Sewi KNX L-Pr

Brightness sensor with presence detector

Item number 70396

elsner elektronik

Installation and Adjustment

Installation, inspection, commissioning and troubleshooting of the device must only be carried out by a competent electrician.

This manual is amended periodically and will be brought into line with new software releases. The change status (software version and date) can be found in the contents footer. If you have a device with a later software version, please check **www.elsner-elektronik.de** in the menu area "Service" to find out whether a more up-to-date version of the manual is available.

Clarification of signs used in this manual

	Safety advice.
	Safety advice for working on electrical connections, components, etc.
DANGER!	... indicates an immediately hazardous situation which will lead to death or severe injuries if it is not avoided.
WARNING!	... indicates a potentially hazardous situation which may lead to death or severe injuries if it is not avoided.
CAUTION!	... indicates a potentially hazardous situation which may lead to trivial or minor injuries if it is not avoided.
STOP **ATTENTION!**	... indicates a situation which may lead to damage to property if it is not avoided.
ETS	In the ETS tables, the parameter default settings are marked by underlining.

1. Description

The **Sensor Sewi KNX L-Pr** captures brightness and motion in rooms. The brightness value measured can be used for the control of limit-dependent switching outputs. States can be linked via AND logic gates and OR logic gates. Multi-function modules change input data as required by means of calculations, querying a condition, or converting the data point type.

Functions:

- **Brightness measurement** with **brightness regulation**
- **Motion detection**
- **Switching outputs** for all measured values. Threshold values can be adjusted per parameter or via communication objects
- **8 AND and 8 OR logic gates**, each with 4 inputs. All switching events as well as 16 logic inputs in the form of communications objects can be used as inputs for the logic gates. The output of each gate can be configured optionally as 1-bit or 2 x 8-bit
- **8 multi-function modules** (computers) for changing the input data by calculations, by querying a condition or by converting the data point type

Configuration is made using the KNX software ETS. The **product file** can be downloaded from the Elsner Elektronik website on **www.elsner-elektronik.de** in the “Service” menu.

1.0.1. Scope of delivery

- Combined sensor

1.1. Technical data

Housing	Plastic
Colour	White (Cover glossy, skirting matt)
Assembly	Surface, wall or ceiling installation
Protection category	IP 30
Dimensions	Ø approx. 105 mm, height approx. 32 mm
Total weight	approx. 80 g
Ambient temperature	Operation -20…+50°C, storage -20…+70°C
Ambient humidity	max. 95% RH, avoid condensation
Operating voltage	KNX bus voltage
Bus current	max. 10 mA
Data output	KNX +/- bus plug-in terminal
BCU type	Integrated microcontroller
PEI type	0
Group addresses	max. 2000
Assignments	max. 2000
Communication objects	230

Brightness sensor:	
Measurement range	0 lux ... 150,000 lux
Resolution	1 lux at 0...255 lux 6 lux at 256...2,645 lux 96 lux at 2,646...128,256 lux 762 lux at 128,257...150,000 lux
Accuracy	±15% of the measurement value at 35 lux ... 150,000 lux
Motion sensor:	
Coverage angle	approx. 100° × 82° (see also *Coverage area of the motion detector*, Seite 5)
Range	approx. 5 m

The product conforms with the provisions of EU directives.

2. Installation and start-up

2.1. Installation notes

Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

CAUTION!
Live voltage!
There are unprotected live components inside the device.

- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

2.2. Installation location

Install and use only in dry interior rooms! Avoid condensation.

The **Sensor Sewi KNX L-Pr** is installed surface mounted on walls or ceilings.

For **capturing movement** make sure that the desired area is covered by the sensor's coverage angle and that no obstacles obstruct the recording.

2.2.1. Coverage area of the motion detector

Angle of coverage: approx. 100° × 82°
Range: approx. 5 m

Segmentation of the coverage area

Fig. 1
Distance 2.50 m

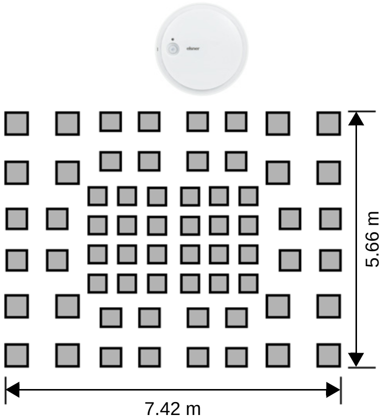
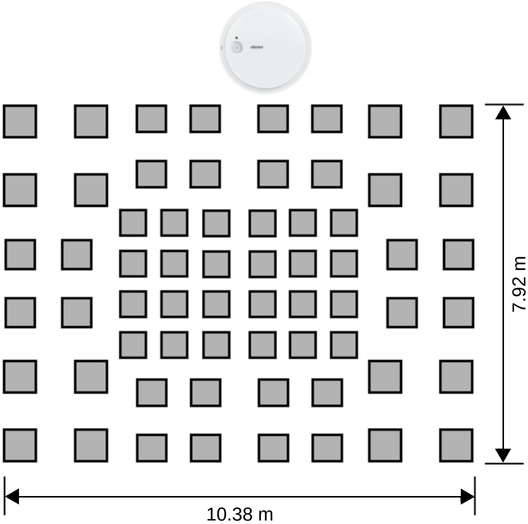


Fig. 2
Distance 3.50 m



Size of the coverage area

Distance	Length	Width
2.50 m	approx. 7.42 m	approx. 5.66 m
3.50 m	approx. 10.38 m	approx. 7.92 m

2.3. Construction of the sensor

2.3.1. Housing from the outside

Fig. 3
1 Brightness sensor
2 Motion sensor
A Recess to open the housing. When closing the housing, the recess aligns to the marking on the skirting

2.3.2. Printed circuit boards / connections

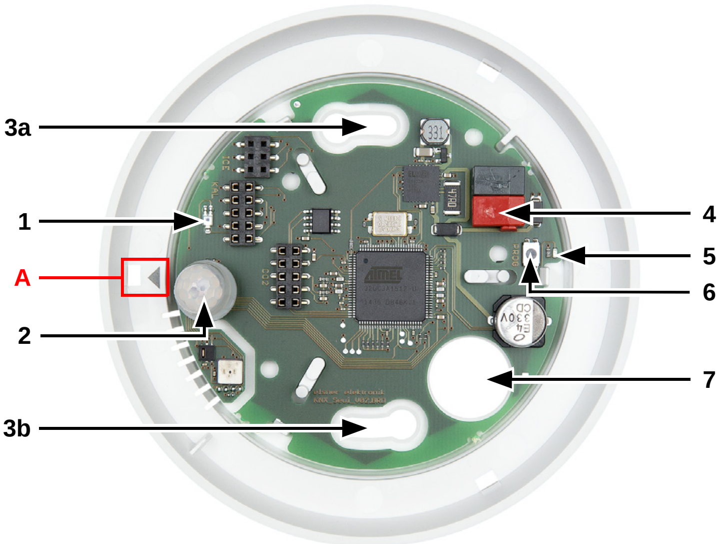


Fig. 4
1 Brightness sensor
2 Motion sensor
3 a+b Long holes for mounting (hole distance 60 mm)
4 KNX-terminal BUS +/-
5 Programming LED
6 Programming button
7 Cable bushing

A Mark for aligning the cover

2.4. Assembly

Fig. 5

Open the housing. To do this, carefully lift the cover from the skirting. Start at the recess (Fig. 3: A).

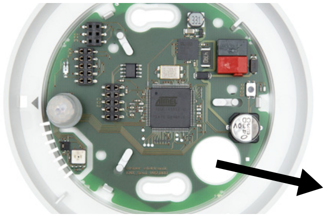


Fig. 6

Lead the bus cable through the cable bushing in the skirting.

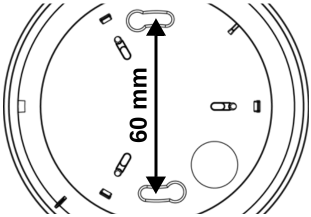


Fig. 7

Screw the skirting to the wall or the ceiling.

Hole distance 60 mm.

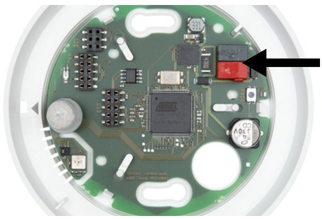


Fig. 8

Connect the KNX bus to the KNX terminal.

Fig. 9

Close the housing by positioning the cover and snapping it into place. To do this, align the recess on the cover to the marking on the skirting (Fig. 3+4: A).

2.5. Notes on mounting and commissioning

Never expose the device to water (e.g. rain) or dust. This can damage the electronics. You must not exceed a relative humidity of 95%. Avoid condensation.

The air slots on the side must not be closed or covered. The brightness sensor and the motion sensor must not be painted over or covered.

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

The motion sensor has a start-up phase of approx. 15 seconds during which no motion detection takes place.

3. Addressing the equipment

The equipment is delivered with the bus address 15.15.250. You can program a different address in the ETS by overwriting the address 15.15.250 or by teaching the device via the programming button.

The programming button is on the inside of the housing (Fig. 4: No. 6).

4. Maintenance

The brightness sensor, the motion sensor and the air slots on the side must not get dirty or covered. As a rule, it is sufficient to wipe the device with a soft, dry cloth twice a year.

5. Transfer protocol

Units:

Brightness in Lux

5.1. List of all communication objects

Abbreviation flags:

C Communication
R Read
W Write
T Transfer
U Update

No.	Text	Function	Flags	DPT type	Size
1	Software version	Output	R-CT	[217.1] DPT_Version	2 bytes
96	Brightness measurement	Output	R-CT	[9.4] DPT_Value_Lux	2 bytes
99	Brightness correction factor	Input/ Output	RWCT	[14.5] DPT_Value_Amplitude	4 bytes
129	Brightness sensor 2 threshold value 1: Absolute value	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
130	Brightness sensor 2 threshold value 1: (1:+ | 0:-)	Input	-WC-	[1.1] DPT_Switch	1 bit
131	Brightness sensor 2 threshold value 1: Delay from 0 to 1	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
132	Brightness sensor 2 threshold value 1: Delay from 1 to 0	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
133	Brightness sensor 2 threshold value 1: Switching output	Output	R-CT	[1.1] DPT_Switch	1 bit
134	Brightness sensor 2 threshold value 1: Switching output block	Input	-WC-	[1.1] DPT_Switch	1 bit
136	Brightness sensor 2 threshold value 2: Absolute value	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
137	Brightness sensor 2 threshold value 2: (1:+ | 0:-)	Input	-WC-	[1.1] DPT_Switch	1 bit
138	Brightness sensor 2 threshold value 2: Delay from 0 to 1	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
139	Brightness sensor 2 threshold value 2: Delay from 1 to 0	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
140	Brightness sensor 2 threshold value 2: Switching output	Output	R-CT	[1.1] DPT_Switch	1 bit

No.	Text	Function	Flags	DPT type	Size
141	Brightness sensor 2 threshold value 2: Switching output block	Input	-WC-	[1.1] DPT_Switch	1 bit
143	Brightness sensor 2 threshold value 3: Absolute value	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
144	Brightness sensor 2 threshold value 3: (1:+ | 0:-)	Input	-WC-	[1.1] DPT_Switch	1 bit
145	Brightness sensor 2 threshold value 3: Delay from 0 to 1	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
146	Brightness sensor 2 threshold value 3: Delay from 1 to 0	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
147	Brightness sensor 2 threshold value 3: Switching output	Output	R-CT	[1.1] DPT_Switch	1 bit
148	Brightness sensor 2 threshold value 3: Switching output block	Input	-WC-	[1.1] DPT_Switch	1 bit
150	Brightness sensor 2 threshold value 4: Absolute value	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
151	Brightness sensor 2 threshold value 4: (1:+ | 0:-)	Input	-WC-	[1.1] DPT_Switch	1 bit
152	Brightness sensor 2 threshold value 4: Delay from 0 to 1	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
153	Brightness sensor 2 threshold value 4: Delay from 1 to 0	Input	-WC-	[7.5] DPT_TimePeriodSec	2 bytes
154	Brightness sensor 2 threshold value 4: Switching output	Output	R-CT	[1.1] DPT_Switch	1 bit
155	Brightness sensor 2 threshold value 4: Switching output block	Input	-WC-	[1.1] DPT_Switch	1 bit
251	Night: Switching output	Output	R-CT	[1.1] DPT_Switch	1 bit
252	Night: Switching delay on night	Input	-WC-	[7,005] DPT_-TimePeriodSec	2 bytes
253	Night: Switching delay on day	Input	-WC-	[7,005] DPT_-TimePeriodSec	2 bytes
1141	Computer 1: Input I1	Input	RWCT		4 bytes
1142	Computer 1: Input I2	Input	RWCT		4 bytes
1143	Computer 1: Input I3	Input	RWCT		4 bytes
1144	Computer 1: Output O1	Output	R-CT		4 bytes
1145	Computer 1: Output O2	Output	R-CT		4 bytes
1146	Computer 1: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1147	Computer 1: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1148	Computer 1: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1149	Computer 2: Input I1	Input	RWCT		4 bytes
1150	Computer 2: Input I2	Input	RWCT		4 bytes

No.	Text	Func-tion	Flags	DPT type	Size
1151	Computer 2: Input I3	Input	RWCT		4 bytes
1152	Computer 2: Output O1	Output	R-CT		4 bytes
1153	Computer 2: Output O2	Output	R-CT		4 bytes
1154	Computer 2: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1155	Computer 2: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1156	Computer 2: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1157	Computer 3: Input I1	Input	RWCT		4 bytes
1158	Computer 3: Input I2	Input	RWCT		4 bytes
1159	Computer 3: Input I3	Input	RWCT		4 bytes
1160	Computer 3: Output O1	Output	R-CT		4 bytes
1161	Computer 3: Output O2	Output	R-CT		4 bytes
1162	Computer 3: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1163	Computer 3: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1164	Computer 3: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1165	Computer 4: Input I1	Input	RWCT		4 bytes
1166	Computer 4: Input I2	Input	RWCT		4 bytes
1167	Computer 4: Input I3	Input	RWCT		4 bytes
1168	Computer 4: Output O1	Output	R-CT		4 bytes
1169	Computer 4: Output O2	Output	R-CT		4 bytes
1170	Computer 4: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1171	Computer 4: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1172	Computer 4: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1173	Computer 5: Input I1	Input	RWCT		4 bytes
1174	Computer 5: Input I2	Input	RWCT		4 bytes
1175	Computer 5: Input I3	Input	RWCT		4 bytes
1176	Computer 5: Output O1	Output	R-CT		4 bytes
1177	Computer 5: Output O2	Output	R-CT		4 bytes
1178	Computer 5: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1179	Computer 5: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1180	Computer 5: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1181	Computer 6: Input I1	Input	RWCT		4 bytes
1182	Computer 6: Input I2	Input	RWCT		4 bytes
1183	Computer 6: Input I3	Input	RWCT		4 bytes
1184	Computer 6: Output O1	Output	R-CT		4 bytes
1185	Computer 6: Output O2	Output	R-CT		4 bytes

No.	Text	Func-tion	Flags	DPT type	Size
1186	Computer 6: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1187	Computer 6: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1188	Computer 6: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1189	Computer 7: Input I1	Input	RWCT		4 bytes
1190	Computer 7: Input I2	Input	RWCT		4 bytes
1191	Computer 7: Input I3	Input	RWCT		4 bytes
1192	Computer 7: Output O1	Output	R-CT		4 bytes
1193	Computer 7: Output O2	Output	R-CT		4 bytes
1194	Computer 7: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1195	Computer 7: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1196	Computer 7: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1197	Computer 8: Input I1	Input	RWCT		4 bytes
1198	Computer 8: Input I2	Input	RWCT		4 bytes
1199	Computer 8: Input I3	Input	RWCT		4 bytes
1200	Computer 8: Output O1	Output	R-CT		4 bytes
1201	Computer 8: Output O2	Output	R-CT		4 bytes
1202	Computer 8: Condition text	Output	R-CT	[16.0] DPT_String_ASCII	14 bytes
1203	Computer 8: Monitoring status	Output	R-CT	[1.1] DPT_Switch	1 bit
1204	Computer 8: Block (1: block)	Input	-WC-	[1.1] DPT_Switch	1 bit
1391	Logic input 1	Input	-WC-	[1.2] DPT_Bool	1 bit
1392	Logic input 2	Input	-WC-	[1.2] DPT_Bool	1 bit
1393	Logic input 3	Input	-WC-	[1.2] DPT_Bool	1 bit
1394	Logic input 4	Input	-WC-	[1.2] DPT_Bool	1 bit
1395	Logic input 5	Input	-WC-	[1.2] DPT_Bool	1 bit
1396	Logic input 6	Input	-WC-	[1.2] DPT_Bool	1 bit
1397	Logic input 7	Input	-WC-	[1.2] DPT_Bool	1 bit
1398	Logic input 8	Input	-WC-	[1.2] DPT_Bool	1 bit
1399	Logic input 9	Input	-WC-	[1.2] DPT_Bool	1 bit
1400	Logic input 10	Input	-WC-	[1.2] DPT_Bool	1 bit
1401	Logic input 11	Input	-WC-	[1.2] DPT_Bool	1 bit
1402	Logic input 12	Input	-WC-	[1.2] DPT_Bool	1 bit
1403	Logic input 13	Input	-WC-	[1.2] DPT_Bool	1 bit
1404	Logic input 14	Input	-WC-	[1.2] DPT_Bool	1 bit
1405	Logic input 15	Input	-WC-	[1.2] DPT_Bool	1 bit
1406	Logic input 16	Input	-WC-	[1.2] DPT_Bool	1 bit
1411	AND logic 1: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1412	AND logic 1: 8-bit output A	Output	R-CT		1 byte

No.	Text	Func-tion	Flags	DPT type	Size
1413	AND logic 1: 8-bit output B	Output	R-CT		1 byte
1414	AND logic 1: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1415	AND logic 2: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1416	AND logic 2: 8-bit output A	Output	R-CT		1 byte
1417	AND logic 2: 8-bit output B	Output	R-CT		1 byte
1418	AND logic 2: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1419	AND logic 3: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1420	AND logic 3: 8-bit output A	Output	R-CT		1 byte
1421	AND logic 3: 8-bit output B	Output	R-CT		1 byte
1422	AND logic 3: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1423	AND logic 4: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1424	AND logic 4: 8-bit output A	Output	R-CT		1 byte
1425	AND logic 4: 8-bit output B	Output	R-CT		1 byte
1426	AND logic 4: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1427	AND logic 5: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1428	AND logic 5: 8-bit output A	Output	R-CT		1 byte
1429	AND logic 5: 8-bit output B	Output	R-CT		1 byte
1430	AND logic 5: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1431	AND logic 6: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1432	AND logic 6: 8-bit output A	Output	R-CT		1 byte
1433	AND logic 6: 8-bit output B	Output	R-CT		1 byte
1434	AND logic 6: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1435	AND logic 7: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1436	AND logic 7: 8-bit output A	Output	R-CT		1 byte
1437	AND logic 7: 8-bit output B	Output	R-CT		1 byte
1438	AND logic 7: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1439	AND logic 8: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1440	AND logic 8: 8-bit output A	Output	R-CT		1 byte
1441	AND logic 8: 8-bit output B	Output	R-CT		1 byte
1442	AND logic 8: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1443	OR logic 1: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1444	OR logic 1: 8-bit output A	Output	R-CT		1 byte
1445	OR logic 1: 8-bit output B	Output	R-CT		1 byte
1446	OR logic 1: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1447	OR logic 2: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1448	OR logic 2: 8-bit output A	Output	R-CT		1 byte
1449	OR logic 2: 8-bit output B	Output	R-CT		1 byte
1450	OR logic 2: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1451	OR logic 3: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1452	OR logic 3: 8-bit output A	Output	R-CT		1 byte

No.	Text	Function	Flags	DPT type	Size
1453	OR logic 3: 8-bit output B	Output	R-CT		1 byte
1454	OR logic 3: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1455	OR logic 4: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1456	OR logic 4: 8-bit output A	Output	R-CT		1 byte
1457	OR logic 4: 8-bit output B	Output	R-CT		1 byte
1458	OR logic 4: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1459	OR logic 5: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1460	OR logic 5: 8-bit output A	Output	R-CT		1 byte
1461	OR logic 5: 8-bit output B	Output	R-CT		1 byte
1462	OR logic 5: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1463	OR logic 6: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1464	OR logic 6: 8-bit output A	Output	R-CT		1 byte
1465	OR logic 6: 8-bit output B	Output	R-CT		1 byte
1466	OR logic 6: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1467	OR logic 7: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1468	OR logic 7: 8-bit output A	Output	R-CT		1 byte
1469	OR logic 7: 8-bit output B	Output	R-CT		1 byte
1470	OR logic 7: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1471	OR logic 8: 1-bit switching output	Output	R-CT	[1.2] DPT_Bool	1 bit
1472	OR logic 8: 8-bit output A	Output	R-CT		1 byte
1473	OR logic 8: 8-bit output B	Output	R-CT		1 byte
1474	OR logic 8: Block	Input	-WC-	[1.1] DPT_Switch	1 bit
1520	Motion detector: Test object	Output	R-CT		4 bytes
1521	Motion detector: Test object release (1 = release)	Input	-WC-	[1.1] DPT_Switch	1 bit
1522	Motion detector: Slave: Block (1 = Blocking)	Input	-WC-	[1.1] DPT_Switch	1 bit
1524	Motion detector: Slave: Message	Output	R-CT	[1.1] DPT_Switch	1 bit
1525	Motion detector: Slave: Cycle reset	Input	-WC-		1 byte
1531	Motion detector: Master 1: Brightness threshold value on	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1532	Motion detector: Master 1: Brightness threshold value off	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1533	Motion detector: Master 1: Brightness waiting period	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1534	Motion detector: Master 1: Output	Output	R-CT		4 bytes
1535	Motion detector: Master 1: Switch on delay	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1536	Beweg.sensor: Master 1: Ausschaltverzögerung	Eingang	LSK-	[7.5] DPT_TimePeriodSec	2 Bytes

No.	Text	Function	Flags	DPT type	Size
1537	Motion detector: Master 1: Slave message	Input	-WC-	[1.1] DPT_Switch	1 bit
1538	Motion detector: Master 1: Slave cycle reset	Output	--CT		1 byte
1539	Motion detector: Master 1: Block (1 = Blocking)	Input	-WC-	[1.1] DPT_Switch	1 bit
1540	Motion detector: Master 1: Central off	Input	-WC-	[1.1] DPT_Switch	1 bit
1541	Motion detector: Master 2: Brightness threshold value on	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1542	Motion detector: Master 2: Brightness threshold value off	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1543	Motion detector: Master 2: Brightness waiting period	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1544	Motion detector: Master 2: Output	Output	R-CT		4 bytes
1545	Motion detector: Master 2: Switch on delay	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1546	Motion detector: Master 2: Switch off delay	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1547	Motion detector: Master 2: Slave message	Input	-WC-	[1.1] DPT_Switch	1 bit
1548	Motion detector: Master 2: Slave cycle reset	Output	--CT		1 byte
1549	Motion detector: Master 2: Block (1 = Blocking)	Input	-WC-	[1.1] DPT_Switch	1 bit
1550	Motion detector: Master 2: Central off	Input	-WC-	[1.1] DPT_Switch	1 bit
1551	Motion detector: Master 3: Brightness threshold value on	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1552	Motion detector: Master 3: Brightness threshold value off	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1553	Motion detector: Master 3: Brightness waiting period	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1554	Motion detector: Master 3: Output	Output	R-CT		4 bytes
1555	Motion detector: Master 3: Switch on delay	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1556	Motion detector: Master 3: Switch off delay	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1557	Motion detector: Master 3: Slave message	Input	-WC-	[1.1] DPT_Switch	1 bit
1558	Motion detector: Master 3: Slave cycle reset	Output	--CT		1 byte
1559	Motion detector: Master 3: Block (1 = Blocking)	Input	-WC-	[1.1] DPT_Switch	1 bit
1560	Motion detector: Master 3: Central off	Input	-WC-	[1.1] DPT_Switch	1 bit

No.	Text	Function	Flags	DPT type	Size
1561	Motion detector: Master 4: Brightness threshold value on	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1562	Motion detector: Master 4: Brightness threshold value off	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1563	Motion detector: Master 4: Brightness waiting period	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1564	Motion detector: Master 4: Output	Output	R-CT		4 bytes
1565	Motion detector: Master 4: Switch on delay	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1566	Motion detector: Master 4: Switch off delay	Input	LSK-	[7.5] DPT_TimePeriodSec	2 bytes
1567	Motion detector: Master 4: Slave message	Input	-WC-	[1.1] DPT_Switch	1 bit
1568	Motion detector: Master 4: Slave cycle reset	Output	--CT		1 byte
1569	Motion detector: Master 4: Block (1 = Blocking)	Input	-WC-	[1.1] DPT_Switch	1 bit
1570	Motion detector: Master 4: Central off	Input	-WC-	[1.1] DPT_Switch	1 bit
1581	Light controller: Brightness setpoint value	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1582	Light controller: Stop delay	Input/ Output	RWCT	[7.5] DPT_TimePeriodSec	2 bytes
1583	Light controller: Start / Stop (1 = Start | 0 = Stop)	Input	-WC-	[1.1] DPT_Switch	1 bit
1584	Light controller: Dimmer increments	Input	RWCT	[5.1] DPT_Scaling	1 byte
1586	Light controller: Target-actual-difference	Input/ Output	RWCT	[9.4] DPT_Value_Lux	2 bytes
1587	Light controller: Reset time	Input/ Output	RWCT	[7.5] DPT_TimePeriodSec	2 bytes
1588	Light controller: Actuating variable	Input/ Output	R-CT	[5.1] DPT_Scaling	1 byte
1589	Light controller: Switching	Output	R-CT	[1.1] DPT_Switch	1 bit
1590	Light controller: Dimming	Output	R-CT	[3.7] DPT_Control_Dimming	4 bit
1591	Light controller: Brightness in %	Output	R-CT	[5.1] DPT_Scaling	1 byte
1592	Light controller: Switching feedback	Input	-WC-	[1.1] DPT_Switch	1 bit
1593	Light controller: Dim response	Input	-WC-	[3.7] DPT_Control_Dimming	4 bit
1594	Light controller: Brightness in % response	Input	-WCT	[5.1] DPT_Scaling	1 byte

No.	Text	Function	Flags	DPT type	Size
1595	Light controller: Interruption waiting period	Input/ Output	RWCT	[7.5] DPT_Time-PeriodSec	2 bytes
1596	Light controller: Continued	Input	-WC-	[1.1] DPT_Switch	1 bit
1597	Light controller: Block (1 = Blocking)	Input	-WC-	[1.1] DPT_Switch	1 bit

6. Parameter setting

6.1. Behaviour on power failure/ restoration of power

Behaviour following a failure of the bus power supply:

The device sends nothing.

Behaviour on bus restoration of power and following programming or reset:

The device sends all outputs according to their send behaviour set in the parameters with the delays established in the "General settings" parameter block. The "Software version" communications object is sent once after 5 seconds.

6.2. General settings

Set basic characteristics for the data transfer.

Send delay after power-up and programming for:	
Measured values	5 s • ... • 2 h
Threshold values and switching outputs	5 s • ... • 2 h
Computer objects	5 s • ... • 2 h
Logic objects	5 s • ... • 2 h
Maximum telegram rate	• 1 message per second • ... • 5 messages per second • ... • 20 messages per second

6.3. Motion detector

The motion detector detects movement by means of temperature differences. Please note that the "no movement" message is only sent to the bus after a 5 second delay. After connecting the operating voltage and after a reset, it takes 15 seconds until the sensor is ready for operation.

Activate the **test object** if you would like to test the motion detection while commissioning.

With an active test object, you can enter the settings for analysis of the release object, the value prior to the first communication, and the type and value of the test object.

Use test object	No • Yes
If test object is used:	
Release object analysis	• at value 1: release | at value 0: block • at value 0: release | at value 1: block
Value prior to first communication	0 • 1
Type of test object	• 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 1 byte 0...63) scenario call-up • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Test object value for movement	e.g. 0 • 1 [depending on the type of test object]
Test object value without movement	e.g. 0 • 1 [depending on the type of test object]

Select whether the motion detector is operated as **master or slave**.
For a master device, the reactions to motion detection are filed in the master settings 1 to 4. The master can thus control up to four different lamps, scenarios etc. and, as an option, also observe incoming motion messages from slave devices.
A slave device sends a motion message to the master via the bus.

Mode	Slave • Master

Motion detector as slave:

Activate the slave in order to use it.

Use slave	No • **Yes**

When a motion is detected, the device periodically sends a 1 to the master via the bus.

Information on setting the slave sending cycle and the cycle reset can be found in chapter *Align communication between master and slave*, page 23.

Set the **sending cycle** shorter than the master's switch-off delay.

Sending cycle in the event of movement (in seconds)	1...240; 2

Set the **object type and value** for the cycle reset input for the slave in the same way as for the cycle reset output for the master.

Cycle reset object type	• 1 bit • 1 byte (0%...100%)
Cycle reset at value	0 • 1 and/or 0...100; 1

The slave can be **blocked** via the bus.

Use block	No • **Yes**
Analysis of the blocking object	• at value 1: block | at value 0: release • at value 0: block | at value 1: release
Value prior to first communication	0 • 1

6.3.1. Master 1/2/3/4

If the device is set as a master, the additional master settings 1 to 4 will appear. This enables the **Sensor Sewi KNX L-Pr** to perform four different control functions for motion detection. Activate the master in order to use it.

Use master 1/2/3/4	No • Yes

Set, in which cases **threshold values and delay times** received via object are to be retained. The parameter is only taken into consideration if the setting via object is activated below. Please note that the setting "After power supply restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the 1st communication (setting via objects is ignored).

Maintain the	
threshold values and delays received via communication objects	• never • after power supply restoration • after power supply restoration and programming

Select, whether motion is to be detected **constantly or brightness dependent**.

Motion detection	constantly • brightness dependent

Settings for brightness dependent motion detection:

The **brightness dependent motion detection** can be used via separate threshold values for switch-on and switch-off or dependent on daylight. The separate threshold values are ideal for controlling the light in rooms which are only illuminated by artificial light. The daylight dependent control is ideal for rooms with daylight and artificial light.

Motion detection	**brightness dependent**
Type of brightness dependency	• separate switch-on and switch-off values • daylight dependent

For **daylight dependent motion detection with separate switch-on and switch-off threshold values** activate, as required, the objects for setting the threshold values. Then specify the switch-on and switch-off values (brightness range). The switch-on value is the value, below which the room should be lit in the event of movement. The switch-off value should be higher than the brightness value of the artificially lit room.

Type of brightness dependency	**• separate switch-on and switch-off values**
Threshold values can be set via objects	No • Yes
Switch on sensor below Lux	1...5000; 200
Switch off sensor below Lux	1...5000; 500

For the **daylight dependent motion detection** activate, as required, the objects for setting the threshold values/hysteresis and waiting period. Then specify the switch-on value. This is the value, below which the room should be lit in the event of movement.

The switch-off value is derived from the brightness measurement that is performed by the sensor at the end of the waiting period. Set the waiting period such that after it all lamps are set to the final brightness. The hysteresis is added to the measured brightness value. If the room brightness later exceeds this total value because the room is illuminated by daylight, the motion control is switched off.

Type of brightness dependency	**• Daylight dependent**
Threshold values and hysteresis can be set via objects	No • Yes
Waiting period can be set via objects	No • Yes
Switch on sensor below Lux	1...5000; 200
Switch off sensor, at the earliest after a waiting period of seconds	0...600; 5
after motion detection and above measured brightness plus hysteresis in Lux	1...5000; 200

Settings for all types of motion detection:

The following settings can be made, independent of the motion detection type, i.e. for "constant" and "brightness dependent" motion recognition.

Define the **output type and value**. As a result of the different types, switchable lights (1 bit), dimmer (1 Byte 0-100%), scenarios (1 Byte 0...63 scenario call-up) and other functions can be controlled.

Output type	• 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 1 byte (0...63) scenario call-up • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Output value in the event of motion	e.g. 0 • 1 [depending on the output type]
Output value without motion	e.g. 0 • 1 [depending on the output type]
Output value when blocked	e.g. 0 • 1 [depending on the output type]

Select whether delays can be set via objects and specify the **switching delays**. By setting a **blocking time** after switch-off, you prevent sensors from recognising a switched-off lamp in their detection zone as a temperature change, and sending a motion message.

Delays can be set via objects (in seconds)	No • Yes
Switch on delay (for setting via objects: valid until 1st communication)	0 s • 5 s • 10 s • ... 2 h *(for daylight dependent motion detection: fixed value 0s)*
Switch off delay (for setting via objects: valid until 1st communication)	0 s • 5 s • 10 s • ... 2 h
Blocking time for motion detection after switch off delay in seconds	0...600 ; 2

Set the master's output **sending pattern**.

Sending pattern	• on change • on change to movement • on change to no movement • on change and periodically • on change to movement and periodically • on change to no movement periodically
Cycle *(if sent periodically)*	1s • 5 s • ... 2 h

In addition, you can refer to a **slave signal**, i.e. a signal from an additional motion detector, for controlling purposes.

Use slave signal	No • Yes

The slave device periodically sends a 1 to the bus, as long as a motion is detected. The master receives this at the input object "master: slave message" and evaluates the slave message as an own sensor message.

Furthermore, the master has the possibility of triggering a reset of the slave sending cycle.

Information on setting the slave sending cycle and the cycle reset can be found in chapter *Align communication between master and slave*, page 23.

Set the **object type and value** for the master's slave cycle reset output in the same way, as the cycle reset input for the slave.

Slave cycle reset object type	• 1 bit • 1 byte (0%...100%)
Cycle reset at value	0 • 1 and/or 0...100; 1

The master can be **blocked** via the bus.

Use block	No • **Yes**
Analysis of the blocking object	• at value 1: block | at value 0: release • at value 0: block | at value 1: release
Value prior to first communication	0 • 1
Output pattern	
On block	• do not send anything • Send value
For release	• as for transmission pattern • send current value immediately

6.3.2. Align communication between master and slave

Sending cycle slave - switch-off delay master

Set the slave's **sending cycle** shorter than the master's switch-off delay. Thereby it is ensured that the master does not perform a switch-off action, while the slave is still detecting a motion.

Slave cycle reset

The cycle reset for the slave is required, if a master switch action by the "master: central off" object was triggered.

When the master performs a switch-off action, it simultaneously sends a message to the bus via the "master: slave cycle reset". . This message can be received by the slave via the "slave: cycle reset" in order to *immediately* send a message to the bus in the event of a motion detection. The master receives the motion message without having to wait for the next slave transmission cycle.

Please note that object type and value for the slave's cycle reset input and the master's cycle reset output must be set the same.

Application Example:

A person steps into a corridor, the master recognises this movement and switches on the corridor lighting. When leaving the corridor, the person wants to switch off the light using a switch.

However, in the meantime a second person has entered the corridor who is detected by a slave. This person would be in darkness and would have to wait for the slave's next transmission cycle before the light would be switched on again.

To prevent this, the switch command is connected to the "master: central off" object. As a result, the master sends a cycle reset command to the slave if the light is switched off manually. In the present example, the master would immediately switch the light back on.

6.4. Light control

For light control, the **Sensor Sewi KNX L-Pr** detects the brightness in the room. Activate the light control.

Use control	No • Yes

Set, in which cases the **data** received via object for setpoint value, setpoint value-actual difference, dimming increment and times are to be retained. Please note that the setting "After power supply restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first communication.

Maintain the	
data received via object for setpoint, setpoint-actual difference, dimming increment and times	• never • after power supply restoration • after power supply restoration and programming

Set the **setpoint value for the brightness in the room** and specify whether, besides the dimming information defined below, a switching object should also be sent.

Setpoint value in Lux	0...60000; 500
Send switching object	No • Yes

Specify, whether the light control **is activated by movement and/or by a start/stop object**. For a regulation by movement, the device's internal motion detector is analysed.

Set the object evaluation and the object value prior to the first communication. Define, for how many seconds the regulation is to continue to run after the end of the movement.

At the end of the regulation, either "nothing" (status remains unchanged), an on or off command (via the activated switching object) or a dim value can be sent.

Regulation starts on	• movement • reception of a start/stop-object • reception of a start/stop-object or movement
Regulation stops on	• movement • reception of a start/stop-object • reception of a start/stop-object or movement
Object evaluation	• 1 = start | 0 = stop • 0 = start | 1 = stop
Object value prior to initial communication	0 • 1
Stop delay in seconds after the movement has ended	0...1800; 120
Reaction to stop	• send nothing • send off command • send on command • send value
Value in %	0...100

Set, at which deviation from the setpoint value a **dim command is to be sent**. Specify the **dimming increment** and the **repetition cycle** for the dim command. Define, up to which **response value** the dim actuator sends a brighter or darker command. On the one hand, this defines the range of use for the lamp, on the other hand, once the minimum or maximum value has been reached, no unnecessary messages are sent to the bus.

Send the dim command, if	• the actual value deviates from the setpoint value by more than X% •the actual value deviates from the setpoint value by more than X Lux
Target / actual difference in % *(for a deviation in %)*	1...100; 20
Target / actual difference in Lux *(for a deviation in Lux)*	1...2500; 100
Dimmer increments	100.00% • 50.00% • 25.00% • 12.5% • 6.25% • 3.13% • 1.56%
Repetition of the dim command in seconds	1...600; 6
Dim brighter with response value in %	1...100
Dim darker with response value in %	0...99

The light regulation can be **interrupted during switching or dimming** by response objects, i.e. nothing else is transmitted via the dim-output. This results in the manual light operation having priority.

Set, which objects will trigger interruption and when the regulation is to be continued.

Use interruptions	No • **Yes**
Interrupt regulation when	
Reception from response switching object	No • Yes
Reception from response dimming object	No • Yes
Continue regulation	• after a waiting period • at movement after waiting period • at object reception after waiting period • at object reception or after waiting period • at movement after object reception • at object reception or movement after waiting period
Waiting period in seconds	5...72000 *(Standard value depending on the setting of "continue regulation")*
Object value	0 • 1 • 0 or 1

Note: If the criteria for the continuation of the regulation are fulfilled, the regulation, however, has just been stopped by an object or is blocked, then the end of the interruption has no effect on the behaviour of the light.

The light regulation can be **blocked** via the bus. In contrast to the interruption, when blocking, a switching command or brightness value can be sent. Upon release, the output behaviour follows the rule.

Use block	No • **Yes**
Analysis of the blocking object	• at value 1: block | at value 0: release • at value 0: block | at value 1: release
Value prior to initial communication	0 • 1
Output pattern	
On block	• send nothing • send off command • send on command • send value

6.5. Brightness Measurement

The **Sensor Sewi KNX L-Pr** detects the brightness in rooms, for example for controlling lights.

Set the **sending pattern** for the measured brightness.

Sending pattern	• never • periodically • on change • on change and periodically

at and above change in % *(if sent on change)*	1 ... 100; 20
Send cycle *(if sent periodically)*	5 s ... 2 h

The brightness reading can be **corrected** in order to compensate for a dull or bright point of installation for the sensor.

Use reading correction	No • Yes

Set, in which cases the correction factor received via object is to be retained. Please note that the setting "After power supply restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first communication (setting via objects is ignored).
Specify the starting correction factor.

Maintain the	
correction factor received via communication object	• never • after power supply restoration • after power supply restoration and programming
Start correction factor in 0.001 valid till first communication	1 ... 10000; 1000

Examples:
For a factor of 1.234 the parameter value is 1234.
For a factor of 0.789 the parameter value is 789.
For a factor of 1.2 and a reading of 1000 Lux the transmitted value is 1200 Lux.

6.6. Brightness threshold values

Activate the required brightness threshold value. The menus for setting the threshold values are displayed.

Threshold value 1/2/3/4	No • Yes

6.6.1. Threshold value 1/2/3/4

Threshold value

Set, in which cases threshold values and delay times received are to be kept per object. The parameter is only taken into consideration if the specification/ setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

Maintain the	
threshold values and delays received via communication objects	• never • after power supply restoration • after power supply restoration and programming

Select whether the threshold value is to be specified per parameter or via a communication object.

Threshold value setpoint using	Parameter • Communications object

When the **threshold value per parameter** is specified, then the value is set.

Threshold value in kLux	1000 … 150000; 60000

When the **threshold value per communication object** is specified, the starting value, object value limit and type of change to the threshold value are then set.

Start threshold value in Lux valid until first call	1000 … 150000; 60000
Object value limit (min.) in Lux	1000 … 150000
Object value limit (max.) in Lux	1000 … 150000
Type of threshold change	Absolute value • Increase/decrease
Increment in Lux *(upon increase/decrease change)*	1000 • 2000 • 5000 • 10000 • 20000

With both of the methods for specifying the threshold values the hysteresis is set.

Hysteresis setting	in % • absolute
Hysteresis in % of the threshold value *(for setting in %)*	0 … 100; 50
Hysteresis in Lux *(for absolute setting)*	0 … 150000; 30000

Switching output

Define which value the output transmits if the threshold value is exceeded or undercut. Set the delay for the switching and in which cases the switch output transmits.

When the following conditions apply, the output is (LV = Threshold value)	• GW above = 1 | GW - Hyst. below = 0 • GW above = 0 | GW - Hyst. below = 1 • GW below = 1 | GW + Hyst. above = 0 • GW below = 0 | GW + Hyst. above = 1
Delays can be set via objects (in seconds)	No • Yes
Delay from 0 to 1	none • 1 s … 2 h
Delay from 1 to 0	none • 1 s … 2 h

Switching output sends	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle *(if sent periodically)*	5 s ... 2 h

Block

If necessary, activate the switching output block and set what a 1 or 0 at the block entry means and what happens in the event of a block.

Use switching output block	No • Yes
Analysis of the blocking object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first call	0 • 1
Action when locking	• Do not send message • send 0 • send 1
Action upon release (with 2 seconds release delay)	[Dependent on the "Switching output sends" setting]

The behaviour of the switching output on release is dependent on the value of the parameter "Switching output sends" (see "Switching output")

Switching output sends on change	do not send message • Status object/s send/s
Switching output sends on change to 1	do not send message • If switching output = 1 ➔ send 1
Switching output sends on change to 0	do not send message •
	If switching output = 0 ➔ send 0
Switching output sends on change and periodically	Send switching output status
Switching output sends on change to 1 and periodically	If switching output = 1 ➔send 1
Switching output sends on change to 0 and periodically	If switching output = 0 ➔send 0

6.7. Night

If necessary, activate the night recognition.

Use night recognition	No • **Yes**

Set, in which cases delay times received are to be kept per object. The parameter is only taken into consideration if the setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

Maintain the	
delays received via communication objects	• never • after power supply restoration • after power supply restoration and programming

Specify below which brightness the device should recognise "night" and with which hysteresis this is to be outputted.

Night is recognised below Lux	1 ... 1000; 10
Hysteresis in Lux	0 ... 500; 5

Set the delay for the switching and in which cases the switch output sends and which value is output at night.

Delays can be set via objects (in seconds)	No • Yes
Switching delay on night	none • 1 s ... 2 h
Switching delay on day	none • 1 s ... 2 h
Switching output sends	• on change • on change to night • on change to day • on change and periodically • on change to night and periodically • on change to day and periodically
Send cycle *(if sent periodically)*	5 s ... 2 h
Object value at night	0 • 1

6.8. Computer

Activate the multi-functional computer, with which the input data can be changed by calculation, querying a condition or converting the data point type. The menus for the further setting of the computer are then displayed.

Computer 1/2/3/4/5/6/7/8	No • Yes

6.8.1. Computer 1-8

Set, in which cases input values received are to be kept per object. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

Maintain the	
input values received via communication objects	• never • after power supply restoration • after power supply restoration and programming

Select the function set the input mode and starting values for input 1 and input 2.

Function (I = Input)	• Prerequisite: E1 = E2 • Prerequisite: E1 > E2 • Prerequisite: E1 >= E2 • Prerequisite: E1 < E2 • Prerequisite: E1 <= E2 • Prerequisite: E1 - E2 >= E3 • Prerequisite: E2 - E1 >= E3 • Prerequisite: E1 - E2 amount >= E3 • Calculation: E1 + E2 • Calculation: E1 - E2 • Calculation: E2 - E1 • Calculation: E1 - E2 Amount • Calculation: Output 1 = E1 × X + Y | Output 2 = E2 × X + Y | • Transformation: General
Tolerance for comparison *(in the case of prerequisite E1 = E2)*	0 ... 4,294,967,295
Input type	[Selection options depending on the function] • 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Starting value E1 / E2 / E3	[Input range depending on the type of input]

Prerequisites

When querying the prerequisites set the output type and output values at different statuses:

Output type	• 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Output value *(if applicable output value A1 / A2)*	
if the condition is met	0 [Input range depending on the type of output]
if the condition is not met	0 [Input range depending on the type of output]
if the monitoring time period is exceeded	0 [Input range depending on the type of output]
if blocked	0 [Input range depending on the type of output]

Set the output send pattern.

Output sends	• on change • on change and after reset • on change and periodically • when receiving an input object • when receiving an input object and periodically
Type of change *(is only sent if "on change" is selected)*	• on each change • on change to condition met • on change to condition not met
Send cycle *(if sent periodically)*	5 s ... 2 h; 10 s

Set the text to be displayed for conditions met / not met.

Text if the condition is met	[Free text max. 14 chars.]
Text if the condition is not met	[Free text max. 14 chars.]

If applicable set the send delays.

Send delay in the event of change to the condition is met	none • 1 s • ... • 2 h
Send delay in the event of change to the condition is not met	none • 1 s • ... • 2 h

Calculations and transformation

For calculations and transformations set the output values to the various conditions:

Output value (if applicable A1 / A2)	
if the monitoring time period is exceeded	0 [Input range depending on the type of output]
if blocked	0 [Input range depending on the type of output]

Set the output send pattern.

Output sends	• on change • on change and after reset • on change and periodically • when receiving an input object • when receiving an input object and periodically
on change of *(only if calculations are transmitted for changes)*	1 ... [Input range depending on the type of input]
Send cycle *(if sent periodically)*	5 s ... 2 h; 10 s

For **Calculations of the form output 1 = E1 × X + Y | output 2 = E2 × X +Y** define the variables X and Y. The variables can have a positive or negative sign, 9 digits before and 9 digits after the decimal point.

Formula for output A1: A1 = E1 × X + Y	
X	1.00 [free input]
Y	0.00 [free input]
Formula for output A2: A2 = E2 × X + Y	
X	1.00 [free input]
Y	0.00 [free input]

Further settings for all formulas

If necessary, activate the input monitoring. Set which inputs are to be monitored, at which intervals the inputs are to be monitored and what value the "monitoring status" should have, if the monitoring period is exceeded without feedback.

Use input monitoring	No • Yes
Monitoring of	• E1 • E2 • E3 • E1 and E2 • E1 and E3 • E2 and E3 • E1 and E2 and E3 [depending on the function]

Monitoring period	5 s • ... • 2 h; 1 min
Value of the object "monitoring status" if period is exceeded	0 • 1

If necessary, activate the computer block and set what a 1 or 0 at the block entry means and what happens in the event of a block.

Use block	No • Yes
Analysis of the blocking object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Value before first call	0 • 1
Output pattern On block	• do not send anything • send value
On release	• as send pattern [see above] • send current value immediately

6.9. Logic

The device has 16 logic inputs, eight AND and eight OR logic gates.

Activate the logic inputs and assign object values up to first call.

Use logic inputs	Yes • No
Object value prior to first call for:	
- Logic input 1	0 • 1
- Logic input ...	0 • 1
- Logic input 16	0 • 1

Activate the required logic outputs.

AND logic

AND logic 1	not active • active
AND logic ...	not active • active
AND logic 8	not active • active

OR logic

OR logic 1	not active • active
OR logic ...	not active • active
OR logic 8	not active • active

6.9.1. AND logic 1-8 and OR logic outputs 1-8

The same setting options are available for AND and OR logic.

Each logic output may transmit one 1 bit or two 8 bit objects. Determine what the out put should send if logic = 1 and = 0.

1. / 2. / 3. / 4. Input	• do not use - Logic inputs 1...16 - Logic inputs 1...16 inverted • all switching events that the device provides (see *Connection inputs of the AND/OR logic*)
Output type	• a 1-Bit-object • two 8-bit objects

If the **output type is a 1-bit object**, set the output values for the various conditions.

Output value if logic = 1	1 • 0
Output value if logic = 0	1 • 0
Output value If block is active	1 • 0
Output value if monitoring period is exceeded	1 • 0

If the **output type is two 8-bit objects**, set the type of object and the output values for the various conditions.

Object type	• Value (0…255) • Percent (0…100%) • Angle (0…360°) • Scene call-up (0…127)
Output value object A if logic = 1	0 … 255 / 100% / 360° / 127; 1
Output value object B if logic = 1	0 … 255 / 100% / 360° / 127; 1
Output value object A if logic = 0	0 … 255 / 100% / 360° / 127; 0
Output value object B if logic = 0	0 … 255 / 100% / 360° / 127; 0
Output value object A if block is active	0 … 255 / 100% / 360° / 127; 0
Output value object B if block is active	0 … 255 / 100% / 360° / 127; 0
Output value object A if monitoring period is exceeded	0 … 255 / 100% / 360° / 127; 0
Output value object B if monitoring period is exceeded	0 … 255 / 100% / 360° / 127; 0

Set the output send pattern.

Send pattern	• on change of logic • on change of logic to 1 • on change of logic to 0 • on change of logic and periodically • on change of logic to 1 and periodically • on change of logic to 0 and periodically • on change of logic+object receipt • on change of logic+object receipt and periodically
Send cycle *(if sent periodically)*	5 s • 10 s • ... • 2 h

Block

If necessary, activate the block for the logic output and set what a 1 or 0 at the block input means and what happens in the event of a block.

Use block	No • Yes
Analysis of the blocking object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first call	0 • 1
Output pattern On block	• Do not send message • Transmit block value [see above, Output value if blocking active]
On release (with 2 seconds release delay)	[send value for current logic status]

Monitoring

If necessary, activate the input monitoring. Set which inputs are to be monitored, at which intervals the inputs are to be monitored and what value the "monitoring status" should have, if the monitoring period is exceeded without a feedback being given.

Use input monitoring	No • Yes
Input monitoring	• 1 • 2 • 3 • 4 • 1 + 2 • 1 + 3 • 1 + 4 • 2 + 3 • 2 + 4 • 3 + 4 • 1 + 2 + 3 • 1 + 2 + 4 • 1 + 3 + 4 • 2 + 3 + 4 • 1 + 2 + 3 + 4
Monitoring period	5 s • ... • 2 h; 1 min
Output behaviour on exceeding the monitoring time	• Do not send message • Send value exceeding [= value of the parameter "monitoring period"]

6.9.2. AND logic connection inputs

Do not use

Logic input 1
Logic input 1 inverted
Logic input 2
Logic input 2 inverted
Logic input 3
Logic input 3 inverted
Logic input 4
Logic input 4 inverted
Logic input 5
Logic input 5 inverted
Logic input 6
Logic input 6 inverted
Logic input 7
Logic input 7 inverted
Logic input 8
Logic input 8 inverted
Logic input 9
Logic input 9 inverted
Logic input 10
Logic input 10 inverted
Logic input 11
Logic input 11 inverted
Logic input 12
Logic input 12 inverted
Logic input 13
Logic input 13 inverted
Logic input 14
Logic input 14 inverted
Logic input 15
Logic input 15 inverted
Logic input 16
Logic input 16 inverted
Switching output night
Switching output night inverted
Brightness sensor switching output 1
Brightness sensor switching output 1 inverted
Brightness sensor switching output 2
Brightness sensor switching output 2 inverted
Brightness sensor switching output 3
Brightness sensor switching output 3 inverted
Brightness sensor switching output 4
Brightness sensor switching output 4 inverted
Motion detector test output active
Motion detector test output inactive
Motion detector test output active
Motion detector test output inactive
Motion detector slave output active
Motion detector slave output inactive

Motion detector master 1 output active
Motion detector master 1 output inactive
Motion detector master 2 output active
Motion detector master 2 output inactive
Motion detector master 3 output active
Motion detector master 3 output inactive
Motion detector master 4 output active
Motion detector master 4 output inactive

6.9.3. Connection inputs of the OR logic

The OR logic connection inputs correspond to those of the AND logic. In addition, the following inputs are available for the OR logic:

Switching output AND logic 1
Switching output AND logic 1 inverted
Switching output AND logic 2
Switching output AND logic 2 inverted
Switching output AND logic 3
Switching output AND logic 3 inverted
Switching output AND logic 4
Switching output AND logic 4 inverted
Switching output AND logic 5
Switching output AND logic 5 inverted
Switching output AND logic 6
Switching output AND logic 6 inverted
Switching output AND logic 7
Switching output AND logic 7 inverted
Switching output AND logic 8
Switching output AND logic 8 inverted

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