled
x100xxxx	Comfort mode
x010xxxx	Day mode
x001xxxx	Night mode
x000xxxx	Safe temp mode (anti frost)
1000xxxx	Cooler mode
0xxxxxxx	Heater mode

DATABYTE3 = Program step mode

Contents	Program step mode
xxxxx0xx	No sensor program
xxxxx1xx	Sensor program available
xxxx0xxx	No zone program
xxxx1xxx	Zone program available
0xxxxxxx	No all rooms program
1xxxxxxx	All rooms program available
x100xxxx	Comfort program step received
x010xxxx	Day program step received
x001xxxx	Night program step received
X000xxxx	Safe temperature program step received
xxxxxx1x	Enable unjamming heater valve
xxxxxx0x	Disable unjamming heater valve
xxxxxxx1	Enable unjamming pump
xxxxxxx0	Disable unjamming pump

DATABYTE4 = Output status (1 = activated)

Contents	Output channel
0xx0xxx0	Heater/pump off
0xx1xxx1	Heater/pump on
0xxxxx0x	Turbo heater/cooler off
0xxxxx1x	Turbo heater/cooler on
0xxxx0xx	Comfort and day mode off
0xxxx1xx	Comfort or day mode on
0xxx0xxx	Cooler off
0xxx1xxx	Cooler on
0x0xxxxx	Low alarm off
0x1xxxxx	Low alarm on
00xxxxxx	High alarm off
01xxxxxx	High alarm on

DATABYTE5 = Current sensor temperature into two's complement format (resolution 0.5°)

Contents	Current sensor temperature
01111111	63.5°C
00000001	0.5°C
00000000	0°C
11111111	-0.5°C
10010010	-55°C

DATABYTE6 = Current temperature set (resolution 0.5°)

Contents	Current temperature set
01101100	54°C
00000001	0.5°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE7 = High byte of the sleep timer
DATABYTE8 = Low byte of the sleep timer into minutes

Remark:
[DATABYTE7][DATABYTE8] contains a 16-bit sleep timer into minutes (1 to 65.279min).
If the sleep timer contains H'0000', the sleep timer is deactivated.
If the sleep timer contains a value between H'0001' and H'FEFF' (1 to 65.279min), the sleep timer is running for that time.
If the sleep timer contains H'FFFF', the sensor is in manual mode.

'Sensor time statistics' received

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 8 databytes to send
DATABYTE1 = COMMAND_TIME_STATISTICS (H'C8')
DATABYTE2 = statistics mode index

Contents	Time statistics
10000001	Heating antifreeze mode time statistics
10000010	Heating night mode time statistics
10000100	Heating day mode time statistics
10001000	Heating comfort mode time statistics
10010000	Heating global time statistics
01000001	Cooling standby mode time statistics
01000010	Cooling night mode time statistics
01000100	Cooling day mode time statistics
01001000	Cooling comfort mode time statistics
01010000	Cooling global time statistics

DATABYTE3 = 'ON' time (hours bcd digits 4 & 3)
DATABYTE4 = 'ON' time (hours bcd digits 2 & 1)
DATABYTE5 = 'ON' time (minutes bcd digits 2 & 1)
DATABYTE6 = Mode time (hours bcd digits 4 & 3)
DATABYTE7 = Mode time (hours bcd digits 2 & 1)
DATABYTE8 = Mode time (minutes bcd digits 2 & 1)

Remark:
The time is bcd formatted.
Databytes 3, 4 & 5 gives the total 'ON' time of the heater or cooler in the corresponding mode.
Databytes 6, 7 & 8 gives the total time of selected mode.

'Set sensor zone number' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = 2 databytes to send
DATABYTE1 = COMMAND_SET_SENSOR_ZONE_NUMBER (H'C5')
DATABYTE2 = Zone number

Contents	Zone
0	Sensor not assigned to a zone
1	Sensor assigned to zone 1
2	Sensor assigned to zone 2
3	Sensor assigned to zone 3
4	Sensor assigned to zone 4
5	Sensor assigned to zone 5
6	Sensor assigned to zone 6
7	Sensor assigned to zone 7
8…255	Not valid

'Temperature or thermostat type' received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Sensor address
RTR = 0
DLC3...DLC0 = don't care
DATABYTE1 = COMMAND_MODULETYPE (H'FF')
DATABYTE2 = Temperature sensor type (H'0C') or thermostat type (H'0D')
DATABYTE3 = don't care
DATABYTE4 = don't care
DATABYTE5 = don't care
DATABYTE6 = don't care
DATABYTE7 = don't care
DATABYTE8 = don't care

Memory map:

Address	*Contents*	*Address*	*Contents*
H'0000'	Zone 1 name character 1	H'0001'	Zone 1 name character 2
...	...	...	...
H'000E'	Zone 1 name character 15	H'000F'	Zone 1 name character 16
H'0010'	Zone 2 name character 1	H'0011'	Zone 2 name character 2
...	...	...	...
H'001E'	Zone 2 name character 15	H'001F'	Zone 2 name character 16
H'0020'	Zone 3 name character 1	H'0021'	Zone 3 name character 2
...	...	...	...
H'002E'	Zone 3 name character 15	H'002F'	Zone 3 name character 16
H'0030'	Zone 4 name character 1	H'0031'	Zone 4 name character 2
...	...	...	...
H'003E'	Zone 4 name character 15	H'003F'	Zone 4 name character 16
H'0040'	Zone 5 name character 1	H'0041'	Zone 5 name character 2
...	...	...	...
H'004E'	Zone 5 name character 15	H'004F'	Zone 5 name character 16
H'0050'	Zone 6 name character 1	H'0051'	Zone 6 name character 2
...	...	...	...
H'005E'	Zone 6 name character 15	H'005F'	Zone 6 name character 16
H'0060'	Zone 7 name character 1	H'0061'	Zone 7 name character 2
...	...	...	...
H'006E'	Zone 7 name character 15	H'006F'	Zone 7 name character 16
H'0070'	Not used	H'0071'	Not used
	…		…
H'00DC'	Not used	H'00DD'	Backlight 1 hour (0…23)
H'00DE'	Backlight 1 minutes (0…59)	H'00DF'	Backlight 1 (0…74)
H'00E0'	Backlight 2 hour (0…23)	H'00E1'	Backlight 2 minutes (0…59)
H'00E2'	Backlight 2 (0…74)	H'00E3'	Pin code digit 1 (0…9)
H'00E4'	Pin code digit 2 (0…9)	H'00E5'	Pin code digit 3 (0…9)
H'00E6'	Pin code digit 4 (0…9)	H'00E7'	Wake up hour (0…23)
H'00E8'	Wake up minutes (0…59)	H'00E9'	Go to bed hour (0…23)
H'00EA'	Go to bed minutes (0…59)	H'00EB'	Configuration flags
H'00EC'	Oscillator tune factor (0…63)	H'00ED'	Language (0…4)
H'00EE'	Contrast (0…74)	H'00EF'	Controller address (H'01'…H'FE')
H'00F0'	Module name character 1	H'00F1'	Module name character 2
...	...	...	...
H'00FE'	Module name character 15	H'00FF'	Module name character 16

All rooms program memory map

Address	*Contents*	*Address*	*Contents*
H'0100'	H'FF'	H'0101'	H'FF'
H'0102'	All rooms program location address	H'0103'	H'FF'
H'0104'	Prog step 1 : time ref/mode/day	H'0105'	Prog step 1 : hour (0…23)
H'0106'	Prog step 1 : minutes (0…59)	H'0107'	Prog step 1 : relative time
...	...	...	...
H'017C'	Prog step 31 : time ref/mode/day	H'017D'	Prog step 31 : hour (0…23)
H'017E'	Prog step 31 : minutes (0…59)	H'017F'	Prog step 31 : relative time

Zone 1 program memory map

Address	*Contents*	*Address*	*Contents*
H'0180'	H'FF'	H'0181'	H'FF'
H'0182'	Zone 1 program location address	H'0183'	H'FF'
H'0184'	Prog step 1 : time ref/mode/day	H'0185'	Prog step 1 : hour (0…23)
H'0186'	Prog step 1 : minutes (0…59)	H'0187'	Prog step 1 : relative time
...	...	...	...
H'01FC'	Prog step 31 : time ref/mode/day	H'01FD'	Prog step 31 : hour (0…23)
H'01FE'	Prog step 31 : minutes (0…59)	H'01FF'	Prog step 31 : relative time

Zone 2 program memory map

Address	Contents	Address	Contents
H'0200'	H'FF'	H'0201'	H'FF'
H'0202'	Zone 2 program location address	H'0203'	H'FF'
H'0204'	Prog step 1 : time ref/mode/day	H'0205'	Prog step 1 : hour (0…23)
H'0206'	Prog step 1 : minutes (0…59)	H'0207'	Prog step 1 : relative time
...	...	...	...
H'027C'	Prog step 31 : time ref/mode/day	H'027D'	Prog step 31 : hour (0…23)
H'027E'	Prog step 31 : minutes (0…59)	H'027F'	Prog step 31 : relative time

Zone 3 program memory map

Address	Contents	Address	Contents
H'0280'	H'FF'	H'0281'	H'FF'
H'0282'	Zone 3 program location address	H'0283'	H'FF'
H'0284'	Prog step 1 : time ref/mode/day	H'0285'	Prog step 1 : hour (0…23)
H'0286'	Prog step 1 : minutes (0…59)	H'0287'	Prog step 1 : relative time
...	...	...	...
H'02FC'	Prog step 31 : time ref/mode/day	H'02FD'	Prog step 31 : hour (0…23)
H'02FE'	Prog step 31 : minutes (0…59)	H'02FF'	Prog step 31 : relative time

Zone 4 program memory map

Address	Contents	Address	Contents
H'0300'	H'FF'	H'0301'	H'FF'
H'0302'	Zone 4 program location address	H'0303'	H'FF'
H'0304'	Prog step 1 : time ref/mode/day	H'0305'	Prog step 1 : hour (0…23)
H'0306'	Prog step 1 : minutes (0…59)	H'0307'	Prog step 1 : relative time
...	...	...	...
H'037C'	Prog step 31 : time ref/mode/day	H'037D'	Prog step 31 : hour (0…23)
H'037E'	Prog step 31 : minutes (0…59)	H'037F'	Prog step 31 : relative time

Zone 5 program memory map

Address	Contents	Address	Contents
H'0380'	H'FF'	H'0381'	H'FF'
H'0382'	Zone 5 program location address	H'0383'	H'FF'
H'0384'	Prog step 1 : time ref/mode/day	H'0385'	Prog step 1 : hour (0…23)
H'0386'	Prog step 1 : minutes (0…59)	H'0387'	Prog step 1 : relative time
...	...	...	...
H'03FC'	Prog step 31 : time ref/mode/day	H'03FD'	Prog step 31 : hour (0…23)
H'03FE'	Prog step 31 : minutes (0…59)	H'03FF'	Prog step 31 : relative time

Zone 6 program memory map

Address	Contents	Address	Contents
H'0400'	H'FF'	H'0401'	H'FF'
H'0402'	Zone 6 program location address	H'0403'	H'FF'
H'0404'	Prog step 1 : time ref/mode/day	H'0405'	Prog step 1 : hour (0…23)
H'0406'	Prog step 1 : minutes (0…59)	H'0407'	Prog step 1 : relative time
...	...	...	...
H'047C'	Prog step 31 : time ref/mode/day	H'047D'	Prog step 31 : hour (0…23)
H'047E'	Prog step 31 : minutes (0…59)	H'047F'	Prog step 31 : relative time

Zone 7 program memory map

Address	Contents	Address	Contents
H'0480'	H'FF'	H'0481'	H'FF'
H'0482'	Zone 7 program location address	H'0483'	H'FF'
H'0484'	Prog step 1 : time ref/mode/day	H'0485'	Prog step 1 : hour (0…23)
H'0486'	Prog step 1 : minutes (0…59)	H'0487'	Prog step 1 : relative time
...	...	...	...
H'04FC'	Prog step 31 : time ref/mode/day	H'04FD'	Prog step 31 : hour (0…23)
H'04FE'	Prog step 31 : minutes (0…59)	H'04FF'	Prog step 31 : relative time

Sensor 1 program memory map

Address	Contents	Address	Contents
H'0500'	Sensor 1 address	H'0501'	Sensor 1 type
H'0502'	Sensor 1 program location address	H'0503'	Sensor 1 zone number
H'0504'	Prog step 1 : time ref/mode/day	H'0505'	Prog step 1 : hour (0…23)
H'0506'	Prog step 1 : minutes (0…59)	H'0507'	Prog step 1 : relative time
...	...	...	...
H'057C'	Prog step 31 : time ref/mode/day	H'057D'	Prog step 31 : hour (0…23)
H'057E'	Prog step 31 : minutes (0…59)	H'057F'	Prog step 31 : relative time

Sensor 2 program memory map

Address	Contents	Address	Contents
H'0580'	Sensor 2 address	H'0581'	Sensor 2 type
H'0582'	Sensor 2 program location address	H'0583'	Sensor 2 zone number
H'0584'	Prog step 1 : time ref/mode/day	H'0585'	Prog step 1 : hour (0…23)
H'0586'	Prog step 1 : minutes (0…59)	H'0587'	Prog step 1 : relative time
...	...	...	...
H'05FC'	Prog step 31 : time ref/mode/day	H'05FD'	Prog step 31 : hour (0…23)
H'05FE'	Prog step 31 : minutes (0…59)	H'05FF'	Prog step 31 : relative time

Sensor 3 program memory map

Address	Contents	Address	Contents
H'0600'	Sensor 3 address	H'0601'	Sensor 3 type
H'0602'	Sensor 3 program location address	H'0603'	Sensor 3 zone number
H'0604'	Prog step 1 : time ref/mode/day	H'0605'	Prog step 1 : hour (0…23)
H'0606'	Prog step 1 : minutes (0…59)	H'0607'	Prog step 1 : relative time
...	...	...	...
H'067C'	Prog step 31 : time ref/mode/day	H'067D'	Prog step 31 : hour (0…23)
H'067E'	Prog step 31 : minutes (0…59)	H'067F'	Prog step 31 : relative time

Sensor 4 program memory map

Address	Contents	Address	Contents
H'0680'	Sensor 4 address	H'0681'	Sensor 4 type
H'0682'	Sensor 4 program location address	H'0683'	Sensor 4 zone number
H'0684'	Prog step 1 : time ref/mode/day	H'0685'	Prog step 1 : hour (0…23)
H'0686'	Prog step 1 : minutes (0…59)	H'0687'	Prog step 1 : relative time
...	...	...	...
H'06FC'	Prog step 31 : time ref/mode/day	H'06FD'	Prog step 31 : hour (0…23)
H'06FE'	Prog step 31 : minutes (0…59)	H'06FF'	Prog step 31 : relative time

Sensor 5 program memory map

Address	Contents	Address	Contents
H'0700'	Sensor 5 address	H'0701'	Sensor 5 type
H'0702'	Sensor 5 program location address	H'0703'	Sensor 5 zone number
H'0704'	Prog step 1 : time ref/mode/day	H'0705'	Prog step 1 : hour (0…23)
H'0706'	Prog step 1 : minutes (0…59)	H'0707'	Prog step 1 : relative time
...	...	...	...
H'077C'	Prog step 31 : time ref/mode/day	H'077D'	Prog step 31 : hour (0…23)
H'077E'	Prog step 31 : minutes (0…59)	H'077F'	Prog step 31 : relative time

Sensor 6 program memory map

Address	Contents	Address	Contents
H'0780'	Sensor 6 address	H'0781'	Sensor 6 type
H'0782'	Sensor 6 program location address	H'0783'	Sensor 6 zone number
H'0784'	Prog step 1 : time ref/mode/day	H'0785'	Prog step 1 : hour (0…23)
H'0786'	Prog step 1 : minutes (0…59)	H'0787'	Prog step 1 : relative time
...	...	...	...
H'07FC'	Prog step 31 : time ref/mode/day	H'07FD'	Prog step 31 : hour (0…23)
H'07FE'	Prog step 31 : minutes (0…59)	H'07FF'	Prog step 31 : relative time

Sensor 7 program memory map

Address	Contents	Address	Contents
H'0800'	Sensor 7 address	H'0801'	Sensor 7 type
H'0802'	Sensor 7 program location address	H'0803'	Sensor 7 zone number
H'0804'	Prog step 1 : time ref/mode/day	H'0805'	Prog step 1 : hour (0…23)
H'0806'	Prog step 1 : minutes (0…59)	H'0807'	Prog step 1 : relative time
...	...	...	...
H'087C'	Prog step 31 : time ref/mode/day	H'087D'	Prog step 31 : hour (0…23)
H'087E'	Prog step 31 : minutes (0…59)	H'087F'	Prog step 31 : relative time

Sensor 8 program memory map

Address	Contents	Address	Contents
H'0880'	Sensor 8 address	H'0881'	Sensor 8 type
H'0882'	Sensor 8 program location address	H'0883'	Sensor 8 zone number
H'0884'	Prog step 1 : time ref/mode/day	H'0885'	Prog step 1 : hour (0…23)
H'0886'	Prog step 1 : minutes (0…59)	H'0887'	Prog step 1 : relative time
...	...	...	...
H'08FC'	Prog step 31 : time ref/mode/day	H'08FD'	Prog step 31 : hour (0…23)
H'08FE'	Prog step 31 : minutes (0…59)	H'08FF'	Prog step 31 : relative time

Sensor 9 program memory map

Address	Contents	Address	Contents
H'0900'	Sensor 9 address	H'0901'	Sensor 9 type
H'0902'	Sensor 9 program location address	H'0903'	Sensor 9 zone number
H'0904'	Prog step 1 : time ref/mode/day	H'0905'	Prog step 1 : hour (0…23)
H'0906'	Prog step 1 : minutes (0…59)	H'0907'	Prog step 1 : relative time
...	...	...	...
H'097C'	Prog step 31 : time ref/mode/day	H'097D'	Prog step 31 : hour (0…23)
H'097E'	Prog step 31 : minutes (0…59)	H'097F'	Prog step 31 : relative time

Sensor 10 program memory map

Address	Contents	Address	Contents
H'0980'	Sensor 10 address	H'0981'	Sensor 10 type
H'0982'	Sensor 10 program location address	H'0983'	Sensor 10 zone number
H'0984'	Prog step 1 : time ref/mode/day	H'0985'	Prog step 1 : hour (0…23)
H'0986'	Prog step 1 : minutes (0…59)	H'0987'	Prog step 1 : relative time
...	...	...	...
H'09FC'	Prog step 31 : time ref/mode/day	H'09FD'	Prog step 31 : hour (0…23)
H'09FE'	Prog step 31 : minutes (0…59)	H'09FF'	Prog step 31 : relative time

Sensor 11 program memory map

Address	Contents	Address	Contents
H'0A00'	Sensor 11 address	H'0A01'	Sensor 11 type
H'0A02'	Sensor 11 program location address	H'0A03'	Sensor 11 zone number
H'0A04'	Prog step 1 : time ref/mode/day	H'0A05'	Prog step 1 : hour (0…23)
H'0A06'	Prog step 1 : minutes (0…59)	H'0A07'	Prog step 1 : relative time
...	...	...	...
H'0A7C'	Prog step 31 : time ref/mode/day	H'0A7D'	Prog step 31 : hour (0…23)
H'0A7E'	Prog step 31 : minutes (0…59)	H'0A7F'	Prog step 31 : relative time

Sensor 12 program memory map

Address	Contents	Address	Contents
H'0A80'	Sensor 12 address	H'0A81'	Sensor 12 type
H'0A82'	Sensor 12 program location address	H'0A83'	Sensor 12 zone number
H'0A84'	Prog step 1 : time ref/mode/day	H'0A85'	Prog step 1 : hour (0…23)
H'0A86'	Prog step 1 : minutes (0…59)	H'0A87'	Prog step 1 : relative time
...	...	...	...
H'0AFC'	Prog step 31 : time ref/mode/day	H'0AFD'	Prog step 31 : hour (0…23)
H'0AFE'	Prog step 31 : minutes (0…59)	H'0AFF'	Prog step 31 : relative time

Sensor 13 program memory map

Address	Contents	Address	Contents
H'0B00'	Sensor 13 address	H'0B01'	Sensor 13 type
H'0B02'	Sensor 13 program location address	H'0B03'	Sensor 13 zone number
H'0B04'	Prog step 1 : time ref/mode/day	H'0B05'	Prog step 1 : hour (0…23)
H'0B06'	Prog step 1 : minutes (0…59)	H'0B07'	Prog step 1 : relative time
...	...	...	...
H'0B7C'	Prog step 31 : time ref/mode/day	H'0B7D'	Prog step 31 : hour (0…23)
H'0B7E'	Prog step 31 : minutes (0…59)	H'0B7F'	Prog step 31 : relative time

Sensor 14 program memory map

Address	Contents	Address	Contents
H'0B80'	Sensor 14 address	H'0B81'	Sensor 14 type
H'0B82'	Sensor 14 program location address	H'0B83'	Sensor 14 zone number
H'0B84'	Prog step 1 : time ref/mode/day	H'0B85'	Prog step 1 : hour (0…23)
H'0B86'	Prog step 1 : minutes (0…59)	H'0B87'	Prog step 1 : relative time
...	...	...	...
H'0BFC'	Prog step 31 : time ref/mode/day	H'0BFD'	Prog step 31 : hour (0…23)
H'0BFE'	Prog step 31 : minutes (0…59)	H'0BFF'	Prog step 31 : relative time

Sensor 15 program memory map

Address	Contents	Address	Contents
H'0C00'	Sensor 15 address	H'0C01'	Sensor 15 type
H'0C02'	Sensor 15 program location address	H'0C03'	Sensor 15 zone number
H'0C04'	Prog step 1 : time ref/mode/day	H'0C05'	Prog step 1 : hour (0…23)
H'0C06'	Prog step 1 : minutes (0…59)	H'0C07'	Prog step 1 : relative time
...	...	...	...
H'0C7C'	Prog step 31 : time ref/mode/day	H'0C7D'	Prog step 31 : hour (0…23)
H'0C7E'	Prog step 31 : minutes (0…59)	H'0C7F'	Prog step 31 : relative time

Sensor 16 program memory map

Address	Contents	Address	Contents
H'0C80'	Sensor 16 address	H'0C81'	Sensor 16 type
H'0C82'	Sensor 16 program location address	H'0C83'	Sensor 16 zone number
H'0C84'	Prog step 1 : time ref/mode/day	H'0C85'	Prog step 1 : hour (0…23)
H'0C86'	Prog step 1 : minutes (0…59)	H'0C87'	Prog step 1 : relative time
...	...	...	...
H'0CFC'	Prog step 31 : time ref/mode/day	H'0CFD'	Prog step 31 : hour (0…23)
H'0CFE'	Prog step 31 : minutes (0…59)	H'0CFF'	Prog step 31 : relative time

Sensor 17 program memory map

Address	Contents	Address	Contents
H'0D00'	Sensor 17 address	H'0D01'	Sensor 17 type
H'0D02'	Sensor 17 program location address	H'0D03'	Sensor 17 zone number
H'0D04'	Prog step 1 : time ref/mode/day	H'0D05'	Prog step 1 : hour (0…23)
H'0D06'	Prog step 1 : minutes (0…59)	H'0D07'	Prog step 1 : relative time
...	...	...	...
H'0D7C'	Prog step 31 : time ref/mode/day	H'0D7D'	Prog step 31 : hour (0…23)
H'0D7E'	Prog step 31 : minutes (0…59)	H'0D7F'	Prog step 31 : relative time

Sensor 18 program memory map

Address	Contents	Address	Contents
H'0D80'	Sensor 18 address	H'0D81'	Sensor 18 type
H'0D82'	Sensor 18 program location address	H'0D83'	Sensor 18 zone number
H'0D84'	Prog step 1 : time ref/mode/day	H'0D85'	Prog step 1 : hour (0…23)
H'0D86'	Prog step 1 : minutes (0…59)	H'0D87'	Prog step 1 : relative time
...	...	...	...
H'0DFC'	Prog step 31 : time ref/mode/day	H'0DFD'	Prog step 31 : hour (0…23)
H'0DFE'	Prog step 31 : minutes (0…59)	H'0DFF'	Prog step 31 : relative time

Sensor 19 program memory map

Address	Contents	Address	Contents
H'0E00'	Sensor 19 address	H'0E01'	Sensor 19 type
H'0E02'	Sensor 19 program location address	H'0E03'	Sensor 19 zone number
H'0E04'	Prog step 1 : time ref/mode/day	H'0E05'	Prog step 1 : hour (0…23)
H'0E06'	Prog step 1 : minutes (0…59)	H'0E07'	Prog step 1 : relative time
...	...	...	...
H'0E7C'	Prog step 31 : time ref/mode/day	H'0E7D'	Prog step 31 : hour (0…23)
H'0E7E'	Prog step 31 : minutes (0…59)	H'0E7F'	Prog step 31 : relative time

Sensor 20 program memory map

Address	Contents	Address	Contents
H'0E80'	Sensor 20 address	H'0E81'	Sensor 20 type
H'0E82'	Sensor 20 program location address	H'0E83'	Sensor 20 zone number
H'0E84'	Prog step 1 : time ref/mode/day	H'0E85'	Prog step 1 : hour (0…23)
H'0E86'	Prog step 1 : minutes (0…59)	H'0E87'	Prog step 1 : relative time
...	...	...	...
H'0EFC'	Prog step 31 : time ref/mode/day	H'0EFD'	Prog step 31 : hour (0…23)
H'0EFE'	Prog step 31 : minutes (0…59)	H'0EFF'	Prog step 31 : relative time

Sensor 21 program memory map

Address	Contents	Address	Contents
H'0F00'	Sensor 21 address	H'0F01'	Sensor 21 type
H'0F02'	Sensor 21 program location address	H'0F03'	Sensor 21 zone number
H'0F04'	Prog step 1 : time ref/mode/day	H'0F05'	Prog step 1 : hour (0…23)
H'0F06'	Prog step 1 : minutes (0…59)	H'0F07'	Prog step 1 : relative time
...	...	...	...
H'0F7C'	Prog step 31 : time ref/mode/day	H'0F7D'	Prog step 31 : hour (0…23)
H'0F7E'	Prog step 31 : minutes (0…59)	H'0F7F'	Prog step 31 : relative time

Sensor 22 program memory map

Address	Contents	Address	Contents
H'0F80'	Sensor 22 address	H'0F81'	Sensor 22 type
H'0F82'	Sensor 22 program location address	H'0F83'	Sensor 22 zone number
H'0F84'	Prog step 1 : time ref/mode/day	H'0F85'	Prog step 1 : hour (0…23)
H'0F86'	Prog step 1 : minutes (0…59)	H'0F87'	Prog step 1 : relative time
...	...	...	...
H'0FFC'	Prog step 31 : time ref/mode/day	H'0FFD'	Prog step 31 : hour (0…23)
H'0FFE'	Prog step 31 : minutes (0…59)	H'0FFF'	Prog step 31 : relative time

Sensor 23 program memory map

Address	Contents	Address	Contents
H'1000'	Sensor 23 address	H'1001'	Sensor 23 type
H'1002'	Sensor 23 program location address	H'1003'	Sensor 23 zone number
H'1004'	Prog step 1 : time ref/mode/day	H'1005'	Prog step 1 : hour (0…23)
H'1006'	Prog step 1 : minutes (0…59)	H'1007'	Prog step 1 : relative time
...	...	...	...
H'107C'	Prog step 31 : time ref/mode/day	H'107D'	Prog step 31 : hour (0…23)
H'107E'	Prog step 31 : minutes (0…59)	H'107F'	Prog step 31 : relative time

Sensor 24 program memory map

Address	Contents	Address	Contents
H'1080'	Sensor 24 address	H'1081'	Sensor 24 type
H'1082'	Sensor 24 program location address	H'1083'	Sensor 24 zone number
H'1084'	Prog step 1 : time ref/mode/day	H'1085'	Prog step 1 : hour (0…23)
H'1086'	Prog step 1 : minutes (0…59)	H'1087'	Prog step 1 : relative time
...	...	...	...
H'10FC'	Prog step 31 : time ref/mode/day	H'10FD'	Prog step 31 : hour (0…23)
H'10FE'	Prog step 31 : minutes (0…59)	H'10FF'	Prog step 31 : relative time

Sensor 25 program memory map

Address	Contents	Address	Contents
H'1100'	Sensor 25 address	H'1101'	Sensor 25 type
H'1102'	Sensor 25 program location address	H'1103'	Sensor 25 zone number
H'1104'	Prog step 1 : time ref/mode/day	H'1105'	Prog step 1 : hour (0…23)
H'1106'	Prog step 1 : minutes (0…59)	H'1107'	Prog step 1 : relative time
...	...	...	...
H'117C'	Prog step 31 : time ref/mode/day	H'117D'	Prog step 31 : hour (0…23)
H'117E'	Prog step 31 : minutes (0…59)	H'117F'	Prog step 31 : relative time

Sensor 26 program memory map

Address	Contents	Address	Contents
H'1180'	Sensor 26 address	H'1181'	Sensor 26 type
H'1182'	Sensor 26 program location address	H'1183'	Sensor 26 zone number
H'1184'	Prog step 1 : time ref/mode/day	H'1185'	Prog step 1 : hour (0…23)
H'1186'	Prog step 1 : minutes (0…59)	H'1187'	Prog step 1 : relative time
...	...	...	...
H'11FC'	Prog step 31 : time ref/mode/day	H'11FD'	Prog step 31 : hour (0…23)
H'11FE'	Prog step 31 : minutes (0…59)	H'11FF'	Prog step 31 : relative time

Sensor 27 program memory map

Address	Contents	Address	Contents
H'1200'	Sensor 27 address	H'1201'	Sensor 27 type
H'1202'	Sensor 27 program location address	H'1203'	Sensor 27 zone number
H'1204'	Prog step 1 : time ref/mode/day	H'1205'	Prog step 1 : hour (0…23)
H'1206'	Prog step 1 : minutes (0…59)	H'1207'	Prog step 1 : relative time
...	...	...	...
H'127C'	Prog step 31 : time ref/mode/day	H'127D'	Prog step 31 : hour (0…23)
H'127E'	Prog step 31 : minutes (0…59)	H'127F'	Prog step 31 : relative time

Sensor 28 program memory map

Address	Contents	Address	Contents
H'1280'	Sensor 28 address	H'1281'	Sensor 28 type
H'1282'	Sensor 28 program location address	H'1283'	Sensor 28 zone number
H'1284'	Prog step 1 : time ref/mode/day	H'1285'	Prog step 1 : hour (0…23)
H'1286'	Prog step 1 : minutes (0…59)	H'1287'	Prog step 1 : relative time
...	...	...	...
H'12FC'	Prog step 31 : time ref/mode/day	H'12FD'	Prog step 31 : hour (0…23)
H'12FE'	Prog step 31 : minutes (0…59)	H'12FF'	Prog step 31 : relative time

Sensor 29 program memory map

Address	Contents	Address	Contents
H'1300'	Sensor 29 address	H'1301'	Sensor 29 type
H'1302'	Sensor 29 program location address	H'1303'	Sensor 29 zone number
H'1304'	Prog step 1 : time ref/mode/day	H'1305'	Prog step 1 : hour (0…23)
H'1306'	Prog step 1 : minutes (0…59)	H'1307'	Prog step 1 : relative time
...	...	...	...
H'137C'	Prog step 31 : time ref/mode/day	H'137D'	Prog step 31 : hour (0…23)
H'137E'	Prog step 31 : minutes (0…59)	H'137F'	Prog step 31 : relative time

Sensor 30 program memory map

Address	Contents	Address	Contents
H'1380'	Sensor 30 address	H'1381'	Sensor 30 type
H'1382'	Sensor 30 program location address	H'1383'	Sensor 30 zone number
H'1384'	Prog step 1 : time ref/mode/day	H'1385'	Prog step 1 : hour (0…23)
H'1386'	Prog step 1 : minutes (0…59)	H'1387'	Prog step 1 : relative time
...	...	...	...
H'13FC'	Prog step 31 : time ref/mode/day	H'13FD'	Prog step 31 : hour (0…23)
H'13FE'	Prog step 31 : minutes (0…59)	H'13FF'	Prog step 31 : relative time

Sensor 31 program memory map

Address	***Contents***	***Address***	***Contents***
H'1400'	Sensor 31 address	H'1401'	Sensor 31 type
H'1402'	Sensor 31 program location address	H'1403'	Sensor 31 zone number
H'1404'	Prog step 1 : time ref/mode/day	H'1405'	Prog step 1 : hour (0…23)
H'1406'	Prog step 1 : minutes (0…59)	H'1407'	Prog step 1 : relative time
...	...	...	...
H'147C'	Prog step 31 : time ref/mode/day	H'147D'	Prog step 31 : hour (0…23)
H'147E'	Prog step 31 : minutes (0…59)	H'147F'	Prog step 31 : relative time

Sensor 32 program memory map

Address	***Contents***	***Address***	***Contents***
H'1480'	Sensor 32 address	H'1481'	Sensor 32 type
H'1482'	Sensor 32 program location address	H'1483'	Sensor 32 zone number
H'1484'	Prog step 1 : time ref/mode/day	H'1485'	Prog step 1 : hour (0…23)
H'1486'	Prog step 1 : minutes (0…59)	H'1487'	Prog step 1 : relative time
...	...	...	...
H'14FC'	Prog step 31 : time ref/mode/day	H'14FD'	Prog step 31 : hour (0…23)
H'14FE'	Prog step 31 : minutes (0…59)	H'14FF'	Prog step 31 : relative time

Remarks:
An unused location contains H'FF'.

Configuration flags

Contents	configuration
xxxxxxx0	Battery backup disabled
xxxxxxx1	Battery backup enabled
xxxxxx0x	Master clock disabled
xxxxxx1x	Master clock enabled
xxxxx0xx	Alarm clock disabled
xxxxx1xx	Alarm clock enabled
xxxx0xxx	Celsius readout
xxxx1xxx	Fahrenheit readout
xxx0xxxx	Global alarm clock disabled
xxx1xxxx	Global alarm clock enabled

Backlight 1 & 2

Contents	Backlight
0	Minimum
74	Maximum

Contrast

Contents	Contrast
0	Maximum
74	Minimum

Language index:

Contents	Language
0	English
1	French
2	Dutch
3	Spanish
4	German

Sensor address

A value of H'FF' for the sensor address mains there are no more valid sensors available.

Sensor type

Contents	Type
H'0C'	Temperature Sensor
H'0D'	Thermostat with build-in sensor

Sensor program location

Contents	Type
H'FF' or Controller address	Use the local program stored in the controller
Address different of H'FF' or Controller address	Skip the local program and use the program stored in the controller at the specified address location

Sensor zone number

Contents	Zone
H'00'	Sensor not assigned to a zone
H'01'	Sensor assigned to zone 1
H'02'	Sensor assigned to zone 2
H'03'	Sensor assigned to zone 3
H'04'	Sensor assigned to zone 4
H'05'	Sensor assigned to zone 5
H'06'	Sensor assigned to zone 6
H'07'	Sensor assigned to zone 7
H'08'…H'FF'	Sensor not assigned to a zone

Program step time reference, mode & day

Contents	Program step time reference
00xxxxxx	Program step hour & minute
01xxxxxx	Wake up alarm time + relative time
10xxxxxx	Go to bed alarm time + relative time
11xxxxxx	Not valid

Contents	Program mode
xx00xxxx	Anti frost or cooler standby mode
xx01xxxx	Night mode
xx10xxxx	Day mode
xx11xxxx	Comfort mode

Contents	Program step day
Xxxx0000	Monday
Xxxx0001	Tuesday
Xxxx0010	Wednesday
Xxxx0011	Thursday
Xxxx0100	Friday
Xxxx0101	Saturday
Xxxx0110	Sunday
Xxxx0111	Saturday & Sunday
Xxxx1000	Monday … Friday
Xxxx1001	Monday … Saturday
Xxxx1010	Every day
Xxxx1011	Never
Xxxx1100	Never
Xxxx1101	Never
Xxxx1110	Never
Xxxx1111	Never

Program step hour: 0…23

Program step minute: 0…59

Program step relative time

Contents	Program step time
00010000	Alarm time + 4h
00001111	Alarm time + 3h45m
. . .	…
00000001	Alarm time + 15m
00000000	Alarm time
11111111	Alarm time -15m
. . .	…
11110001	Alarm time – 3h45m
11110000	Alarm time – 4h