

Communication within Eltako wireless building

All Eltako wireless sensors and Eltako wireless actuators communicate within the Eltako wireless network by means of wireless telegrams that are formatted using the world-wide standard of EnOcean Alliance. These are the EEPs as described below; some of them are partly modified to a certain extent. The reply telegrams from the bidirectional actuators to confirm the switch position correspond to those of the PTM200 wireless modules but without the telegram sent when the button is released.

Sensor telegrams

FABH63+FBH55+FBH63+FBH63 (EEP: similar to 07-08-01)	
(EEP: similar to 07-08-01, expanded brightness range, no Occupancy Button in DBO_Bit0)	
ORG =	0x07
Data_byte3 =	-
Data_byte2 =	brightness 0 – 2048 lux, linear n = 0x00 – 0xFF
Data_byte1 =	-
Data_byte0 =	DBO_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) DBO_Bit1 = motion (0 = motion, 1 = no motion) for data telegram: 0x0D (motion), 0x0F (no motion) for teach-in telegram: 0x85
Teach-in telegram BD3..DBO: 0x20, 0x08, 0x0D, 0x85	
FAFT60+FIFT63AP (EEP: 07-04-02 plus Data_byte3)	
ORG =	0x07
Data_byte3 =	charge state of energy accumulator (e.g 2.5V = 0x59 ... 4V = 0x9B)
Data_byte2 =	rel. humidity 0 .. 100%, linear 0x00 – 0xFA, i.e. (0..250 dez.)
Data_byte1 =	Actual temperature -20°C .. +60°C, linear 0x00 - 0xFA, i.e. (0..250 dez.)
Data_byte0 =	DBO_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) for data telegram: 0x0F, for teach-in telegram: 0x87
Teach-in telegram BD3..DBO: 0x10, 0x10, 0x0D, 0x87	
FAH60+FAH63+FIH63 (EEP: 07-06-01 plus Data_byte3)	
ORG =	0x07
Data_byte3 =	brightness 0 – 100 lux, linear n = 0x00 – 0xFF (only valid if DB2 = 0x00)
Data_byte2 =	brightness 300 – 30.000 lux, linear n = 0x00 – 0xFF
Data_byte1 =	-
Data_byte0 =	DBO_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) for data telegram: 0x0F, for teach-in telegram: 0x87
Teach-in telegram BD3..DBO: 0x18, 0x08, 0x0D, 0x87	
FASM60+FSM12+FSM61+FSU12D+FSU55D	
ORG =	0x05
Data_byte3 =	0x70/0x50
FKC+FKF	
ORG =	0x05
Data_byte3 =	0x10/0x00

FSS12 (EEP: 07-12-01)	
ORG =	0x07
Data_byte3 to Data_byte1 form a 24-bit binary coded number	
Data_byte3 =	Data Byte 3 (MSB) 0...16777215
Data_byte2 =	Data Byte 2 0...16777215
Data_byte1 =	Data Byte 1 (LSB) 0...16777215
Data_byte0 =	DBO_Bit4 = tariff switchover (0 = normal rate, 1 = off-peak rate) DBO_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) DBO_Bit2 = switchover data content: 1 = momentary power in watts, 0 = meter status in 0.1 KW/h DBO_Bit1 = 0 (fix) DBO_Bit0 = 1 (fix) Possible values in data telegram: DBO = 0x09 -> meter status normal rate in 0,1 KW/h DBO = 0x19 -> meter status off-peak rate in 0,1KW/h DBO = 0x0C -> momentary power in W, normal rate active DBO = 0x1C -> momentary power in W, off-peak rate active
Teach-in telegram BD3..DBO: 0x48, 0x08, 0x0D, 0x80 (is sent once at every power-up)	
FT4+FT4F+FT55 with rocker	
ORG =	0x05
Data_byte3 =	0x70/0x50
FT4+FT4F+FT55 with double rocker	
ORG =	0x05
Data_byte3 =	0x70/0x50/0x30/0x10
FTF55 (EEP: 07-02-05)	
ORG =	0x07
Data_byte3 =	-
Data_byte2 =	-
Data_byte1 =	actual temperature 0 – 40°C, linear 0xFF - 0x00
Data_byte0 =	DBO_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) for data telegram: 0x0F, for teach-in telegram: 0x87
Teach-in telegram BD3..DBO: 0x08, 0x28, 0x0D, 0x87	
FTK (EEP: 06-00-01)	
ORG =	0x06
Data_byte3 =	contact closed -> 0x09 contact open -> 0x08 teach-in button pressed -> 0x00
Data_byte2 =	-
Data_byte1 =	-
Data_byte0 =	-
Teach-in telegram BD3..DBO: 0x00, 0x00, 0x00, 0x00	

Sensor telegrams

FTR55D+FTR55H (EEP: 07-10-03 plus Data_byte3)

ORG = 0x07
 Data_byte3 = night reduction 0-5°K in 1° steps
 0x00 = 0°K, 0x06 = 1°K,
 0x0C = 2°K, 0x13 = 3°K, 0x19 = 4°K, 0x1F = 5°K
 Data_byte2 = reference temperature 0 – 40°C, linear 0x00 - 0xFF
 adjustable range: 8°C – 40°C
 Data_byte1 = actual temperature 0 – 40°C, linear 0xFF - 0x00
 Data_byte0 = DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)
 for data telegram: 0x0F, for teach-in telegram: 0x87

Teach-in telegram BD3..DBO: 0x40, 0x30, 0x0D, 0x87

FTS12EM (only telegrams for the Eltako-RS485-Bus)

The pushbutton input module generates FT4 telegrams within the RS485 Bus. The basis ID's 1, 11, 21, 31, 41, 51, 61, 71, 81 and 91 are used depending on the preset ID range.

ORG = 0x05
 Data_byte3 = control of +A1 -> 0x70 (basis-ID+0)
 control of +A3 -> 0x50 (basis-ID+1)
 control of +A4 -> 0x70 (basis-ID+2)
New from week 30/2011 -> 0x30
 control of +A5 -> 0x50 (basis-ID+3)
New from week 30/2011 -> 0x10
 control of +A6 -> 0x70 (basis-ID+4)
 control of +E1 -> 0x70 (basis-ID+5)
 control of +E3 -> 0x50 (basis-ID+6)
 control of +E4 -> 0x70 (basis-ID+7)
New from week 30/2011 -> 0x30
 Ansteuerung von +E5 -> 0x50 (basis-ID+8)
New from week 30/2011 -> 0x10
 Ansteuerung von +E6 -> 0x50 (basis-ID+9)

If the control of a control input will be finished, a telegram with the respective ID and **Data_byte3 = 0x00** will be created.

Data_byte2 = not used (0x00)
 Data_byte1 = not used (0x00)
 Data_byte0 = not used (0x00)

FWS61

The FWS61 has two telegrams to one data set, which are sent successively. In the telegrams last Byte (UU oder YY) it can be identified, which telegram part is involved.

Telegram part 1: 0xRRSSTUU

- RR is the twilight sensor which supplies data from 0-1000 Lux (0-255)
 e.g.: 0x7A = 122; $122 * 1000 / 255 = 478$ lux
- SS is the temperature which lies between -40°C (corresponding 0) and +80°C (255)
 e.g.: 0x2C = 44; $44 * 120 / 255 = 20,7$ à lower 40 after that 40-20,7 = -19,3°C
 e.g.: 0x6F = 111; $111 * 120 / 255 = 52,2$ à not lower then 40 after that 52,2-40 = 12,2°C
- TT is the wind speed which lies between 0m/s (corresponding 0) and 70m/s (255)
 e.g.: 0x55 = 85; $85 * 70 / 255 = 23$ m/s
- UU is either 0x1A with "rain" or 0x18 with "no rain".

Telegram part 2: 0xVVWXXYY

- VV is the solar value of the west sensor
 0(0)-150klux(255)
 e.g.: 0x44 = 68; $68 * 150 / 255 = 40$ klux
- WW is the solar value of the south sensor
 0(0)-150klux (255)
- XX is the value of the east sensor
 0(0)-150klux (255)
- YY is always 0x28

Teach-in telegram BD3..DBO: 0x4C080D80

FWZ12 (EEP: 07-12-01)

ORG = 0x07
 Data_byte3 to Data_byte1 form a 24-bit binary coded number
 Data_byte3 = Data Byte 3 (MSB) 0...16777215
 Data_byte2 = Data Byte 2 0...16777215
 Data_byte1 = Data Byte 1 (LSB) 0...16777215
 Data_byte0 = DBO_Bit4 = 0 (fixed)
 DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)
 DBO_Bit2 = switchover data content:
 1 = momentary power in watts,
 0 = meter status in 0.1 KW/h
 DBO_Bit1 = 0 (fixed)
 DBO_Bit0 = 1 (fixed)
 Possible values in data telegram:
 DBO = 0x09 -> meter status normal rate in 0.1 KW/h
 DBO = 0x19 -> meter status off-peak rate in 0.1 KW/h
 DBO = 0x0C -> momentary power in W,
 normal rate active
 DBO = 0x1C -> momentary power in W,
 off-peak rate active

Teach-in telegram BD3..DBO: 0x48, 0x08, 0x0D, 0x80 (is sent once on every power-up)

FWZ61 (EEP: 07-12-01)

ORG = 0x07
 Data_byte3 to Data_byte1 form a 24-bit binary coded number
 Data_byte3 = Data Byte 3 (MSB) 0...16777215
 Data_byte2 = Data Byte 2 0...16777215
 Data_byte1 = Data Byte 1 (LSB) 0...16777215
 Data_byte0 = DBO_Bit4 = 0 (fixed)
 DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)
 DBO_Bit2 = switchover data content:
 1 = momentary power in watts,
 0 = meter status in 0.1 KW/h
 DBO_Bit1 = 0 (fixed)
 DBO_Bit0 = 1 (fixed)
 Possible values in data telegram:
 DBO = 0x09 -> meter status normal rate in 0.1 KW/h
 DBO = 0x19 -> meter status off-peak rate in 0.1 KW/h
 DBO = 0x0C -> momentary power in W,
 normal rate active
 DBO = 0x1C -> momentary power in W,
 off-peak rate active

Teach-in telegram BD3..DBO: 0x48, 0x08, 0x0D, 0x80 (is sent once on every power-up)

FZS

ORG = 0x05
 Data_byte3 = 0x10/0x00

Activation telegrams from the FVS software

FLC61-230 V

Direct switching command, FUNC=38, Command 1, (like EEP 07-38-08).

There is the possibility to **block*** the switching state with absolut priority so that it cannot be changed by other taught-in pushbuttons.

ORG = 0x07
 Data_byte3 = 0x01
 Data_byte2 = no used
 Data_byte1 = no used
 Data_byte0 = DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)
 DBO_Bit2 = 1: **block* switching state**,
 0: do not block switching state
 DBO_Bit0 = 1: switching output ON,
 0: switching output OFF

Data telegrams have to look like date:

0x01, 0x00, 0x00, **0x09** (switching output ON, not blocked)
 0x01, 0x00, 0x00, **0x08** (switching output OFF, not blocked)
 0x01, 0x00, 0x00, **0x0D** (switching output ON, blocked)
 0x01, 0x00, 0x00, **0x0C** (switching output OFF, blocked)

FSB12

Direct drive command with specification of runtime in s. FUNC=3F, Typ=7F (universal)

ORG = 0x07
 Data_byte3 = -
 Data_byte2 = runtime in seconds 1-255 dec,
 the runtime setting on the device is ignored.
 Data_byte1 = command:
 0x00 = Stop
 0x01 = Up
 0x02 = Down
 Data_byte0 = DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)

Teach-in telegram BD3..DBO must look like this: 0xFF, 0xF8, 0x0D, 0x80
 It is possible to interrupt at any time by pressing taught-in buttons!

FSB61

Direct drive command with specification of runtime in s. FUNC=3F, Typ=7F (universal)

ORG = 0x07
 Data_byte3 = -
 Data_byte2 = runtime in seconds 1-255 dec,
 the runtime setting on the device is ignored.
 Data_byte1 = command:
 0x00 = Stop
 0x01 = Up
 0x02 = Down
 Data_byte0 = DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)

Teach-in telegram BD3..DBO must look like this: 0xFF, 0xF8, 0x0D, 0x80
 It is possible to interrupt at any time by pressing taught-in buttons!

FSR12-4x-12V DC

Direct switching command, FUNC=38, Command 1, (like EEP 07-38-08). Separately for each channel.

There is the possibility to **block*** the switching state with absolut priority so that it cannot be changed by other taught-in pushbuttons.

ORG = 0x07
 Data_byte3 = 0x01
 Data_byte2 = no used
 Data_byte1 = no used
 Data_byte0 = DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)
 DBO_Bit2 = 1: **block* switching state**,
 0: do not block switching state
 DBO_Bit0 = 1: switching output ON,
 0: switching output OFF

Data telegrams have to look like date:

0x01, 0x00, 0x00, **0x09** (switching output ON, not blocked)
 0x01, 0x00, 0x00, **0x08** (switching output OFF, not blocked)
 0x01, 0x00, 0x00, **0x0D** (switching output ON, blocked)
 0x01, 0x00, 0x00, **0x0C** (switching output OFF, blocked)

FUD12NPN+FUD61NP+FUD61NPN

Direct transfer of dimming value from 0 to 100%, similar to FUNC=38, Command 2

ORG = 0x07
 Data_byte3 = 0x02
 Data_byte2 = dimming value in % from 0 to 100 dec.
 Data_byte1 = dimming speed
 0x00 = the dimming speed set on the dimmer is used.
 0x01 = very fast dimming speed to ...
 0xFF = very slow dimming speed
 Data_byte0 = DBO_Bit3 = LRN Button
 (0 = teach-in telegram, 1 = data telegram)
 DBO_Bit0 = 1: Dimmer ON, 0: Dimmer OFF.

Teach-in telegram BD3..DBO must look like this: 0x02, 0x00, 0x00, 0x00

Data telegrams BD3..DBO must look like this, for example:

0x02, 0x32, 0x00, 0x09 (dimmer on at 50% and internal dimming speed)
 0x02, 0x64, 0x01, 0x09 (dimmer on at 100% and fastest dimming speed)
 0x02, 0x14, 0xFF, 0x09 (dimmer on at 20% and slowest dimming speed)
 0x02, 0x..., 0x..., 0x08 (dimmer off)

Confirmation telegrams of bidirectional actuators

FADS60 -230 V

Every time the internal switching relay changes state, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300-400 ms. With central commands (ZE/ZA), the relay state is also sent if the state already matches the required state.

ORG = 0x05
Data_byte3 = 0x70 = relay ON, 0x50 = relay OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent!

FFR61-230 V, FZK61NP-230 V

Every time the state of the internal switching relay 1 changes, the internal switching relay 1 sends a PTM200 telegram containing the unique ID of the integrated TCM300 after approx. 300 ms. Relay 2 sends the same telegram after approx. 1000 ms.

ORG = 0x05
Data_byte3 = 0x70 = channel 1 ON, 0x50 = channel 1 OFF
0x30 = channel 2 ON, 0x10 = channel 2 OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent!

FHK61 -230 V, FHK61/8 -24 V

Every time the internal switching relay changes state, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300 ms.

ORG = 0x05
Data_byte3 = 0x70 = relay ON, 0x50 = relay OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent.

FMS61NP -230 V

Every time the internal switching relay 1 changes state, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300 ms. Relay 2 sends this message after approx. 1000 ms.

With central commands (ZE/ZA), the relay state is also sent if the state already corresponds to the desired state.

ORG = 0x05
Data_byte3 = 0x70 = channel 1 ON, 0x50 = channel 1 OFF
0x30 = channel 2 ON, 0x10 = channel 2 OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent.

FMZ61-230 V

Every time the the internal switching relay changes state, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300-400 ms.

With central commands (ZE/ZA), the relay state is also sent if the state already corresponds to the desired state.

ORG = 0x05
Data_byte3 = 0x70 = relay ON, 0x50 = relay OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent.

FSB61NP -230 V

When the top or bottom end position is reached on expiry of the RV time set on the device, a PTM telegram containing the unique ID of the integrated TCM300 after approx. 300-400 ms.

ORG = 0x05
Data_byte3 = 0x70 = top end position,
0x50 = bottom end position
0x00 = motor running, or roller shutter stopped at some indefinite position since it was stopped manually

Remark: The RV time must be set on the device so that the end position is always reached. If the roller shutter is already at an end position, the relay is switched on receipt of a drive command anyway (0x00 is sent) and it is switched off on expiry of the RV. (0x70 or 0x50 is sent)

FSR61NP-230 V+FSR61 -230 V+FSR61/8-24 V+FSR61 VA -10 A+FSR70W -16 A+FTN61NP -230 V+FLC61NP -230 V

Every time the the internal switching relay state changes, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300-400 ms. With central commands (ZE/ZA) the relay state is also sent if the state already corresponds to the required state.

ORG = 0x05
Data_byte3 = 0x70 = relay ON, 0x50 = relay OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent.

FUD61NP -230 V+FUD61NPN-230 V

Every time the dimmer is switched on or off, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300-400 ms.

ORG = 0x05
Data_byte3 = 0x70 = dimmer ON, 0x50 = dimmer OFF

In addition, approx. 1 second after reaching the required dimming value, a 4BS telegram containing the unique ID of the integrated TCM300 is also sent.

ORG = 0x07
Data_byte3 = 0x02
Data_byte2 = dimming value in % of 0-100 dec .
Data_byte1 = 0x00
Data_byte0 = 0x08 = dimmer OFF, 0x09 = dimmer ON.

Caution: No teach-in telegram containing ORG=7 can be generated.

Caution: Two telegram kinds (ORG=5, ORG=7) containing the same ID are sent!