VMB4LEDPWM-20

4 channel led PWM dimmer 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)

Transmits power up message:
    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = 0x00
    RTR = 0
    DLC3...DLC0 = 2 data byte to send
    DATABYTE1 = COMMAND_POWER_UP (0xAB)
    DATABYTE2 = module address

Transmits real time clock status request:
    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = 0x00
    RTR = 0
    DLC3...DLC0 = 1 data byte to send
    DATABYTE1 = COMMAND_REALTIME_CLOCK_STATUS_REQUEST (0xD7)

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 (0xD8)
    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 (0xB7)
    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 (0xAF)
    DATABYTE2 = 0 =disabled / 1 = enabled

Transmits the module type:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 8 data bytes to send
    DATABYTE1 = COMMAND_MODULE_TYPE (0xFF)
    DATABYTE2 = type (0x06 = VMB4LEDPWM-20)
    DATABYTE3 = High byte of serial number
    DATABYTE4 = Low byte of serial number
    DATABYTE5 = Memory map version
    DATABYTE6 = Build year
    DATABYTE7 = Build week
    DATABYTE8 = Properties

Contents	Output channel
B'xxxxxxx0'	Terminator open
B'xxxxxxx1'	Terminator closed
B'xxxx000x'	Hardware version number
B'xxx0xxxx'	Velbus connection type
B'xx0xxxxx'	Only standard CAN allowed
B'xx1xxxxx'	CAN FD support

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 (0xDA)
    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 (0xFE)
    DATABYTE2 = High memory address
    DATABYTE3 = LOW memory address
    DATABYTE4 = memory data

    Remark: address range: 0x0000 to 0x07FF

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 (0xCC)
    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: 0x0000 to 0x07FC

Transmits memory data block (5...60 bytes)(only allowed for CAN FD frames):

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = number of data bytes to send

Contents	Number of data bytes
0x09	12 data bytes
0x0A	16 data bytes
0x0B	20 data bytes
0x0C	24 data bytes
0x0D	32 data bytes
0x0E	48 data bytes
0x0F	64 data bytes

DATABYTE1 = COMMAND_MEMORY_DATA_BLOCK (0xCC)
DATABYTE2 = High start address of memory block
DATABYTE3 = LOW start address of memory block
DATABYTE4 = memory block length (5…60)
DATABYTE5 = memory data 1
…
DATABYTE12 = memory data 8 (end of data for DLC3...DLC0 = 0x09)
…
DATABYTE16 = memory data 12 (end of data for DLC3...DLC0 = 0x0A)
…
DATABYTE20 = memory data 16 (end of data for DLC3...DLC0 = 0x0B)
…
DATABYTE24 = memory data 20 (end of data for DLC3...DLC0 = 0x0C)
…
DATABYTE32 = memory data 28 (end of data for DLC3...DLC0 = 0x0D)
…
DATABYTE48 = memory data 44 (end of data for DLC3...DLC0 = 0x0E)
…
DATABYTE64 = memory data 60 (end of data for DLC3...DLC0 = 0x0F)

Remark:
Contents of unused data bytes = 0x55
Address range: 0x0000 to (0x0800 – memory block length)

Transmits the first part of channel name:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 data bytes to send
DATABYTE1 = COMMAND_CHANNEL_NAME_PART1 (0xF0)
DATABYTE2 = Channel 1…4
DATABYTE3 = Character 1 of the channel name
DATABYTE4 = Character 2 of the channel name
DATABYTE5 = Character 3 of the channel name
DATABYTE6 = Character 4 of the channel name
DATABYTE7 = Character 5 of the channel name
DATABYTE8 = Character 6 of the channel name

Transmits the second part of the channel name:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 8 data bytes to send
    DATABYTE1 = COMMAND_CHANNEL_NAME_PART2 (0xF1)
    DATABYTE2 = Channel 1…4
    DATABYTE3 = Character 7 of the channel name
    DATABYTE4 = Character 8 of the channel name
    DATABYTE5 = Character 9 of the channel name
    DATABYTE6 = Character 10 of the channel name
    DATABYTE7 = Character 11 of the channel name
    DATABYTE8 = Character 12 of the channel name

Transmits the third part of the channel name:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 6 data bytes to send
    DATABYTE1 = COMMAND_CHANNEL_NAME_PART3 (0xF2)
    DATABYTE2 = Channel 1…4
    DATABYTE3 = Character 13 of the channel name
    DATABYTE4 = Character 14 of the channel name
    DATABYTE5 = Character 15 of the channel name
    DATABYTE6 = Character 16 of the channel name

    Remarks:
    Unused characters contain H'FF'.

Transmits the channel status:

    SID10-SID9 = 00 (highest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 4 data bytes to send
    DATABYTE1 = COMMAND_PUSH_BUTTON_STATUS (0x00)
    DATABYTE2 = Channel 1…4 just pressed
    DATABYTE3 = Channel 1…4 just released
    DATABYTE4 = 0

	Databyte2	*Databyte3*	*Databyte4*
ch1 just switched on	B'0000xxx1'	B'0000xxx0'	B'00000000'
ch1 just switched off	B'0000xxx0'	B'0000xxx1'	B'00000000'
ch2 just switched on	B'0000xx1x'	B'0000xx0x'	B'00000000'
ch2 just switched off	B'0000xx0x'	B'0000xx1x'	B'00000000'
ch3 just switched on	B'0000x1xx'	B'0000x0xx'	B'00000000'
ch3 just switched off	B'0000x0xx'	B'0000x1xx'	B'00000000'
ch4 just switched on	B'00001xxx'	B'00000xxx'	B'00000000'
ch4 just switched off	B'00000xxx'	B'00001xxx'	B'00000000'

Transmits channel slider status:

    SID10-SID9 = 00 (highest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 4 data bytes to send
    DATABYTE1 = COMMAND_SLIDER_STATUS (0x0F)
    DATABYTE2 = slider channel 1…4
    DATABYTE3 = dim raw value 0...254 (slider status)
    DATABYTE4 = 0x00

Transmits the module status:

 SID10-SID9 = 11 (lowest priority)
 SID8...SID1 = Module address
 RTR = 0
 DLC3...DLC0 = 8 data bytes to send
 DATABYTE1 = COMMAND_DIMMER_STATUS (0xEE)
 DATABYTE2 = channel 1…4 status
 DATABYTE3 = channel 1…4 inhibited status (1 = inhibited)
 DATABYTE4 = channel 1…4 forced on status (1 = forced on)
 DATABYTE5 = channel 1…4 forced off (locked) status (1 = forced off)
 DATABYTE6 = disabled channel 1…4 program status (0 = program enabled / 1 = program disabled)
 DATABYTE7 = channel 1…4 error status (0 = normal / 1 = error)
 DATABYTE8 = alarm & program selection

Contents	Selected program
B'xxxxxx00'	None
B'xxxxxx01'	Program group 1 (Summer)
B'xxxxxx10'	Program group 2 (Winter)
B'xxxxxx11'	Program group 3 (Holiday)
B'xxxxx0xx'	Clock alarm 1 off
B'xxxxx1xx'	Clock alarm 1 on
B'xxxx0xxx'	Local clock alarm 1
B'xxxx1xxx'	Global clock alarm 1
B'xxx0xxxx'	Clock alarm 2 off
B'xxx1xxxx'	Clock alarm 2 on
B'xx0xxxxx'	Local clock alarm 2
B'xx1xxxxx'	Global clock alarm 2
B'x0xxxxxx'	Sunrise disabled
B'x1xxxxxx'	Sunrise enabled
B'0xxxxxxx'	Sunset disabled
B'1xxxxxxx'	Sunset enabled

Transmits the dim value status:

 SID10-SID9 = 11 (lowest priority)
 SID8...SID1 = Module address
 RTR = 0
 DLC3...DLC0 = 3…6 data bytes to send
 DATABYTE1 = COMMAND_DIMVALUE_STATUS (0xA5)
 DATABYTE2 = Channel 1…4
 DATABYTE3 = dim value (0…254) of channel x (exponential curve)
 DATABYTE4 = dim value (0…254) of channel x+1 (optional) (exponential curve)
 DATABYTE5 = dim value (0…254) of channel x+2 (optional) (exponential curve)
 DATABYTE6 = dim value (0…254) of channel x+3 (optional) (exponential curve)

 Remark: dimvalue of 255 = unchanged

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 (0xF5)
 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 (0xF6)
 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 (0xF7)
    DATABYTE2 = LED bit numbers (1 = slow blink LED)

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

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Address of the linked push button module for fast blinking LEDs
    RTR = 0
    DLC3...DLC0 = 2 data bytes to send
    DATABYTE1 = COMMAND_FAST_BLINKING_LED (0xF8)
    DATABYTE2 = LED bit numbers (1 = fast blink LED)

Transmit device settings:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = data bytes to send
    DATABYTE1 = COMMAND_TEMP_SENSOR_SETTINGS_P1 (0xE8)
    DATABYTE2 = Channel 1…4
    DATABYTE3 = setting index (0…28)

index	Configuration	DLC3…0 (# of data bytes)
0	Scene S0 level (+ RGBW for color control device)	4 (or 8 for color control device)
1	Scene S1 level (+ RGBW for color control device)	4 (or 8 for color control device)
2	Scene S2 level (+ RGBW for color control device)	4 (or 8 for color control device)
3	Scene S3 level (+ RGBW for color control device)	4 (or 8 for color control device)
4	Scene S4 level (+ RGBW for color control device)	4 (or 8 for color control device)
5	Scene S5 level (+ RGBW for color control device)	4 (or 8 for color control device)
6	Scene S6 level (+ RGBW for color control device)	4 (or 8 for color control device)
7	Scene S7 level (+ RGBW for color control device)	4 (or 8 for color control device)
8	Scene S8 level (+ RGBW for color control device)	4 (or 8 for color control device)
9	Scene S9 level (+ RGBW for color control device)	4 (or 8 for color control device)
10	Scene S10 level (+ RGBW for color control device)	4 (or 8 for color control device)
11	Scene S11 level (+ RGBW for color control device)	4 (or 8 for color control device)
12	Scene S12 level (+ RGBW for color control device)	4 (or 8 for color control device)
13	Scene S13 level (+ RGBW for color control device)	4 (or 8 for color control device)
14	Scene S14 level (+ RGBW for color control device)	4 (or 8 for color control device)
15	Scene S15 level (+ RGBW for color control device)	4 (or 8 for color control device)
16	*Power-on level (+ RGBW for color control device)*	*4 (or 8 for color control device)*
17	*System failure level (+ RGBW for color control device)*	*4 (or 8 for color control device)*
18	Minimum level	4
19	Maximum level	4
20	Fade time & fade rate	4
21	*Group members G0…15*	*5*
22	*Group Gx members A0…31 (only allowed for group addresses)*	*7*
23	*Group Gx members A32…63 (only allowed for group addresses)*	*7*
24	-	-
25	Device type	4
26	Actual level (+ RGBW for color control device)	4 (or 8 for color control device)

DATABYTE4 = level (raw data 0…254, 255 = no change) (exponential curve)

RAW	%	RAW	%	RAW	%	RAW	%	RAW	%	RAW	%	RAW	%
0	0	40	0.290	80	0.864	120	2.58	160	7.68	200	22.89	240	68.23
1	0.1	41	0.298	81	0.888	121	2.65	161	7.89	201	23.53	241	70.12
2	0.103	42	0.306	82	0.913	122	2.72	162	8.11	202	24.18	242	72.06
3	0.106	43	0.315	83	0.938	123	2.80	163	8.34	203	24.85	243	74.06
4	0.109	44	0.324	84	0.964	124	2.87	164	8.57	204	25.53	244	76.11
5	0.112	45	0.332	85	0.991	125	2.95	165	8.80	205	26.24	245	78.21
6	0.115	46	0.342	86	1.018	126	3.04	166	9.05	206	26.97	246	80.38
7	0.118	47	0.351	87	1.047	127	3.12	167	9.30	207	27.71	247	82.60
8	0.121	48	0.361	88	1.076	128	3.21	168	9.56	208	28.48	248	84.89
9	0.124	49	0.371	89	1.105	129	3.29	169	9.82	209	29.27	249	87.24
10	0.128	50	0.381	90	1.136	130	3.39	170	10.09	210	30.08	250	89.65
11	0.131	51	0.392	91	1.167	131	3.48	171	10.37	211	30.91	251	92.14

12	0.135	52	0.402	92	1.200	132	3.58	172	10.66	212	31.77	252	94.69
13	0.139	53	0.414	93	1.233	133	3.67	173	10.95	213	32.65	253	97.31
14	0.143	54	0.425	94	1.267	134	3.78	174	11.26	214	33.55	254	100
15	0.147	55	0.437	95	1.302	135	3.88	175	11.57	215	34.48	255	No change
16	0.151	56	0.449	96	1.338	136	3.99	176	11.89	216	35.43		
17	0.155	57	0.461	97	1.375	137	4.10	177	12.22	217	36.41		
18	0.159	58	0.474	98	1.413	138	4.21	178	12.55	218	37.42		
19	0.163	59	0.487	99	1.452	139	4.33	179	12.90	219	38.46		
20	0.168	60	0.501	100	1.492	140	4.45	180	13.26	220	39.52		
21	0.173	61	0.515	101	1.534	141	4.57	181	13.63	221	40.62		
22	0.177	62	0.529	102	1.576	142	4.70	182	14.00	222	41.74		
23	0.182	63	0.543	103	1.620	143	4.83	183	14.39	223	42.90		
24	0.187	64	0.559	104	1.665	144	4.96	184	14.79	224	44.08		
25	0.193	65	0.574	105	1.711	145	5.10	185	15.20	225	45.30		
26	0.198	66	0.590	106	1.758	146	5.24	186	15.62	226	46.56		
27	0.203	67	0.606	107	1.807	147	5.39	187	16.05	227	47.85		
28	0.209	68	0.623	108	1.857	148	5.53	188	16.50	228	49.17		
29	0.215	69	0.640	109	1.908	149	5.69	189	16.95	229	50.53		
30	0.221	70	0.658	110	1.961	150	5.85	190	17.42	230	51.93		
31	0.227	71	0.676	111	2.02	151	6.01	191	17.90	231	53.37		
32	0.233	72	0.695	112	2.07	152	6.17	192	18.40	232	54.84		
33	0.240	73	0.714	113	2.13	153	6.34	193	18.91	233	56.36		
34	0.246	74	0.734	114	2.19	154	6.52	194	19.43	234	57.92		
35	0.253	75	0.754	115	2.25	155	6.70	195	19.97	235	59.53		
36	0.260	76	0.775	116	2.31	156	6.89	196	20.52	236	61.17		
37	0.267	77	0.796	117	2.37	157	7.08	197	21.09	237	62.87		
38	0.275	78	0.819	118	2.44	158	7.27	198	21.68	238	64.61		
39	0.282	79	0.841	119	2.51	159	7.47	199	22.28	239	66.39		

DATABYTE5 = red value (0…254, 255 = no change)
DATABYTE6 = green value (0…254, 255 = no change)
DATABYTE7 = blue value (0…254, 255 = no change)
DATABYTE8 = white value (0…254, 255 = no change)
DATABYTE4 = fade time (raw data 0…15)

Fade raw data	Fade time / rate
H'0x'	No fade
H'1x'	Fade time 0.7 s
H'2x'	Fade time 1.0 s
H'3x'	Fade time 1.4 s
H'4x'	Fade time 2.0 s
H'5x'	Fade time 2.8 s
H'6x'	Fade time 4.0 s
H'7x'	Fade time 5.7 s
H'8x'	Fade time 8.0 s
H'9x'	Fade time 11.3 s
H'Ax'	Fade time 16.0 s
H'Bx'	Fade time 22.6 s
H'Cx'	Fade time 32.0 s
H'Dx'	Fade time 45.3 s
H'Ex'	Fade time 64.0 s
H'Fx'	Fade time 90.5 s
H'x0'	Fade rate not applicable
H'x1'	Fade rate 358.0 steps/s
H'x2'	Fade rate 253.0 steps/s
H'x3'	Fade rate 179.0 steps/s
H'x4'	Fade rate 127.0 steps/s
H'x5'	Fade rate 89.4 steps/s
H'x6'	Fade rate 63.3 steps/s
H'x7'	Fade rate 44.7 steps/s
H'x8'	Fade rate 31.6 steps/s
H'x9'	Fade rate 22.4 steps/s
H'xA'	Fade rate 15.8 steps/s
H'xB'	Fade rate 11.2 steps/s
H'xC'	Fade rate 7.9 steps/s
H'xD'	Fade rate 5.6 steps/s
H'xE'	Fade rate 4.0 steps/s
H'xF'	Fade rate 2.8 steps/s

DATABYTE4 = device type

contents	Device type

0	*Fluorescent lamp*
1	*Emergency lamp*
2	*Discharge lamp*
3	*Low voltage lamp*
4	Dimmer
5	Conversion to dc
6	Led module
7	*Relay*
8	Color control
9	*Sequencer*
254	*Device present*
255	No device present

Transmits program step info:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 8 data bytes to send
DATABYTE1 = COMMAND_PROGRAM_STEP_INFO (0xC1)
DATABYTE2 = Program step number (1...116 / 255 step not found)
DATABYTE3 = Program reference

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

DATABYTE4 = Program step month & four least significant bits of day

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

Contents_byte6	Contents_byte4	Description
00xxxxxx	*0000xxxx*	*Never*
00xxxxxx	*0001xxxx*	*Day 1of the month*
00xxxxxx	*0010xxxx*	*Day 2of the month*

...	...	...
01xxxxxx	1111xxxx	Day 31of the month
10xxxxxx	0000xxxx	Never
10xxxxxx	0001xxxx	Every Monday
10xxxxxx	0010xxxx	Every Tuesday
...	...	...
10xxxxxx	0111xxxx	Every Sunday
10xxxxxx	1000xxxx	Every weekend (sa & su)
10xxxxxx	1001xxxx	Every working day (mo…fr)
10xxxxxx	1010xxxx	Every day except Sunday
10xxxxxx	1011xxxx	Every day
10xxxxxx	1100xxxx	Never
...	...	...
11xxxxxx	1111xxxx	Never

DATABYTE5 = Program step hour & group number

Contents	Description
xxx00000	0h
xxx00001	1h
...	...
xxx10111	23h
xx1xxxxx	Program group 1 (Summer program)
x1xxxxxx	Program group 2 (Winter program)
1xxxxxxx	Program group 3 (Holiday program)

DATABYTE6 = Program step minute & every flag & msb of day

Contents	Description
xx000000	0min
xx000001	1min
...	...
xx111011	59min

Contents_byte6	Contents byte4	Description
00xxxxxx	0000xxxx	Never
00xxxxxx	0001xxxx	Day 1of the month
00xxxxxx	0010xxxx	Day 2of the month
...	...	...
01xxxxxx	1111xxxx	Day 31of the month
10xxxxxx	0000xxxx	Never
10xxxxxx	0001xxxx	Every Monday
10xxxxxx	0010xxxx	Every Tuesday
...	...	...
10xxxxxx	0111xxxx	Every Sunday
10xxxxxx	1000xxxx	Every weekend (sa & su)
10xxxxxx	1001xxxx	Every working day (mo…fr)
10xxxxxx	1010xxxx	Every day except Sunday
10xxxxxx	1011xxxx	Every day
10xxxxxx	1100xxxx	Never
...	...	...
11xxxxxx	1111xxxx	Never

DATABYTE7 = Program step action

Contents	Action
0	Not yet implemented

DATABYTE8 = Channel

Contents	Channel
1	Channel 1
...	...
4	Channel 4

'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 (0x00)
    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)

Power up message' received:
    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = 0x00
    RTR = 0
    DLC3...DLC0 = 2 data byte received
    DATABYTE1 = COMMAND_POWER_UP (0xAB)
    DATABYTE2 = module address

'CAN FD enable command' received:
    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = 0x00
    RTR = 0
    DLC3...DLC0 = 2 data byte received
    DATABYTE1 = COMMAND_SET_CLR_LEARN_RF_CODE (0xB5)
    DATABYTE2 = enable/disable (0 = disable CAN FD / 1 = enable CAN FD)

'Real time clock status request' command received:
    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = 0x00
    RTR = 0
    DLC3...DLC0 = 1 data byte to send
    DATABYTE1 = COMMAND_REALTIME_CLOCK_STATUS_REQUEST (0xD7)

'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 (0xD7)

'Set real time clock' command received:
    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = 0x00
    RTR = 0
    DLC3...DLC0 = 4 data bytes received
    DATABYTE1 = COMMAND_SET_REALTIME_CLOCK (0xD8)
    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 = 0x00
    RTR = 0
    DLC3...DLC0 = 5 data bytes received
    DATABYTE1 = COMMAND_SET_REALTIME_DATE (0xB7)
    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 = 0x00
    RTR = 0
    DLC3...DLC0 = 2 data bytes received
    DATABYTE1 = COMMAND_SET_DAYLIGHT_SAVING (0xAF)
    DATABYTE2 = 0 =disabled / 1 = enabled

‘Enable/disable global sunrise/sunset related actions’ command received:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = 0x00
    RTR = 0
    DLC3...DLC0 = 3 data bytes received
    DATABYTE1 = COMMAND_ENA_DIS_SUNRISE_SUNSET (0xAE)
    DATABYTE2 = Channel (0xFF)
    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 received
    DATABYTE1 = COMMAND_ENA_DIS_SUNRISE_SUNSET (0xAE)
    DATABYTE2 = Channel (0xFF)
    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 = 0x00
    RTR = 0
    DLC3...DLC0 = 7 data bytes received
    DATABYTE1 = COMMAND_SET_ALARM_CLOCK (0xC3)
    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 received
    DATABYTE1 = COMMAND_SET_ALARM_CLOCK (0xC3)
    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 (0xFA)
    DATABYTE2 = don't care

'Channel 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 (0xEF)
    DATABYTE2 = Channel 1…4

    Remark: channel = 0xFF for all channels

'Clear channel LED' command received:
    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Linked module address
    RTR = 0
    DLC3...DLC0 = 2 data bytes received
    DATABYTE1 = COMMAND_CLEAR_LED (0xF5)
    DATABYTE2 = LEDs to clear (a one clears the corresponding LED of channel 1 to 8)

'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 (0xF5)
    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 (0xF6)
    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 (0xF7)
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 (0xF8)
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 (0xF9)
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 (0xF4)
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 (0xFD)
DATABYTE2 = High memory address
DATABYTE3 = LOW memory address

Remark: address range: 0x0000 to 0x07FF

'Read data block from memory' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 data bytes received / 4 data bytes for CAN FD response
DATABYTE1 = COMMAND_READ_MEMORY_BLOCK (0xC9)
DATABYTE2 = High memory address
DATABYTE3 = LOW memory address
DATABYTE4 = memory block length (5…60)

Remark:
address range: 0x0000 to 0x07FC
address range: 0x0000 to (0x0800 – memory block length) for CAN FD response

'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 (0xCB)

'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 (0xFC)
    DATABYTE2 = High memory address
    DATABYTE3 = LOW memory address
    DATABYTE4 = memory data to write

    Remark:
    Wait for 'memory data' feedback before sending a next command on the velbus.
    Address range: 0x0000 to 0x07FF
    Read only location cannot be changed
    Terminate always with a write command at the last memory location.

'Write memory block' command received:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 7 data bytes received
    DATABYTE1 = COMMAND_WRITE_MEMORY_BLOCK (0xCA)
    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

    Or

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Address of the module
    RTR = 0
    DLC3...DLC0 = number of data bytes to send

Contents	Number of data bytes
0x09	12 data bytes
0x0A	16 data bytes
0x0B	20 data bytes
0x0C	24 data bytes
0x0D	32 data bytes
0x0E	48 data bytes
0x0F	64 data bytes

    DATABYTE1 = COMMAND_WRITE_MEMORY_BLOCK (0xCA)
    DATABYTE2 = High memory address
    DATABYTE3 = LOW memory address

DATABYTE4 = memory block length (5…60)
DATABYTE5 = memory data 1 to write
…
DATABYTE12 = memory data 8 to write (end of data for DLC3...DLC0 = 0x09)
…
DATABYTE16 = memory data 12 to write (end of data for DLC3...DLC0 = 0x0A)
…
DATABYTE20 = memory data 16 to write (end of data for DLC3...DLC0 = 0x0B)
…
DATABYTE24 = memory data 20 to write (end of data for DLC3...DLC0 = 0x0C)
…
DATABYTE32 = memory data 28 to write (end of data for DLC3...DLC0 = 0x0D)
…
DATABYTE48 = memory data 44 to write (end of data for DLC3...DLC0 = 0x0E)
…
DATABYTE64 = memory data 60 to write (end of data for DLC3...DLC0 = 0x0F)

Remark:
Wait for 'memory data block' feedback before sending a next command on the velbus.
address range: 0x0000 to 0x07FC for standard CAN response
address range: 0x0000 to (0x0800 – memory block length) for CAN FD response
Contents of unused data bytes = 0x55
Terminate always with a write command at the last memory location.

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

'Set dim value' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_SET_DIMVALUE (0x07)
DATABYTE2 = Channel 1…4
DATABYTE3 = Dim value (0 to 254, 255 = unchanged, exponential curve)
DATABYTE4 = Fade mode (0 = direct / 1 = use fade rate / 2 = use fade time
DATABYTE5 = don't care

'Set to last used dim value' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Address of the module
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_RESTORE_LAST_DIMVALUE (0x11)
DATABYTE2 = Channel 1…4
DATABYTE3 = don't care
DATABYTE4 = Fade mode (0 = direct / 1 = use fade rate / 2 = use fade time
DATABYTE5 = low byte of dim speed = don't care

'Start timer' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Address of the module
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_START_DIMMER_TIMER (0x08)
DATABYTE2 = Channel 1…4
DATABYTE3 = high byte of time-out time
DATABYTE4 = mid byte of time-out time
DATABYTE5 = low byte of time-out time

Remark: [DATABYTE3][DATABYTE4][DATABYTE5] contains a 24-bit time-out time in seconds.

If the time-out parameter contains zero then no timer starts.
If the time-out parameter contains 0xFFFFFF then the light switches permanently on (no time-out).

'Stop channel dimming' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_STOP_DIMMING (0x10)
DATABYTE2 = Channel 1…4

'Go to scene' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 data bytes received
DATABYTE1 = COMMAND_SET_DIMSCENE (0x1D)
DATABYTE2 = Channel 1…4
DATABYTE3 = Scene number (0 to 15)

'Set color value' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 7 data bytes received
DATABYTE1 = COMMAND_SET_COLOR (0x1E)
DATABYTE2 = Channel 1…4
DATABYTE3 = Dim value (0 to 254, 255 = unchanged)
DATABYTE4 = Red value 0…254, 255 = unchanged)
DATABYTE5 = Green value 0…254, 255 = unchanged)
DATABYTE6 = Blue value 0…254, 255 = unchanged)
DATABYTE7 = White value 0…254, 255 = unchanged)

'Forced off' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_FORCED_OFF (0x12)
DATABYTE2 = Channel 1…4
DATABYTE3 = high byte of delay time
DATABYTE4 = mid byte of delay time
DATABYTE5 = low byte of delay time

Remark:
Channel number = 0xFF for all channels
[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 0xFFFFFF then the dimmer is permanently forced off.

'Cancel forced off' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_CANCEL_FORCED_OFF (0x13)
DATABYTE2 = Channel 1…4

Remark:
Channel number = 0xFF for all channels

'Forced on' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_FORCED_ON (0x14)
DATABYTE2 = Channel 1…4
DATABYTE3 = high byte of delay time
DATABYTE4 = mid byte of delay time
DATABYTE5 = low byte of delay time

Remark:
Channel number = 0xFF for all channels
[DATABYTE3][DATABYTE4][DATABYTE5] contain a 24-bit time in seconds
The command will be skipped when the time parameter contains zero or the channels are already forced off.
When the time parameter contains 0xFFFFFF then the dimmer is permanently forced on.

'Cancel forced on' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_CANCEL_FORCED_ON (0x15)
DATABYTE2 = Channel 1…4

Remark:
Channel number = 0xFF for all channels

'Inhibit' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 5 data bytes received
DATABYTE1 = COMMAND_INHIBIT (0x16)
DATABYTE2 = Channel 1…4
DATABYTE3 = high byte of delay time
DATABYTE4 = mid byte of delay time
DATABYTE5 = low byte of delay time

Remark:
Channel number = 0xFF for all channels
[DATABYTE3][DATABYTE4][DATABYTE5] contain a 24-bit time in seconds
The command will be skipped when the time parameter contains zero or the channels are already forced off/on.
When the time parameter contains 0xFFFFFF then the dimmer is permanently inhibited.

'Cancel inhibit' command received:
SID10-SID9 = 00 (highest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 2 data bytes received
DATABYTE1 = COMMAND_CANCEL_INHIBIT (0x17)
DATABYTE2 = Channel 1…4

Remark:
Channel number = 0xFF for all channels

'Write device settings' command received:
SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 4, 5, 7 or 8 data bytes received
DATABYTE1 = COMMAND_SET_TEMP (0xE4)
DATABYTE2 = Channel 1…4
DATABYTE3 = setting index (0…28)

index	Configuration	DLC3…0 (# of data bytes)

0	Scene S0 level (+ RGBW for color control device)	4 (or 8 for color control device)
1	Scene S1 level (+ RGBW for color control device)	4 (or 8 for color control device)
2	Scene S2 level (+ RGBW for color control device)	4 (or 8 for color control device)
3	Scene S3 level (+ RGBW for color control device)	4 (or 8 for color control device)
4	Scene S4 level (+ RGBW for color control device)	4 (or 8 for color control device)
5	Scene S5 level (+ RGBW for color control device)	4 (or 8 for color control device)
6	Scene S6 level (+ RGBW for color control device)	4 (or 8 for color control device)
7	Scene S7 level (+ RGBW for color control device)	4 (or 8 for color control device)
8	Scene S8 level (+ RGBW for color control device)	4 (or 8 for color control device)
9	Scene S9 level (+ RGBW for color control device)	4 (or 8 for color control device)
10	Scene S10 level (+ RGBW for color control device)	4 (or 8 for color control device)
11	Scene S11 level (+ RGBW for color control device)	4 (or 8 for color control device)
12	Scene S12 level (+ RGBW for color control device)	4 (or 8 for color control device)
13	Scene S13 level (+ RGBW for color control device)	4 (or 8 for color control device)
14	Scene S14 level (+ RGBW for color control device)	4 (or 8 for color control device)
15	Scene S15 level (+ RGBW for color control device)	4 (or 8 for color control device)
16	Power-on level (+ RGBW for color control device)	4 (or 8 for color control device)
17	System failure level (+ RGBW for color control device)	4 (or 8 for color control device)
18	Minimum level	4
19	Maximum level	4
20	Fade time & fade rate	4
21	Group members G0…G15	5
22	Group Gx member A31…0 (only allowed for group addresses)	7
23	Group Gx member A63…32 (only allowed for group addresses)	7
24	Start addressing devices (only allowed for broadcast address)	4
25	-	4
26	-	4
27	Config Dali power supply (only allowed for broadcast address)	4
28	Config Substitute 'Go to Last Active Level' (only allowed for broadcast address)	4

DATABYTE4 = level (raw data 0…254, 255 = no change)

RAW	%	RAW	%	RAW	%	RAW	%	RAW	%	RAW	%	RAW	%
0	0	40	0.290	80	0.864	120	2.58	160	7.68	200	22.89	240	68.23
1	0.1	41	0.298	81	0.888	121	2.65	161	7.89	201	23.53	241	70.12
2	0.103	42	0.306	82	0.913	122	2.72	162	8.11	202	24.18	242	72.06
3	0.106	43	0.315	83	0.938	123	2.80	163	8.34	203	24.85	243	74.06
4	0.109	44	0.324	84	0.964	124	2.87	164	8.57	204	25.53	244	76.11
5	0.112	45	0.332	85	0.991	125	2.95	165	8.80	205	26.24	245	78.21
6	0.115	46	0.342	86	1.018	126	3.04	166	9.05	206	26.97	246	80.38
7	0.118	47	0.351	87	1.047	127	3.12	167	9.30	207	27.71	247	82.60
8	0.121	48	0.361	88	1.076	128	3.21	168	9.56	208	28.48	248	84.89
9	0.124	49	0.371	89	1.105	129	3.29	169	9.82	209	29.27	249	87.24
10	0.128	50	0.381	90	1.136	130	3.39	170	10.09	210	30.08	250	89.65
11	0.131	51	0.392	91	1.167	131	3.48	171	10.37	211	30.91	251	92.14
12	0.135	52	0.402	92	1.200	132	3.58	172	10.66	212	31.77	252	94.69
13	0.139	53	0.414	93	1.233	133	3.67	173	10.95	213	32.65	253	97.31
14	0.143	54	0.425	94	1.267	134	3.78	174	11.26	214	33.55	254	100
15	0.147	55	0.437	95	1.302	135	3.88	175	11.57	215	34.48	255	No change
16	0.151	56	0.449	96	1.338	136	3.99	176	11.89	216	35.43		
17	0.155	57	0.461	97	1.375	137	4.10	177	12.22	217	36.41		
18	0.159	58	0.474	98	1.413	138	4.21	178	12.55	218	37.42		
19	0.163	59	0.487	99	1.452	139	4.33	179	12.90	219	38.46		
20	0.168	60	0.501	100	1.492	140	4.45	180	13.26	220	39.52		
21	0.173	61	0.515	101	1.534	141	4.57	181	13.63	221	40.62		
22	0.177	62	0.529	102	1.576	142	4.70	182	14.00	222	41.74		
23	0.182	63	0.543	103	1.620	143	4.83	183	14.39	223	42.90		
24	0.187	64	0.559	104	1.665	144	4.96	184	14.79	224	44.08		
25	0.193	65	0.574	105	1.711	145	5.10	185	15.20	225	45.30		
26	0.198	66	0.590	106	1.758	146	5.24	186	15.62	226	46.56		
27	0.203	67	0.606	107	1.807	147	5.39	187	16.05	227	47.85		
28	0.209	68	0.623	108	1.857	148	5.53	188	16.50	228	49.17		
29	0.215	69	0.640	109	1.908	149	5.69	189	16.95	229	50.53		
30	0.221	70	0.658	110	1.961	150	5.85	190	17.42	230	51.93		
31	0.227	71	0.676	111	2.02	151	6.01	191	17.90	231	53.37		
32	0.233	72	0.695	112	2.07	152	6.17	192	18.40	232	54.84		
33	0.240	73	0.714	113	2.13	153	6.34	193	18.91	233	56.36		
34	0.246	74	0.734	114	2.19	154	6.52	194	19.43	234	57.92		
35	0.253	75	0.754	115	2.25	155	6.70	195	19.97	235	59.53		
	0.260		0.775		2.31		6.89		20.52		61.17		
	0.267		0.796		2.37		7.08		21.09		62.87		

	0.275		0.819		2.44		7.27		21.68		64.61		
	0.282		0.841		2.51		7.47		22.28		66.39		

DATABYTE5 = red value (0…254, 255 = no change)
DATABYTE6 = green value (0…254, 255 = no change)
DATABYTE7 = blue value (0…254, 255 = no change)
DATABYTE8 = white value (0…254, 255 = no change)
DATABYTE4 = fade time / rate

Fade raw data	Fade time / rate
H'0x'	No fade
H'1x'	Fade time 0.7 s
H'2x'	Fade time 1.0 s
H'3x'	Fade time 1.4 s
H'4x'	Fade time 2.0 s
H'5x'	Fade time 2.8 s
H'6x'	Fade time 4.0 s
H'7x'	Fade time 5.7 s
H'8x'	Fade time 8.0 s
H'9x'	Fade time 11.3 s
H'Ax'	Fade time 16.0 s
H'Bx'	Fade time 22.6 s
H'Cx'	Fade time 32.0 s
H'Dx'	Fade time 45.3 s
H'Ex'	Fade time 64.0 s
H'Fx'	Fade time 90.5 s
H'x0'	Fade rate not applicable
H'x1'	Fade rate 358.0 steps/s
H'x2'	Fade rate 253.0 steps/s
H'x3'	Fade rate 179.0 steps/s
H'x4'	Fade rate 127.0 steps/s
H'x5'	Fade rate 89.4 steps/s
H'x6'	Fade rate 63.3 steps/s
H'x7'	Fade rate 44.7 steps/s
H'x8'	Fade rate 31.6 steps/s
H'x9'	Fade rate 22.4 steps/s
H'xA'	Fade rate 15.8 steps/s
H'xB'	Fade rate 11.2 steps/s
H'xC'	Fade rate 7.9 steps/s
H'xD'	Fade rate 5.6 steps/s
H'xE'	Fade rate 4.0 steps/s
H'xF'	Fade rate 2.8 steps/s

'Device settings request' command received:

SID10-SID9 = 11 (lowest priority)
SID8...SID1 = Module address
RTR = 0
DLC3...DLC0 = 3 data bytes received for all settings request
         4 data bytes received for individual setting request
DATABYTE1 = COMMAND_TEMP_SENSOR_SETTINGS_REQUEST (0xE7)
DATABYTE2 = Channel 1…4 (255 for all channels)
DATABYTE3 = access settings from the devices (don't care)
DATABYTE4 = individual setting request index (0…26)

index	Configuration
0	Scene S0 level (+ RGBW for color control device)
1	Scene S1 level (+ RGBW for color control device)
2	Scene S2 level (+ RGBW for color control device)
3	Scene S3 level (+ RGBW for color control device)
4	Scene S4 level (+ RGBW for color control device)
5	Scene S5 level (+ RGBW for color control device)
6	Scene S6 level (+ RGBW for color control device)
7	Scene S7 level (+ RGBW for color control device)
8	Scene S8 level (+ RGBW for color control device)
9	Scene S9 level (+ RGBW for color control device)
10	Scene S10 level (+ RGBW for color control device)

11	Scene S11 level (+ RGBW for color control device)
12	Scene S12 level (+ RGBW for color control device)
13	Scene S13 level (+ RGBW for color control device)
14	Scene S14 level (+ RGBW for color control device)
15	Scene S15 level (+ RGBW for color control device)
16	*Power-on level (+ RGBW for color control device)*
17	*System failure level (+ RGBW for color control device)*
18	Minimum level
19	Maximum level
20	Fade time & fade rate
21	*Group members G0…G15*
22	-
23	-
24	-
25	Device type
26	Actual level (+ RGBW for color control device)

'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 (0xB2)
    DATABYTE2 = Channel 1…4

    Remark: channel number = 0xFF for all channels

'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 (0xB1)
    DATABYTE2 = Channel 1…4
    DATABYTE3 = high byte of delay time
    DATABYTE4 = mid byte of delay time
    DATABYTE5 = low byte of delay time

    Remark:
    Channel number = 0xFF for all channels
    [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 0xFFFFFF 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 (0xB3)
    DATABYTE2 = Program mode

Contents	Selected program
0	None
1	Program group 1 (Summer)
2	Program group 2 (Winter)
3	Program group 3 (Holiday)

'Read program step' command received:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 5 data bytes received
    DATABYTE1 = COMMAND_READ_PROGRAM_STEP (0xC0)
    DATABYTE2 = Start program step number (1…116)
    DATABYTE3 = Program group number (1…3)
    DATABYTE2 = Channel 1…4
    DATABYTE5 = Search direction (1 = search for next matched step / 0 = search for previous matched program step)

'Write program step' command received:

    SID10-SID9 = 11 (lowest priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 8 data bytes received
    DATABYTE1 = COMMAND_WRITE_PROGRAM_STEP (0xC2)
    DATABYTE2 = Program step number (1…116)
    DATABYTE3 = Program reference

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

    DATABYTE4 = Program step month & four least significant bits of day

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

Contents byte6	Contents byte4	Description
00xxxxxx	0000xxxx	Never
00xxxxxx	0001xxxx	Day 1of the month
00xxxxxx	0010xxxx	Day 2of the month
…	...	…
01xxxxxx	1111xxxx	Day 31of the month
10xxxxxx	0000xxxx	Never

Contents	Contents	Description
10xxxxxx	0001xxxx	Every Monday
10xxxxxx	0010xxxx	Every Tuesday
...	…	…
10xxxxxx	0111xxxx	Every Sunday
10xxxxxx	1000xxxx	Every weekend (sa & su)
10xxxxxx	1001xxxx	Every working day (mo…fr)
10xxxxxx	1010xxxx	Every day except Sunday
10xxxxxx	1011xxxx	Every day
10xxxxxx	1100xxxx	Never
…	…	…
11xxxxxx	1111xxxx	Never

DATABYTE5 = Program step hour & group number

Contents	Description
xxx00000	0h
xxx00001	1h
…	…
xxx10111	23h
xx1xxxxx	Program group 1 (Summer program)
x1xxxxxx	Program group 2 (Winter program)
1xxxxxxx	Program group 3 (Holiday program)

DATABYTE6 = Program step minute & msb of day & every flag

Contents	Description
xx000000	0min
xx000001	1min
…	…
xx111011	59min

Contents_byte6	Contents byte4	Description
00xxxxxx	0000xxxx	Never
00xxxxxx	0001xxxx	Day 1of the month
00xxxxxx	0010xxxx	Day 2of the month
…	...	…
01xxxxxx	1111xxxx	Day 31of the month
10xxxxxx	0000xxxx	Never
10xxxxxx	0001xxxx	Every Monday
10xxxxxx	0010xxxx	Every Tuesday
...	…	…
10xxxxxx	0111xxxx	Every Sunday
10xxxxxx	1000xxxx	Every weekend (sa & su)
10xxxxxx	1001xxxx	Every working day (mo…fr)
10xxxxxx	1010xxxx	Every day except Sunday
10xxxxxx	1011xxxx	Every day
10xxxxxx	1100xxxx	Never
…	…	…
11xxxxxx	1111xxxx	Never

DATABYTE7 = Program step action

Contents	Action

DATABYTE8 = Channel

Contents	Channel
1	Channel 1
...	…
4	Channel 4

Remark:
Erase program step if channel parameter is equal with zero.

'Change master address and serial number' command received:

    SID10-SID9 = 01 (firmware priority)
    SID8...SID1 = Module address
    RTR = 0
    DLC3...DLC0 = 7 data bytes received
    DATABYTE1 = COMMAND_WRITE_ADDR_SERIALNR (0x6A)
    DATABYTE2 = Module type (0x06 = VMB4LEDPWM-20)
    DATABYTE3 = Current serial nr high byte
    DATABYTE4 = Current serial nr low byte
    DATABYTE5 = New module address
    DATABYTE6 = New serial nr high byte
    DATABYTE7 = New serial nr low byte

Memory map version 1:

Address	Contents	Address	Contents
0x0000	Channel 1 name character 1	0x0001	Channel 1 name character 2
...	...	...	...
0x000E	Channel 1 name character 15	0x000F	Channel 1 name character 16
...	...	...	...
0x0030	Channel 4 name character 1	0x0031	Channel 4 name character 2
...	...	...	...
0x003F	Channel 4 name character 15	0x003F	Channel 4 name character 16
0x0040	Not used	0x0041	Not used
0x0042	Not used	0x0043	Alarm clock configuration
0x0044	Wake up 1 hour (0…23)	0x0045	Wake up 1 minutes (0…59)
0x0046	Go to bed 1 hour (0…23)	0x0047	Go to bed 1 minutes (0…59)
0x0048	Wake up 2 hour (0…23)	0x0049	Wake up 2 minutes (0…59)
0x004A	Go to bed 2 hour (0…23)	0x004B	Go to bed 2 minutes (0…59)
0x004C	Sunrise hour at 21 December (0…23)	0x004D	Sunrise minutes at 21 December (0…59)
0x004E	Sunrise 21 January – sunrise 5 January (-128'…127')	0x004F	Sunrise 5 February – sunrise 21 January (-128'…127')
0x0050	Sunrise 21 February – sunrise 5 February (-128'…127')	0x0051	Sunrise 5 March – sunrise 21 February (-128'…127')
0x0052	Sunrise 21 March – sunrise 5 March (-128'…127')	0x0053	Sunrise 5 April – sunrise 21 March (-128'…127')
0x0054	Sunrise 21 April – sunrise 5 April (-128'…127')	0x0055	Sunrise 5 May – sunrise 21 April (-128'…127')
0x0056	Sunrise 21 May – sunrise 5 May (-128'…127')	0x0057	Sunrise 5 June – sunrise 21 May (-128'…127')
0x0058	Sunrise 21 June – sunrise 5 June (-128'…127')	0x0059	Sunrise 5 July – sunrise 21 June (-128'…127')
0x005A	Sunrise 21 July – sunrise 5 July (-128'…127')	0x005B	Sunrise 5 August – sunrise 21 July (-128'…127')
0x005C	Sunrise 21 August – sunrise 5 August (-128'…127')	0x005D	Sunrise 5 September – sunrise 21 August (-128'…127')
0x005E	Sunrise 21 September – sunrise 5 September (-128...127')	0x005F	Sunrise 5 October – sunrise 21 Sept. (-128'…127')
0x0060	Sunrise 21 October – sunrise 5 October (-128'…127')	0x0061	Sunrise 5 November – sunrise 21 Oct. (-128'…127')
0x0062	Sunrise 21 November – sunrise 5 November (-128'…127')	0x0063	Sunrise 5 December – sunrise 21 Nov. (-128'…127')
0x0064	Sunrise 21 December – sunrise 5 December (-128'…127')	0x0065	Sunrise 5 January – sunrise 21 December (-128'…127')
0x0066	Not used	0x0067	Not used
0x0068	Sunset hour at 21 December (0…23)	0x0069	Sunset minutes at 21 December (0…59)
0x006A	Sunset 21 January – sunset 5 January (-128'…127')	0x006B	Sunset 5 February – sunset 21 January (-128'…127')
0x006C	Sunset 21 February – sunset 5 February (-128'…127')	0x006D	Sunset 5 March – sunset 21 February (-128'…127')
0x006E	Sunset 21 March – sunset 5 March (-128'…127')	0x006F	Sunset 5 April – sunset 21 March (-128'…127')
0x0070	Sunset 21 April – sunset 5 April (-128'…127')	0x0071	Sunset 5 May – sunset 21 April (-128'…127')
0x0072	Sunset 21 May – sunset 5 May (-128'…127')	0x0073	Sunset 5 June – sunset 21 May (-128'…127')
0x0074	Sunset 21 June – sunset 5 June (-128'…127')	0x0075	Sunset 5 July – sunset 21 June (-128'…127')
0x0076	Sunset 21 July – sunset 5 July (-128'…127')	0x0077	Sunset 5 August – sunset 21 July (-128'…127')
0x0078	Sunset 21 August – sunset 5 August (-128'…127')	0x0079	Sunset 5 September – sunset 21 August (-128'…127')
0x007A	Sunset 21 September – sunset 5 September (-128'…127')	0x007B	Sunset 5 October – sunset 21 September (-128'…127')
0x007C	Sunset 21 October – sunset 5 October (-128'…127')	0x007D	Sunset 5 November - sunset 21 October (-128'…127')
0x007E	Sunset 21 November – sunset 5 November (-128'…127')	0x007F	Sunset 5 December - sunset 21 Nov. (-128'…127')
0x0080	Sunset 21 December – sunset 5 December (-128'…127')	0x0081	Sunset 5 January – sunset 21 December (-128'…127')
0x0082	Not used	0x0083	Not used
0x0084	Not used	0x0085	Not used
…	…	…	…
0x008A	Not used	0x008B	Not used

Remark:
Unused locations contain H'FF'

Alarm clock configuration

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

Address	Contents	Address	Contents
0x008C	Links in use byte 0 (LSB)	0x008D	Links in use high byte1
0x008E	Links in use low byte 2	0x008F	Links in use low byte 3 (MSB)
0x0090	Linked Push button 1 module address	0x0091	Linked Push button 1 bit number
0x0092	Linked Push button 1 action	0x0093	Linked Push button 1 parameter 1
0x0094	Linked Push button 1 parameter 2	.0x0095	Linked Push button 1 parameter 3
...	...	...	...
0x035A	Linked Push button 120 address	0x035B	Linked Push button 120 bit number
0x035C	Linked Push button 120 action	0x035D	Linked Push button 120 parameter 1
0x035E	Linked Push button 120 parameter 2	0x035F	Linked Push button 120 parameter 3

Remark: Unused locations contain 0xFF

Action

Action Byte	Action
B'0xxxxxxx'	Execute action at button pressed or during closed switch
B'1xxxxxxx'	Execute action at button released or during open switch*
B'x0000000'	Action number 0
…	…
B'x1111111'	Action number 127

Action nr	Action	Parameter 1	Parameter 2	Parameter 3
0	No action	-		
1	Forced Off (lock) channel at closed/open switch	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
2	Forced Off (lock) channel	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
3	Toggle Forced Off (lock/unlock) channel	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
4	Cancel Forced Off (unlock) channel	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
5	Forced On channel at closed/open switch	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
6	Forced On channel	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
7	Toggle Forced On channel	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
8	Cancel Forced On channel	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
9	Inhibit channel at closed/open switch	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
10	Inhibit channel	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
11	Toggle Inhibit channel	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
12	Cancel Inhibit channel	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
13	Disable channel program at closed/open switch	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
14	Disable channel program channel	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
15	Disable/enable channel program	Time-out	-	Bit7-3: unused Bit2…0: Channel (1…4)
16	Enable channel program	-	-	Bit7-3: unused Bit2…0: Channel (1…4)
17	Select no programs			
18	Select program group 1			
19	Toggle program group 1			
20	Select program group 2			
21	Toggle program group 2			
22	Select program group 3			
23	Toggle program group 3			
24	Enable Alarm 1 at closed/open switch			
25	Disable Alarm 1 at closed/open switch			
26	Enable Alarm 1	-		
27	Enable/Disable Alarm 1			
28	Disable Alarm 1			
29	Enable Alarm 2 at closed/open switch			
30	Disable Alarm 2 at closed/open switch			
31	Enable Alarm 2			
32	Enable/Disable Alarm 2			
33	Disable Alarm 2			

34	Enable Sunrise at closed/open switch	-	-	-
35	Disable Sunrise at closed/open switch	-	-	-
36	Enable Sunrise	-	-	-
37	Enable/Disable Sunrise	-	-	-
38	Disable Sunrise	-	-	-
39	Enable Sunset at closed/open switch	-	-	-
40	Disable Sunset at closed/open switch	-	-	-
41	Enable Sunset	-	-	-
42	Enable/Disable Sunset	-	-	-
43	Disable Sunset	-	-	-
44	Off	-	-	Bit7-5: unused Bit4-3: Fade mode at press 0=direct/1=use fade rate/2=use fade time Bit2…0: Channel (1…4)
45	On	-	-	Bit7-5: unused Bit4-3: Fade mode at press 0=direct/1=use fade rate/2=use fade time Bit2…0: Channel (1…4)
46	Toggle	-	-	Bit7-5: unused Bit4-3: Fade mode at press 0=direct / 1=use fade rate / 2=use fade time Bit2…0: Channel (1…4)
47	Delayed-on at closed/open switch (momentary value)	Delay-on time	Target	Bit7-5: unused Bit4-3: Fade mode 0=direct / 1=use fade rate / 2=use fade time Bit2…0: Channel (1…4)
48	Restartable delayed-on	Delay-on time	Target	Bit7-5: unused Bit4-3: Fade mode at press 0=direct / 1=use fade rate / 2=use fade time Bit2…0: Channel (1…4)
49	Non-restartable delayed-on	Delay-on time	Target	Bit7-5: unused Bit4-3: Fade mode at press 0=direct / 1=use fade rate / 2=use fade time Bit2…0: Channel (1…4)
50	Start-stop delayed-on	Delay-on time	Target	Bit7-5: unused Bit4-3: Fade mode at press 0=direct / 1=use fade rate / 2=use fade time Bit2…0: Channel (1…4)
51	Restartable delayed-off	Delay-off time	-	Bit7: unused Bit6-5: Fade out mode at time-out 0=direct/1=use fade rate/2=use fade time Bit4-3: unused Bit2…0: Channel (1…4)
52	Non-restartable delayed-off	Delay-off time	-	Bit7: unused Bit6-5: Fade out mode at time-out 0=direct/1=use fade rate/2=use fade time Bit4-3: unused Bit2…0: Channel (1…4)
53	Start-stop delayed-off	Delay-off time	-	Bit7: unused Bit6-5: Fade out mode at time-out 0=direct/1=use fade rate/2=use fade time Bit4-3: unused Bit2…0: Channel (1…4)

54	Restartable timer	Time-out	Target	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct/1=use fade rate/2=use fade time
				Bit4-3: Fade mode at press
				    0=direct/1=use fade rate/2=use fade time
				Bit2…0: Channel (1…4)

55	Non-restartable timer	Time-out	Target	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct/1=use fade rate/2=use fade time
				Bit4-3: Fade mode at press
				    0=direct/1=use fade rate/2=use fade time
				Bit2…0: Channel (1…4)

56	Start-stop timer	Time-out	Target	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct/1=use fade rate/2=use fade time
				Bit2…0: Channel (1…4)

57	Dim up[*]	Time-out	-	Bit7: unused Bit6-5: Fade out mode at time-out 0=direct/1=use fade rate/2=use fade time Bit4-3: unused Bit2…0: Channel (1…4)
58	Dim up/on at short press[*]	Time-out	Target	Bit7: unused Bit6-5: Fade out mode at time-out 0=direct/1=use fade rate/2=use fade time Bit4-3: Fade mode at short press

				0=direct/1=use fade rate/2=use fade time Bit2…0: Channel (1…4)
59	Dim down*	Time-out	-	Bit7: unused Bit6-5: Fade out mode at time-out 0=direct/1=use fade rate/2=use fade time Bit4-3: unused Bit2…0: Channel (1…4)

60	Dim down/off at short press*	Time-out	-	Bit7: dim down to minimum level
				    0=dim to 0% / 1=dim to minimum level
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at short press
				    0=direct/1=use fade rate/2=use fade time
				Bit2…0: Channel (1…4)

61	Dim up-down*	Time-out	-	Bit7: unused Bit6-5: Fade out mode at time-out 0=direct/1=use fade rate/2=use fade time Bit4-3: unused Bit2…0: Channel (1…4)

62	Dim up-down/toggle at short press*	Time-out	Target	Bit7: dim down to minimum level
				    0=dim to 0% / 1=dim to minimum level
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at short press
				    0=direct/1=use fade rate/2=use fade time
				Bit2…0: Channel (1…4)

63	Go to scene 0	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

64	Go to scene 1	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

65	Go to scene 2	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

66	Go to scene 3	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

67	Go to scene 4	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

68	Go to scene 5	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

69	Go to scene 6	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

70	Go to scene 7	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

71	Go to scene 8	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

72	Go to scene 9	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

73	Go to scene 10	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

74	Go to scene 11	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

75	Go to scene 12	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

76	Go to scene 13	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

77	Go to scene 14	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

78	Go to scene 15	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

79	Toggle scene 0	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

80	Toggle scene 1	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

81	Toggle scene 2	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

82	Toggle scene 3	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

83	Toggle scene 4	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

84	Toggle scene 5	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				    0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				    0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

85	Toggle scene 6	Time-out	-	Bit7: unused Bit6-5: Fade out mode at time-out

				0=direct / 1=use fade rate / 2=use fade time Bit4-3: Fade mode (at go to scene) 0=direct / 1=use fade rate / 2=use fade time Bit2…0: Channel (1…4)

86	Toggle scene 7	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode (at time-out)
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

87	Toggle scene 8	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

88	Toggle scene 9	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

89	Toggle scene 10	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

90	Toggle scene 11	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

91	Toggle scene 12	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

92	Toggle scene 13	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

93	Toggle scene 14	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

94	Toggle scene 15	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

95	Multi step dimmer	Time-out	-	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press (next step/scene)
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

96	Go to dim value	Time-out	Target	Bit7: unused
				Bit6-5: Fade out mode at time-out
				  0=direct / 1=use fade rate / 2=use fade time
				Bit4-3: Fade mode at press
				  0=direct / 1=use fade rate / 2=use fade time
				Bit2…0: Channel (1…4)

[*] Execute action at button released or during open switch not applicable

Parameter 1: delay & time-out

Parameter 1	Delay/time-out
0	0s (no timer)
1	1s
2	2s
3	3s

	...	
	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

Parameter 2: Target ((exponential curve)

Parameter 2	Dim value
0	Last actual 0%
1	% see table below
…	…
253	% see table below
254	Maximum level
255	Unchanged

RAW	%	RAW	%	RAW	%	RAW	%	RAW	%	RAW	%	RAW	%
0	Last actual	40	0.290	80	0.864	120	2.58	160	7.68	200	22.89	240	68.23
1	0.1	41	0.298	81	0.888	121	2.65	161	7.89	201	23.53	241	70.12
2	0.103	42	0.306	82	0.913	122	2.72	162	8.11	202	24.18	242	72.06
3	0.106	43	0.315	83	0.938	123	2.80	163	8.34	203	24.85	243	74.06
4	0.109	44	0.324	84	0.964	124	2.87	164	8.57	204	25.53	244	76.11
5	0.112	45	0.332	85	0.991	125	2.95	165	8.80	205	26.24	245	78.21
6	0.115	46	0.342	86	1.018	126	3.04	166	9.05	206	26.97	246	80.38
7	0.118	47	0.351	87	1.047	127	3.12	167	9.30	207	27.71	247	82.60
8	0.121	48	0.361	88	1.076	128	3.21	168	9.56	208	28.48	248	84.89
9	0.124	49	0.371	89	1.105	129	3.29	169	9.82	209	29.27	249	87.24
10	0.128	50	0.381	90	1.136	130	3.39	170	10.09	210	30.08	250	89.65
11	0.131	51	0.392	91	1.167	131	3.48	171	10.37	211	30.91	251	92.14
12	0.135	52	0.402	92	1.200	132	3.58	172	10.66	212	31.77	252	94.69
13	0.139	53	0.414	93	1.233	133	3.67	173	10.95	213	32.65	253	97.31
14	0.143	54	0.425	94	1.267	134	3.78	174	11.26	214	33.55	254	Max (100)
15	0.147	55	0.437	95	1.302	135	3.88	175	11.57	215	34.48	255	No change
16	0.151	56	0.449	96	1.338	136	3.99	176	11.89	216	35.43		
17	0.155	57	0.461	97	1.375	137	4.10	177	12.22	217	36.41		
18	0.159	58	0.474	98	1.413	138	4.21	178	12.55	218	37.42		
19	0.163	59	0.487	99	1.452	139	4.33	179	12.90	219	38.46		
20	0.168	60	0.501	100	1.492	140	4.45	180	13.26	220	39.52		
21	0.173	61	0.515	101	1.534	141	4.57	181	13.63	221	40.62		
22	0.177	62	0.529	102	1.576	142	4.70	182	14.00	222	41.74		
23	0.182	63	0.543	103	1.620	143	4.83	183	14.39	223	42.90		
24	0.187	64	0.559	104	1.665	144	4.96	184	14.79	224	44.08		
25	0.193	65	0.574	105	1.711	145	5.10	185	15.20	225	45.30		
26	0.198	66	0.590	106	1.758	146	5.24	186	15.62	226	46.56		
27	0.203	67	0.606	107	1.807	147	5.39	187	16.05	227	47.85		
28	0.209	68	0.623	108	1.857	148	5.53	188	16.50	228	49.17		
29	0.215	69	0.640	109	1.908	149	5.69	189	16.95	229	50.53		

30	0.221	70	0.658	110	1.961	150	5.85	190	17.42	230	51.93		
31	0.227	71	0.676	111	2.02	151	6.01	191	17.90	231	53.37		
32	0.233	72	0.695	112	2.07	152	6.17	192	18.40	232	54.84		
33	0.240	73	0.714	113	2.13	153	6.34	193	18.91	233	56.36		
34	0.246	74	0.734	114	2.19	154	6.52	194	19.43	234	57.92		
35	0.253	75	0.754	115	2.25	155	6.70	195	19.97	235	59.53		
36	0.260	76	0.775	116	2.31	156	6.89	196	20.52	236	61.17		
37	0.267	77	0.796	117	2.37	157	7.08	197	21.09	237	62.87		
38	0.275	78	0.819	118	2.44	158	7.27	198	21.68	238	64.61		
39	0.282	79	0.841	119	2.51	159	7.47	199	22.28	239	66.39		

Parameter 3: Channel (0-index based)

Parameter 3	Channel
0	1
1	2
2	3
3	4

Parameter 3: Fade mode

Parameter 3	Fade mode
0	Direct
1	Use fade rate
2	Use fade time

Address	Contents	Address	Contents
0x0360	Program steps used byte 0 (LSB)	0x0361	Program steps used byte 1
0x0362	Program steps used byte 2	0x0363	Program steps used byte 3 (MSB)
0x0364	Program step 1 byte1	0x0365	Program step 1 byte2
0x0366	Program step 1 byte3	0x0367	Program step 1 byte4
0x0368	Program step 1 byte5	0x0369	Program step 1 byte6
…	..	..	..
0x0622	Program step 118 byte1	0x0623	Program step 118 byte2
0x0624	Program step 118 byte3	0x0625	Program step 118 byte4
0x0626	Program step 118 byte5	0x0627	Program step 118 byte6

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'	Program group 1 (Summer program)
B'x1xxxxxx'	Program group 2 (Winter program)
B'1xxxxxxx'	Program group 3 (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	Not yet implemented

Contents program byte6	Channel
0	Program step = empty
1	Channel 1
...	…
4	Channel 4
255	Program step = empty

Address	Contents	Address	Contents
0x0628	Location id low byte	0x0629	Location id high byte
0x062A	Group id low byte	0x062B	Group id high byte
0x062C	Module name character 1	0x062D	Module name character 2
…	..	..	..
0x066A	Module name character 63	0x066B	Module name character 64

Address	Contents	Address	Contents
0x066C	Device type of channel 1	0x067D	Minimum level of channel A0
0x066E	Maximum level of channel 1	0x067F	Fade time & fade rate of channel A0
0x0670	Scene 0 intensity of channel 1	0x0681	Scene 0 red of channel 1
0x0672	Scene 0 green of channel 1	0x0683	Scene 0 blue of channel 1
0x0674	Scene 0 white of channel 1	…	…
…	…	…	…
…	…	0x06BB	Scene 15 intensity of channel1
0x06BC	Scene 15 red of channel 1	0x06BD	Scene 15 green of channel 1
0x06BE	Scene 15 blue of channel 1	0x06BF	Scene 15 white of channel 1
0x06C0	*Power-on intensity of channel 1*	*0x06C1*	*Power-on red of channel 1*
0x06C2	*Power-on green of channel 1*	*0x06C3*	*Power-on blue of channel 1*
0x06C4	*Power-on white of channel 1*	*0x06C5*	*System failure intensity of channel 1*
0x06C6	*System failure red of channel 1*	*0x06C7*	*System failure green of channel 1*
0x06C8	*System failure blue of channel 1*	*0x06C9*	*System failure white of channel 1*
0x06CA	*Group G0...G7 member of channel 1*	*0x06CB*	*Group G8...G15 member of channel 1*
0x06CC	*Reserved*	*0x06CD*	*Reserved*
0x06CE	*Reserved*	*0x06CF*	*Reserved*
…	...	…	…
…	...	…	…
…	...	…	…
0x0798	Device type of channel 4	0x0799	Minimum level of channel 4
0x079A	Maximum level of channel 4	0x079B	Fade time & fade rate of channel 4
0x079C	Scene 0 intensity of channel 4	0x079D	Scene 0 red of channel 4
0x079E	Scene 0 green of channel 4	0x079F	Scene 0 blue of channel A4
0x07A0	Scene 0 white of channel 4	…	…
…	…	…	…
…	…	0x07E7	Scene 15 intensity of channel 4
0x07E8	Scene 15 red of channel 4	0x07E9	Scene 15 green of channel 4
0x07EA	Scene 15 blue of channel 4	0x07EB	Scene 15 white of channel 4
0x07EC	*Power-on intensity of channel 4*	*0x07ED*	*Power-on red of channel 4*
0x07EE	*Power-on green of channel 4*	*0x07EF*	*Power-on blue of channel 4*
0x07F0	*Power-on white of channel 4*	*0x07F1*	*System failure intensity of channel 4*
0x07F2	*System failure red of channel 4*	*0x07F3*	*System failure green of channel 4*
0x07F4	*System failure blue of channel 4*	*0x07F5*	*System failure white of channel 4*
0x07F6	*Group G0...G7 member of channel 4*	*0x07F7*	*Group G8...G15 member of channel 4*
0x07F8	*Reserved*	*0x07F9*	*Reserved*
0x07FA	*Reserved*	*0x07FC*	*Reserved*
0x07FC	Not used	0x07FD	Not used
0x07FE	Not used	0x07FF	Used for flash writing

Remark:
Unused locations contain H'FF'

Device type

Contents	Type
0x00	*Fluorescent lamps*
0x01	*Emergency lamps*
0x02	*Discharge lamps*
0x03	*Low voltage lamps*
0x04	*Dimmer for incandescent lamps*

0x05	*Conversion to dc voltage (1 ...10 V)*
0x06	Led module
0x07	*Switching device (relay)*
0x08	*Color controls (RGBW)*
0x09	*Sequencer*
0xFE	*Device present but type unknown*
0xFF	Device not present (default)