VMBPIRO-10

Outdoor PIR detector module for VELBUS system

Binairy 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 module can transmit the following messages:

- Channel status
- Module status
- Module type
- Bus error counter status
- Memory data
- Memory data block (4 bytes)
- Real-time clock status
- Date status
- Daylight savings status
- Real-time clock status request
- Clear linked push button led
- Set linked push button led
- Slow blink linked push button led
- Temperature sensor temperature
- Temperature sensor name
- Temperature sensor setting

The module can receive the following commands:

- Linked push button status
- Module type request
- Module status request
- Light value request
- Set or clear test mode
- Clear channel led
- Set channel led
- Slow blink channel led
- Fast blink channel led
- Very fast channel led
- Update channel leds
- Read memory data
- Read memory data block (4 bytes)
- Memory dump request

- Write memory data
- Write memory data block (4 bytes)
- Bus error counter status request
- Real-time clock status request
- Set real-time clock
- Set date
- Set daylight savings
- Enable/disable global sunrise/sunset related actions
- Enable/disable local sunrise/sunset related actions
- Set local alarm clock
- Set global alarm clock
- Lock channel
- Unlock channel
- Disable channel program
- Enable channel program
- Select program
- Temperature sensor name request
- Temperature sensor settings request
- Set temperature sensor zone number
- Set temperature calibration offset
- Set temperature calibration gain
- Set low temperature alarm
- Set high temperature alarm
- Reset minimum/maximum temperature

Transmits real time clock status request:

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

Transmits the real time clock status:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 data bytes 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 the date status:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 5 data bytes to send
DATABYTE1 = COMMAND_DATE_STATUS (H'B7')
DATABYTE2 = Day (1…31)
DATABYTE3 = Month (1…12)
DATABYTE4 = High byte of Year
DATABYTE5 = Low byte of Year

Transmits the daylight savings status:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_DAYLIGHT_SAVING_STATUS (H'AF')
DATABYTE2 = 0 =disabled / 1 = enabled

Transmits the channel switch status:

SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 data bytes to send
DATABYTE1 = COMMAND_PUSH_BUTTON_STATUS (H'00')
DATABYTE2 = Channel just pressed
DATABYTE3 = Channel just released
DATABYTE4 = Channel long pressed

Contents	***Channel number***
B'00000001'	Dark output
B'00000010'	Light output
B'00000100'	Motion 1 output
B'00001000'	Light depending motion 1 output
B'00010000'	Motion 2 output
B'00100000'	Light depending motion 2 output
B'01000000'	Low temperature alarm
B'10000000'	High temperature alarm

Transmits the module type:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 data bytes to send
DATABYTE1 = COMMAND_MODULE_TYPE (H'FF')
DATABYTE2 = VMBPIRO-10 type (0x23)
DATABYTE3 = High byte of serial number
DATABYTE4 = Low byte of serial number
DATABYTE5 = Memory map version
DATABYTE6 = Build year
DATABYTE7 = Build week

Transmits the module status:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 data bytes to send
DATABYTE1 = COMMAND_MODULE_STATUS (H'ED')
DATABYTE2 = channel status (1 = pressed / 0 = released)

Contents	***Channel status***
B'xxxxxxx0'	Dark output off
B'xxxxxxx1'	Dark output on
B'xxxxxx0x'	Light output off
B'xxxxxx1x'	Light output on
B'xxxxx0xx'	Motion 1 output off
B'xxxxx1xx'	Motion 1 output on
B'xxxx0xxx'	Light depending motion 1 output off
B'xxxx1xxx'	Light depending motion 1 output on
B'xxx0xxxx'	Motion 2 output off
B'xxx1xxxx'	Motion 2 output on
B'xx0xxxxx'	Light depending motion 2 output off
B'xx1xxxxx'	Light depending motion 2 output on
B'x0xxxxxx'	Low temperature alarm off
B'x1xxxxxx'	Low temperature alarm on
B'0xxxxxxx'	High temperature alarm off
B'1xxxxxxx'	High temperature alarm on

DATABYTE3 = light sensor value high byte
DATABYTE4 = light sensor value low byte
DATABYTE5 = test modus or locked channel status (0 = unlocked / 1 = locked)

Contents	***Test modus or locked status***
B'00xxxxx0'	Dark output unlocked
B'00xxxxx1'	Dark output locked
B'00xxxx0x'	Light output unlocked
B'00xxxx1x'	Light output locked
B'00xxx0xx'	Motion 1 output unlocked
B'00xxx1xx'	Motion 1 output locked
B'00xx0xxx'	Light depending motion 1 output unlocked
B'00xx1xxx'	Light depending motion 1 output locked
B'00x0xxxx'	Motion 2 output unlocked
B'00x1xxxx'	Motion 2 output locked
B'000xxxxx'	Light depending motion 2 output unlocked
B'001xxxxx'	Light depending motion 2 output locked
B'10xxxxxx'	Test modus

DATABYTE6 = disabled channel program status (0 = program enabled / 1 = program disabled)

Contents	*Program disabled status*
B'00xxxxx0'	Dark output program enabled
B'00xxxxx1'	Dark output program disabled
B'00xxxx0x'	Light output program enabled
B'00xxxx1x'	Light output l program disabled
B'00xxx0xx'	Motion 1 output program enabled
B'00xxx1xx'	Motion 1 output program disabled
B'00xx0xxx'	Light depending motion 1 output program enabled
B'00xx1xxx'	Light depending motion 1 output program disabled
B'00x0xxxx'	Motion 2 output program enabled
B'00x1xxxx'	Motion 2 output l program disabled
B'000xxxxx'	Light depending motion 2 output program enabled
B'001xxxxx'	Light depending motion 2 output program disabled

DATABYTE7 = alarm & program selection

Contents	*Selected programl*
B'xxxxxx00'	None
B'xxxxxx01'	Summer
B'xxxxxx10'	Winter
B'xxxxxx11'	Holiday
B'xxxxx0xx'	Alarm 1 off
B'xxxxx1xx'	Alarm 1 on
B'xxxx0xxx'	Local alarm 1
B'xxxx1xxx'	Global alarm 1
B'xxx0xxxx'	Alarm 2 off
B'xxx1xxxx'	Alarm 2 on
B'xx0xxxxx'	Local alarm 2
B'xx1xxxxx'	Global alarm 2
B'x0xxxxxx'	Sunrise disabled
B'x1xxxxxx'	Sunrise enabled
B'0xxxxxxx'	Sunset disabled
B'1xxxxxxx'	Sunset enabled

DATABYTE8 = light value auto send interval time
(Valid range: 10…255s)
(5…9 = auto send on light value change with min interval 5…9s)
(<5 = auto send disabled)

Transmit: Bus error counter status

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

Transmits the memory data:

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

Remark: address range: H'0000' to H'01FF'

Transmits memory data block (4 bytes):

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 data bytes to send
DATABYTE1 = COMMAND_MEMORY_DATA_BLOCK (H'CC')
DATABYTE2 = High start address of memory block
DATABYTE3 = LOW start address of memory block
DATABYTE4 = memory data1
DATABYTE5 = memory data2
DATABYTE6 = memory data3
DATABYTE7 = memory data4

Remark: address range: H'0000' to H'01FC'

Transmit: Clears LEDs on a linked push button module:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Address of the linked push button module for clearing LEDs
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_CLEAR_LED (H'F5')
DATABYTE2 = LED bit numbers (1 = clear LED)

Transmit: Sets LEDs on a linked push button module:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Address of the linked push button module for setting LEDs on
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_SET_LED (H'F6')
DATABYTE2 = LED bit numbers (1 = set LED)

Transmit: Blinks LEDs slowly on a linked push button module:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Address of the linked push button module for slowly blinking LEDs
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_SLOW_BLINKING_LED (H'F7')
DATABYTE2 = LED bit numbers (1 = slow blink LED)

Transmit the temperature sensor temperature:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 data bytes 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 (resolution 0.0625°)
DATABYTE4 = High byte minimum sensor temperature
DATABYTE5 = Low byte minimum sensor temperature into two's complement format (resolution 0.0625°)
DATABYTE6 = High byte maximum sensor temperature
DATABYTE7 = Low byte maximum sensor temperature into two's complement format (resolution 0.0625°)

High byte	Low byte	Current sensor temperature
01111111	11100000	63.5°C
00000000	00100000	0.0625°C
00000000	00000000	0°C
11111111	11100000	-0.0625°C
10010010	00000000	-55°C

Transmits the first part of the temperature sensor name:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 data bytes to send
DATABYTE1 = COMMAND_SENSOR_NAME_PART1 (H'F0')
DATABYTE2 = Sensor bit 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

Transmits the second part of the temperature sensor name:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 data bytes to send
DATABYTE1 = COMMAND_SENSOR_NAME_PART2 (H'F1')
DATABYTE2 = Sensor bit 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

Transmits the third part of the temperature sensor name:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 6 data bytes to send
DATABYTE1 = COMMAND_SENSOR_NAME_PART3 (H'F2')
DATABYTE2 = Sensor bit 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'.

Transmit the temperature sensor settings:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 data bytes to send
DATABYTE1 = COMMAND_TEMP_SENSOR_SETTINGS_PART1 (H'E8')
DATABYTE2 = Calibration offset 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

DATABYTE3 = Calibration gain factor
DATABYTE4 = Low temperature alarm setting (resolution 0.5°)
DATABYTE5 = High temperature alarm setting (resolution 0.5°)
DATABYTE6 = Zone number
DATABYTE7 = Default auto send temperature time interval into seconds
(Valid range: 10…255s)
(5…9 = auto send on temperature change with min interval 5…9s)
(<5 = auto send disabled)

'Linked push button status' received:

SID10-SID9 = 00 (highest priority)
SID8...SID1 = Address of the linked push button module
RTR = 0
DLC3...DLC0 = 4 data bytes received
DATABYTE1 = COMMAND_PUSH_BUTTON_STATUS (H'00')
DATABYTE2 = Linked push buttons just pressed (1 = just pressed)
DATABYTE3 = Linked push buttons just released (1 = just released)
DATABYTE4 = linked push buttons long pressed (1 = longer than 0.85s pressed)

'Real time clock status request' command received:

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

'Set real time clock' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 4 data bytes to send
DATABYTE1 = COMMAND_SET_REALTIME_CLOCK (H'D8')
DATABYTE2 = Day of week

Contents day of week'	***Description***
H'00'	Monday
H'01'	Tuesday
H'02'	Wednesday
H'03'	Thursday
H'04'	Friday
H'05'	Saterday
H'06'	Sunday

DATABYTE3 = Hours (0…23)
DATABYTE4 = Minutes (0…59)

'Set date' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 5 data bytes to send
DATABYTE1 = COMMAND_SET_REALTIME_DATE (H'B7')
DATABYTE2 = Day (1…31)
DATABYTE3 = Month (1…12)
DATABYTE4 = High byte of Year
DATABYTE5 = Low byte of Year

'Set daylight savings' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_SET_DAYLIGHT_SAVING (H'AF')
DATABYTE2 = 0 =disabled / 1 = enabled

'Enable/disable global sunrise/sunset related actions' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 3 data bytes to send
DATABYTE1 = COMMAND_ENA_DIS_SUNRISE_SUNSET (H'AE')
DATABYTE2 = Channel (FF)
DATABYTE3 = enable/disable flags

Contents	***Description***
B'xxxxxxx0'	Disable sunrise related actions
B'xxxxxxx1'	Enable sunrise related actions
B'xxxxxx0x'	Disable sunset related actions
B'xxxxxx1x'	Enable sunset related actions

'Enable/disable local sunrise/sunset related actions' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 data bytes to send
DATABYTE1 = COMMAND_ENA_DIS_SUNRISE_SUNSET (H'AE')
DATABYTE2 = Channel (FF)
DATABYTE3 = enable/disable flags

Contents	***Description***
B'xxxxxxx0'	Disable sunrise related actions
B'xxxxxxx1'	Enable sunrise related actions
B'xxxxxx0x'	Disable sunset related actions
B'xxxxxx1x'	Enable sunset related actions

'Set global clock alarm' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = H'00'
RTR = 0
DLC3...DLC0 = 7 data bytes to send
DATABYTE1 = COMMAND_SET_ALARM_CLOCK (H'C3')
DATABYTE2 = Alarm number (1 or 2)
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)

'Set local clock alarm' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 data bytes to send
DATABYTE1 = COMMAND_SET_ALARM_CLOCK (H'C3')
DATABYTE2 = Alarm number (1 or 2)
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 data bytes received

'Module status request' command received:

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

'Light value request' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_LIGHT_VALUE_REQUEST (H'AA')
DATABYTE2 = Auto send interval time into seconds
(valid range: 10…255s)
(5…9 = auto send on change)
(1…4 = auto send disabled)
(0 = no change on auto send interval time)

'Set or Clear test mode' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_SET_CLR_LEARN_MODE (H'B5')
DATABYTE2 = Operating mode

Contents	*Operating mode*
B'00000000'	Normal
B'00000001'	Test mode

Remark:
After changing the operating mode, the module sends his status.
There is a timeout of 30 minutes for the test mode.

'Clear channel LED' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_CLEAR_LED (H'F5')
DATABYTE2 = LEDs to clear (a one clears the corresponding LED of channel 1 to 8)

'Set channel LED' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_SET_LED (H'F6')
DATABYTE2 = LEDs to set (a one sets the corresponding LED of channel 1 to 8)

'Slow blink channel LED' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_SLOW_BLINK_LED (H'F7')
DATABYTE2 = LEDs to blink slow (a one blinks slow the corresponding LED of channel 1 to 8)

'Fast blink channel LED' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_FAST_BLINK_LED (H'F8')
DATABYTE2 = LEDs to blink fast (a one blinks fast the corresponding LED of channel 1 to 8)

'Very fast blink channel LED' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_VERY_FAST_BLINK_LED (H'F9')
DATABYTE2 = LEDs to blink very fast (a one blinks very fast the corresponding LED of channel 1 to 8)

'Update channel LEDs' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 data bytes received
DATABYTE1 = COMMAND_UPDATE_LED_STATUS (H'F4')
DATABYTE2 = LEDs to set (a one sets the corresponding LED of channel 1 to 8)
DATABYTE3 = LEDs to blink slow (a one blinks slow the corresponding LED of channel 1 to 8)
DATABYTE4 = LEDs to blink fast (a one blinks very fast the corresponding LED of channel 1 to 8)

Remark:
The 'LEDs to set' status overrides the blinking modes.
Very fast blinking if slow & fast blinking are set.

'Read data from memory' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 data bytes received
DATABYTE1 = COMMAND_READ_DATA_FROM_MEMORY (H'FD')
DATABYTE2 = High memory address
DATABYTE3 = LOW memory address

Remark: address range: H'0000' to H'01FF'

'Memory dump request' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 1 data bytes received
DATABYTE1 = COMMAND_MEMORY_DUMP_REQUEST (H'CB')

'Read data block from memory' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 data bytes received
DATABYTE1 = COMMAND_READ_MEMORY_BLOCK (H'C9')
DATABYTE2 = High memory address
DATABYTE3 = LOW memory address

Remark: address range: H'0000' to H'01FC'

'Write data to memory' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4 data bytes received
DATABYTE1 = COMMAND_WRITE_DATA_TO_MEMORY (H'FC')
DATABYTE2 = High memory address
DATABYTE3 = LOW memory address (H'00'...H'FF')
DATABYTE4 = memory data to write

Remark:
Wait at least 10ms for sending a next command on the velbus.
Address range: H'0000' to H'01FF'

'Write memory block' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Address of the module
RTR = 0
DLC3...DLC0 = 7 data bytes received
DATABYTE1 = COMMAND_WRITE_MEMORY_BLOCK (H'CA')
DATABYTE2 = High memory address
DATABYTE3 = LOW memory address
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.
Address range: H'0000' to H'01FC'

'Bus error counter status request' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 1 data bytes to send
DATABYTE1 = COMMAND_BUS_ERROR_CONTER_STATUS_REQUEST (H'D9')

'Unlock channel' command received:

SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_CANCEL_FORCED_OFF (H'13')
DATABYTE2 = Channel bit

Contents	***Channel***
B'00000001'	Dark output
B'00000010'	Light output
B'00000100'	Motion 1 output
B'00001000'	Light depending motion 1 output
B'00010000'	Motion 2 output
B'00100000'	Light depending motion 2 output

'Lock channel' command received:

SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_FORCED_OFF (H'12')
DATABYTE2 = Channel bit

Contents	*Dimmer channel*
B'00000001'	Dark output
B'00000010'	Light output
B'00000100'	Motion 1 output
B'00001000'	Light depending motion 1 output
B'00010000'	Motion 2 output
B'00100000'	Light depending motion 2 output

DATABYTE3 = high byte of delay time
DATABYTE4 = mid byte of delay time
DATABYTE5 = low byte of delay time

Remark:
[DATABYTE3][DATABYTE4][DATABYTE5] contain a 24-bit time in seconds
The command will be skipped when the time parameter contains zero.
When the time parameter contains H'FFFFFF' then the channelwill be permanently locked.

'Enable Channel Program' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_ENABLE_PROGRAM (H'B2')
DATABYTE2 = Channel bit

Contents	*Channel*
B'00000001'	Dark output
B'00000010'	Light output
B'00000100'	Motion 1 output
B'00001000'	Light depending motion 1 output
B'00010000'	Motion 2 output
B'00100000'	Light depending motion 2 output

'Disable Channel Program' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_DISABLE_PROGRAM (H'B1')
DATABYTE2 = channel

Contents	*Channel*
B'00000001'	Dark output
B'00000010'	Light output
B'00000100'	Motion 1 output
B'00001000'	Light depending motion 1 output
B'00010000'	Motion 2 output
B'00100000'	Light depending motion 2 output

DATABYTE3 = high byte of delay time
DATABYTE4 = mid byte of delay time
DATABYTE5 = low byte of delay time

Remark:
[DATABYTE3][DATABYTE4][DATABYTE5] contain a 24-bit time in seconds
The command will be skipped when the time parameter contains zero.
When the time parameter contains H'FFFFFF' then the channel program will be permanently disabled.

'Select Program' command received:

SID10-SID9 = 11 (lowest priority)

SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_SELECT_PROGRAM (H'B3')
DATABYTE2 = Program mode

Contents	*Selected programl*
0	None
1	Summer
2	Winter
3	Holiday

'Temperature sensor name request' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_CHANNEL_NAME_REQUEST (H'EF')
DATABYTE2 = don't care

'Temperature request' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_SENSOR_TEMP_REQUEST (H'E5')
DATABYTE2 = Auto send time interval into seconds
(valid range: 10…255s)
(5…9 = auto send on temperature change)
(1…4 = auto send disabled)
(0 = no change on auto send interval)

'Temperature sensor settings request' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_TEMP_SENSOR_SETTINGS_REQUEST (H'E7')
DATABYTE2 = don't care

'Set temperature sensor zone number' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes to send
DATABYTE1 = COMMAND_SET_SENSOR_ZONE_NUMBER (H'C5')
DATABYTE2 = Zone number (0= no zone)

'Set temperature' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 data bytes received
DATABYTE1 = COMMAND_SET_TEMP (H'E4')
DATABYTE2 = Pointer to temperature variable (0…20)

Contents	Temperature variable
11	Calibration offset (-8°…+7.5°C)
12	Reset minimum/maximum temperature
15	Low temperature alarm set
16	High temperature alarm set
28	Calibration gain factor

DATABYTE3 = calibration offset (resolution 0.5°)

Contents	Callibration offset
00001111	+7.5°C
00000001	+0.5°C
00000000	0°C
11111111	-0.5°C
11110000	-8°C

DATABYTE3 = Alarm temperature set (resolution 0.5°)

Contents	Temperature set
01111000	60°C
00000010	1°C
00000001	0.5°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

DATABYTE3 = Reset minimum/maximum temperature

Contents	Reset temperature
00000001	Reset minimum temperature
00000010	Reset maximum temperature

Remark:
Wait at least 10ms for sending a next command on the velbus.

Memory map version 1:

Address	*Contents*	*Address*	*Contents*
0x0000	Dark value low byte	0x0001	Dark value high byte
0x0002	Light value low byte	0x0003	Light value high byte
0x0004	Light to dark reaction time (default 1min)	0x0005	Dark timer mode = non restartable timer
0x0006	Dark timeout (default momentary)	0x0007	Dark flags (default cycling protect off & external overwrite off)
0x0008	Dark to light reaction time (default 1min)	0x0009	Light timer mode = non restartable timer
0x000A	Light timeout (default momentary)	0x000B	Light flags (default cycling protect off & external overwrite off)
0x000C	Motion 1 reaction time (default 0s) (range 0, 1, 2 , 3s)	0x000D	Motion 1 timer mode = restartable timer
0x000E	Motion 1 timeout (default 2min)	0x000F	Motion 1 flags: Bit 0: cycling protect Bit 1: external overwrite
0x0010	Light depending motion 1 reaction time (default 0s) (range 0, 1, 2 , 3s)	0x0011	Light depending motion 1 timer mode = restartable timer
0x0012	Light depending motion 1 timeout (default 2min)	0x0013	Light depending motion 1 flags: Bit 0: cycling protect Bit 1: external overwrite
0x0014	Motion 2 reaction time (default 0s) (range 0, 1, 2 , 3s)	0x0015	Motion 2 timer mode = restartable timer
0x0016	Motion 2 timeout (default 2min)	0x0017	Motion 2 flags: Bit 0:cycling protect Bit 1: external overwrite
0x0018	Light depending motion 2 reaction time (default 0s) (range 0, 1, 2 , 3s)	0x0019	Light depending motion 2 timer mode = restartable timer
0x001A	Light depending motion 2 timeout (default 2min)	0x001B	Light depending motion 2 flags: Bit 0: cycling protect Bit 1: external overwrite
0x001C	Light depending motion 1 dark reaction time = 1min	0x001D	Light depending motion 1 dark timer mode = non restartable timer
0x001E	Light depending motion 1 dark timeout = momentary	0x001F	Light depending motion 1 dark flags = cycling protect = on & external overwrite off
0x0020	Light depending motion 2 dark reaction time = 1min	0x0021	Light depending motion 2 dark timer mode = non restartable timer
0x0022	Light depending motion 2 dark timeout = momentary	0x0023	Light depending motion 2 dark flags = cycling protect = on & external overwrite off
0x0024	Not used	0x0025	Not used
0x0026	Light depending motion 1 dark value low byte	0x0027	Light depending motion 1 dark value high byte
0x0028	Light depending motion 1 light value low byte (0.98*motion 1 dark value)	0x0029	Light depending motion 1 light value high byte
0x002A	Light depending motion 2 dark value low byte	0x002B	Light depending motion 2 dark value high byte
0x002C	Light depending motion 2 light value low byte (0.98*motion 2 dark value)	0x002D	Light depending motion 2 light value high byte
0x002E	Not used	0x002F	Not used
0x0030	Not used	0x0031	Alarm clock configuration
0x0032	Wake up 1 hour (0…23)	0x0033	Wake up 1 minutes (0…59)
0x0034	Go to bed 1 hour (0…23)	0x0035	Go to bed 1 minutes (0…59)
0x0036	Wake up 2 hour (0…23)	0x0037	Wake up 2 minutes (0…59)
0x0038	Go to bed 2 hour (0…23)	0x0039	Go to bed 2 minutes (0…59)
0x003A	Sunrise hour at 21 December (0…23)	0x003B	Sunrise minutes at 21 December (0…59)
0x003C	Sunrise 21 January – sunrise 5 January (-128’..127’)	0x003D	Sunrise 5 February – sunrise 21 January (-128’..127’)
0x003E	Sunrise 21 February – sunrise 5 February (-128’..127’)	0x003F	Sunrise 5 March – sunrise 21 February (-128’..127’)
0x0040	Sunrise 21 March – sunrise 5 March (-128’..127’)	0x0041	Sunrise 5 April – sunrise 21 March (-128’..127’)
0x0042	Sunrise 21 April – sunrise 5 April (-128’..127’)	0x0043	Sunrise 5 May – sunrise 21 April (-128’..127’)
0x0044	Sunrise 21 May – sunrise 5 May (-128’..127’)	0x0045	Sunrise 5 June – sunrise 21 May (-128’..127’)
0x0046	Sunrise 21 June – sunrise 5 June (-128’..127’)	0x0047	Sunrise 5 July – sunrise 21 June (-128’..127’)
0x0048	Sunrise 21 July – sunrise 5 July (-128’..127’)	0x0049	Sunrise 5 August – sunrise 21 July (-128’..127’)
0x004A	Sunrise 21 August – sunrise 5 August (-128’..127’)	0x004B	Sunrise 5 September – sunrise 21 August (-128’..127’)
0x004C	Sunrise 21 September – sunrise 5 September (-128..127’)	0x004D	Sunrise 5 October – sunrise 21 September (-128’..127’)
0x004E	Sunrise 21 October – sunrise 5 October (-128’..127’)	0x004F	Sunrise 5 November – sunrise 21 October (-128’..127’)
0x0050	Sunrise 21 November – sunrise 5 November (-128’..127’)	0x0051	Sunrise 5 December – sunrise 21 November (-128’..127’)
0x0052	Sunrise 21 December – sunrise 5 December (-128’..127’)	0x0053	Sunrise 5 January – sunrise 21 December (-128’..127’)
0x0054	Sunset hour at 21 December (0…23)	0x0055	Sunset minutes at 21 December (0…59)
0x0056	Sunset 21 January – sunrise 5 January (-128’..127’)	0x0057	Sunset 5 February – sunrise 21 January (-128’..127’)
0x0058	Sunset 21 February – sunrise 5 February (-128’..127’)	0x0059	Sunset 5 March – sunrise 21 February (-128’..127’)
0x005A	Sunset 21 March – sunrise 5 March (-128’..127’)	0x005B	Sunset 5 April – sunrise 21 March (-128’..127’)

0x005C	Sunset 21 April – sunrise 5 April (-128'..127')	0x005D	Sunset 5 May – sunrise 21 April (-128'..127')
0x005E	Sunset 21 May – sunrise 5 May (-128'..127')	0x005F	Sunset 5 June – sunrise 21 May (-128'..127')
0x0060	Sunset 21 June – sunrise 5 June (-128'..127')	0x0061	Sunset 5 July – sunrise 21 June (-128'..127')
0x0062	Sunset 21 July – sunrise 5 July (-128'..127')	0x0063	Sunset 5 August – sunrise 21 July (-128'..127')
0x0064	Sunset 21 August – sunrise 5 August (-128'..127')	0x0065	Sunset 5 September – sunrise 21 August (-128'..127')
0x0066	Sunset 21 September – sunrise 5 September (-128'..127')	0x0067	Sunset 5 October – sunrise 21 September (-128'..127')
0x0068	Sunset 21 October – sunrise 5 October (-128'..127')	0x0069	Sunset 5 November – sunrise 21 October (-128'..127')
0x006A	Sunset 21 November – sunrise 5 November (-128'..127')	0x006B	Sunset 5 December – sunrise 21 November (-128'..127')
0x006C	Sunset 21 December – sunrise 5 December (-128'..127')	0x006D	Sunset 5 January – sunrise 21 December (-128'..127')
0x006E	Temperature calibration offset	0x006F	Temperature calibration gain
0x0070	Low temperature alarm set	0x0071	High temperature alarm set
0x0072	Temperature zone number	0x0073	Not used
0x0074	Not used	0x0075	Not used
…	…	…	…
0x007E	Not used	0x007F	Not used
0x0080	Temperature sensor name character 1	0x0081	Temperature sensor name character 2
…	…	…	…
0x008E	Temperature sensor name character 15	0x008F	Temperature sensor name character 16
0x0090	Not used	0x0091	Not used
…	…	…	…
0x00AA	Not used	0x00AB	Module terminator
0x00AC	Location id low byte	0x00AD	Location id high byte
0x00AE	Group id low byte	0x00AF	Group id high byte
0x00B0	Module name character 1	0x00C1	Module name character 2
…	..	..	..
0x00EE	Module name character 63	0x00EF	Module name character 64
0x00F0	Not used	0x00F1	Not used
0x00F2	Not used	0x00F3	Auto send interval of temperature
0x00F4	Auto send interval of light value	0x00F5	Program selection (none/summer/winter/holiday)
0x00F6	Program disable/enable flags	0x00F7	Locked/unlocked flags
0x00F8	Current day (1…31)	0x00F9	Current month (1…12)
0x00FA	Current year high byte	0x00FB	Current year low byte
0x00FC	Zone address	0x00FD	Module Address
0x00FE	Serial number high	0x00FF	Serial number low

Remark:
Unused locations contain H'FF'
Do not overwrite the following address location:

H'00F3'	Auto send interval of temperature for VMBPIRO
H'00F4'	Auto send interval of light value
H'00F5'	program selection
H'00F6'	program enable/disable flags
H'00F7'	locked/unlocked flags
H'00F8'	current day of month
H'00F9'	current month
H'00FA' & H'00FB'	current year
H'00FC'	zone address
H'00FD'	module address
H'00FE' & H'00FF'	module serial number

Reaction time light to dark & dark to light

contents	*Reaction time*
0	0s
1	1s
2	2s
...	
59	59s
60	1min (factory default)
61	1min1s
...	
…	
119	1min59s
120	2min
121	2min15s
...	

131	4min45s
132	5min
133	5min30s
...	
181	29min30s
182	30min
183	31min
...	
211	59min
212	1h

Reaction time motion & light depending motion

contents	*Reaction time*
0	0s (factory default)
1	1s
2	2s
3	3s
3s59	59s

Timer mode (dark, light, motion & light depending motion)

Contents	*Timer mode*
H'00'	non restartable timer (for dark & light)
H'FF'	restartable timer (for motion & light depending motion)

Timeout (light to dark, dark to light, motion & light depending motion)

Contents	*Timeout*
0	0 = momentary (factory default for dark, light & motion)
1	1s
2	2s
...	
119	1min59s
120	2min (factory default for light depending motion)
121	2min15s
...	
131	4min45s
132	5min
133	5min30s
...	
181	29min30s
182	30min
183	31min
...	
211	59min
212	1h
213	1h15min
...	
227	4h45min
228	5h
229	5h30min
...	
237	9h30min
238	10h

Dark flags

Contents	*Timer mode*
B'xxxxxxx0'	Cycling protection disabled
B'xxxxxxx1'	Cycling protection enabled
B'xxxxxx0x'	External overwrite disabled
B'xxxxxx1x'	External overwrite enabled

Light flags

Contents	*Timer mode*

B’xxxxxxx0’	Cycling protection disabled
B’xxxxxxx1’	Cycling protection enabled
B’xxxxxx0x’	External overwrite disabled
B’xxxxxx1x’	External overwrite enabled

Motion flags

Contents	*Timer mode*
B’xxxxxxx0’	Cycling protection disabled -> time-out interruptable
B’xxxxxxx1’	Cycling protection enabled -> time-out not interruptable
B’xxxxxx0x’	External overwrite disabled
B’xxxxxx1x’	External overwrite enabled

Light depending motion flags

Contents	*Timer mode*
B’xxxxxxx0’	Cycling protection disabled -> time-out interruptable
B’xxxxxxx1’	Cycling protection enabled -> time-out not interruptable
B’xxxxxx0x’	External overwrite disabled
B’xxxxxx1x’	External overwrite enabled

Alarm clock configuration

Contents	*Channel locked/unlocked*
B'xxxxxxx0'	Alarm 1 disabled
B'xxxxxxx1'	Alarm 1 enabled
B'0xxxxx0x'	Local alarm 1
B'1xxxxx1x'	Global alarm 1
B'xxxxx0xx'	Alarm 2 disabled
B'xxxxx1xx'	Alarm 2 enabled
B'xxxx0xxx'	Local alarm 2
B'xxxx1xxx'	Global alarm 2
B'xxx0xxxx'	Sunrise disabled
B'xxx1xxxx'	Sunrise enabled
B'xx0xxxxx'	Sunset disabled
B'xx1xxxxx'	Sunset enabled
B'x0xxxxxx'	Daylight savings disabled
B'x1xxxxxx'	Daylight savings enabled

Program selection

Contents	*Selected program*
0	None
1	Group 1 (eg. Summer programs)
2	Group 2 (eg. Winter programs)
3	Group 3 (eg. Holiday programs)

Channel program disabled

Contents	*Channel program enabled/disabled*
B'xxxxxxx0'	Dark program enabled
B'xxxxxxx1'	Dark program disabled
B'xxxxxx0x'	Light program enabled
B'xxxxxx1x'	Light program disabled
B'xxxxx0xx'	Motion 1 program enabled
B'xxxxx1xx'	Motion 1 program disabled
B'xxxx0xxx'	Light depending motion 1 program enabled
B'xxxx1xxx'	Light depending motion 1 program disabled
B'xxx0xxxx'	Motion 2 program enabled
B'xxx1xxxx'	Motion 2 program disabled
B'xx0xxxxx'	Light depending motion 2 program enabled
B'xx1xxxxx'	Light depending motion 2 program disabled

Channel locked

Contents	*Channel locked/unlocked*
B'xxxxxxx0'	Dark output unlocked
B'xxxxxxx1'	Dark output locked
B'xxxxxx0x'	Light output unlocked
B'xxxxxx1x'	Light output locked
B'xxxxx0xx'	Motion 1 output unlocked
B'xxxxx1xx'	Motion 1 output locked
B'xxxx0xxx'	Light depending motion 1 output unlocked
B'xxxx1xxx'	Light depending motion 1 output locked
B'xxx0xxxx'	Motion 2 output unlocked
B'xxx1xxxx'	Motion 2 output locked
B'xx0xxxxx'	Light depending motion 2 output unlocked
B'xx1xxxxx'	Light depending motion 2 output locked

Temperature calibration offset (resolution 0.5°):

Contents	Calibration offset
00001111	Calibration offset +7.5°C
…	…
00000001	Calibration offset +0.5°C
00000000	Calibration offset +0°C (default)
11111111	Calibration offset -0.5°C

…	…
11110000	Calibration offset -8°C

Temperature calibration gain:

Contents	Calibration gain
0	Calibration gain
…	…
128	Calibration gain (default)
…	…
255	Calibration gain

Calibrated Temperature = (gain/128) * sensortemperature + offset

Low temperature alarm (resolution 0.5°):

Contents	Temperature set
01111000	60°C
00101000	20°C
00000010	1°C
00000001	0.5°C
00000000	0°C (default)
11111111	-0.5°C
11000000	-32°C

High temperature alarm (resolution 0.5°):

Contents	Temperature set
01111000	60°C (default)
00101000	20°C
00000010	1°C
00000001	0.5°C
00000000	0°C
11111111	-0.5°C
11000000	-32°C

Temp. sensor zone

Contents	***Zone***
0	No zone (default)
1	Zone 1...
...	...
255	Zone 255

Address	*Contents*	*Address*	*Contents*
H'0100'	Linked Push button 1 module address	H'0101'	Linked Push button 1 bit number
H'0102'	Linked Push button 1 action	H'0103'	Linked Push button 1 time parameter
H'0104'	Linked Push button 1 channel parameter	...	…
...	...	...	...
H'0178'	Linked Push button 25 module address	H'0179'	Linked Push button 25 bit number
H'017A'	Linked Push button 25 action	H'017B'	Linked Push button 25 time parameter
H'017C'	Linked Push button 25 channel parameter	H'017D'	Not used
H'017E'	Not used	H'017F'	Not used

Action

Action number	**Action**	**Time parameter**	**Bit number**
0	Lock channel at closed switch	-	Channel bit
1	Lock channel at opened switch	-	Channel bit
2	Lock channel	Timeout	Channel bit
3	Lock/unlock channel	Timeout	Channel bit
4	Unlock channel	-	Channel bit
5	Disable channel program at closed switch	-	Channel bit
6	Disable channel program at opened switch	-	Channel bit
7	Disable channel program channel	Timeout	Channel bit
8	Disable/enable channel program	Timeout	Channel bit
9	Enable channel program	-	Channel bit
10	Select no programs	-	-
11	Select program group 1 (e.g. summer programs)	-	-
12	Select/deselect program group 1 (e.g. summer programs)	-	-
13	Select program group 2 (e.g. winter programs)	-	-
14	Select/deselect program group 2 (e.g. winter programs)	-	-
15	Select program group 3 (e.g. holiday programs)	-	-
16	Select/deselect program group 3 (e.g. holiday programs)	-	-
17	Enable Alarm 1 at closed switch	-	-
18	Enable Alarm 1 at open switch	-	-
19	Disable Alarm 1 at closed switch	-	-
20	Disable Alarm 1 at open switch	-	-
21	Enable Alarm 1	-	-
22	Enable/Disable Alarm 1	-	-
23	Disable Alarm 1	-	-
24	Enable Alarm 2 at closed switch	-	-
25	Enable Alarm 2 at open switch	-	-
26	Disable Alarm 2 at closed switch	-	-
27	Disable Alarm 2 at open switch	-	-
28	Enable Alarm 2	-	-
29	Enable/Disable Alarm 2	-	-
30	Disable Alarm 2	-	-
31	Enable Sunrise at closed switch	-	-
32	Enable Sunrise at open switch	-	-
33	Disable Sunrise at closed switch	-	-
34	Disable Sunrise at open switch	-	-
35	Enable Sunrise	-	-
36	Enable/Disable Sunrise	-	-
37	Disable Sunrise	-	-
38	Enable Sunset at closed switch	-	-
39	Enable Sunset at open switch	-	-
40	Disable Sunset at closed switch	-	-
41	Disable Sunset at open switch	-	-
42	Enable Sunset	-	-
43	Enable/Disable Sunset	-	-
44	Disable Sunset	-	-

Bit Number

Contents	*Bit number*
B’00000001’	Dark output
B’00000010’	Light output
B’00000100’	Motion 1 output
B’00001000’	Light depending motion 1 output
B’00010000’	Motion 2 output
B’00100000’	Light depending motion 2 output

Time parameter

Time parameter	Timeout
0	0s (No timer)
1	1s
2	2s
...	
119	1min59s
120	2min
121	2min15s
...	
131	4min45s
132	5min
133	5min30s
...	
181	29min30s
182	30min
183	31min
...	
211	59min
212	1h
213	1h15min
...	
227	4h45min
228	5h
229	5h30min
...	
237	9h30min
238	10h
239	11h
...	
251	23h
252	1d
253	2d
254	3d
255	infinite

Address	*Contents*	*Address*	*Contents*
H'0180'	Program step 1 byte1	H'0181'	Program step 1 byte2
H'0182'	Program step 1 byte3	H'0183'	Program step 1 byte4
H'0184'	Program step 1 byte5	H'0185'	Program step 1 byte6
…	…	…	…
H'01F8'	Program step 21 byte 1	H'01F9'	Program step 21 byte2
H'01FA'	Program step 21 byte3	H'01FB'	Program step 21 byte4
H'01FC'	Program step 21 byte5	H'01FD'	Program step 21 byte6
H'01FE'	Not used	H'01FF'	Not used

Contents program byte1	*Description*
B'000xxxxx'	Disable program step
B'001xxxxx'	Absolute time
B'010xxxxx'	Wake up time 1 + relative time
B'011xxxxx'	Go to bed time 1 + relative time
B'100xxxxx'	Wake up time 2 + relative time
B'101xxxxx'	Go to bed time 2 + relative time
B'110xxxxx'	Sunrise + relative time
B'111xxxxx'	Sunset + relative time
B'xxx01111'	Rel. time = 3h45min
…	
B'xxx00001'	Rel. time = 15min
B'xxx00000'	Rel. time = 0
B'xxx11111'	Rel. time = -15min
…	
B'xxx10000'	Rel. time = -4h

Remark: Wake up, Go to bed, sunrise & sunset time are only allowed for weekly programs

Contents program byte2	*Description*
B'xxxx0000'	Weekly program
B'xxxx0001'	January
B'xxxx0010'	February
B'xxxx0011'	March
B'xxxx0100'	April
B'xxxx0101'	May
B'xxxx0110'	June
B'xxxx0111'	July
B'xxxx1000'	August
B'xxxx1001'	September
B'xxxx1010'	October
B'xxxx1011'	November
B'xxxx1100'	December
B'xxxx1101'	Monthly program
B'xxxx1110'	Monthly program
B'xxxx1111'	Monthly program

Contents program byte3	*Description*
B'xxx00000'	0h
B'xxx00001'	1h
…	…
B'xxx10111'	23h
B'xx1xxxxx'	Summer program
B'x1xxxxxx'	Winter program
B'1xxxxxxx'	Holiday program

Contents program byte4	*Description*
B'xx000000'	0min
B'xx000001'	1min
…	…
B'xx111011'	59min

Contents program byte4	*Contents program byte2*	*Description*
B’00xxxxxx’	B’0000xxxx’	Never
B’00xxxxxx’	B’0001xxxx’	Day 1of the month
B’00xxxxxx’	B’0010xxxx’	Day 2of the month
…	…	…
B’01xxxxxx’	B’1111xxxx’	Day 31of the month
B’10xxxxxx’	B’0000xxxx’	Never
B’10xxxxxx’	B’0001xxxx’	Every Monday
B’10xxxxxx’	B’0010xxxx’	Every Tuesday
…	…	…
B’10xxxxxx’	B’0111xxxx’	Every Sunday
B’10xxxxxx’	B’1000xxxx’	Every weekend (sa & su)
B’10xxxxxx’	B’1001xxxx’	Every working day (mo…fr)
B’10xxxxxx’	B’1010xxxx’	Every day except Sunday
B’10xxxxxx’	B’1011xxxx’	Every day
B’10xxxxxx’	B’1100xxxx’	Never
…	…	…
B’11xxxxxx’	B’1111xxxx’	Never

Contents program byte5	**Action**
0	Unlock
1	Lock

Contents program byte6	**Channel**
B’00000001’	Dark output
B’00000010’	Light output
B’00000100’	Motion 1 output
B’00001000’	Light depending motion 1 output
B’00010000’	Motion 2 output
B’00100000’	Light depending motion 2 output