



LSU-01 / LSU-01A

General

The light sensor LSU-01 is universal suitable for the daylight detection and controlling for inside and outside applications. The basis from the light sensor is a digital chip with a 16 Bit resolution (65535 steps) and an optical correction lens, which **adjusts the measured light** to the sensation of human eyes (visible light for humans). Since different requirements call for

different individual solutions, five operation modes have been integrated in the LSU-01. Therefore, the sensor may function as a outside and inside light, light controlling, and light encoder. At the same time is the successor type for older sensors which are no longer available.

Operating mode preselecting

The mode should be used per DIP-switch before connection of the sensors. DIP switch 1-3 is used for.

DIP1	DIP2	DIP3	Mode	Description
OFF	OFF	OFF	LSR-BW	Light control sensor 8 nominal value, 8 constants
ON	OFF	OFF	LSR-01	Light control sensor 4 nominal value
OFF	ON	OFF	Res.	Light control sensor
ON	ON	OFF	LS-16BIT	The measured light value is transmitted in a 16 Bit-resolution
OFF	OFF	ON	LST-01	Light sensor to sky light capture in conjunction with our ZTLS

Mode: LSR-BW

DIP- switch 1-3: OFF, OFF, OFF

This following module is used to be created in the Programmdesigner software: **LSU-01-LSR-BW**

The sensor has been conceived for interior measurement (artificial light measurement) and has a resolution of 10 bit (1024 steps). Therewith a constant light control is viable easy and comfortable. 8 brightness values are saveable individually that the regulator tracks autonomous. Will the desired value become corrected manually and not changed for 10 seconds

a temporary takeover of this value as a actual desired value is done. The brightness remains constant in this situation. Herewith a aging of the fluorescent material will be compensated. The particulate light level can be invoked by radio remote controllers or by the building automation system (ISYGLT).

Mode: LSR-01

DIP-switch 1-3: ON, OFF, OFF

This following module is used to be created in the Programmdesigner software: **LSU-01-LSR-01**

At the mode functions 4 regulating set point value. For example in a gymnasium for the occupancy can be save and followed access "training", match", "tournament" or "cleaning light". The brightness are controlled by the saved settings. The light controller can learn a target value very easily. Simply switch the controller to manual mode. Now set the desired brightness using two keys (brighter, darker) or a potentiometer. If certain luminance's are specified, you can check the setting with a luxmeter. If the lighting is set correctly, the respective target value is taught in by holding down the programming key (approx. 3s). (= virtual receipt at the sensor who already must be connected the program with a key) Once you switch the controller to automatic,

it will keep this learnt target value constant. The controller's reaction times to changes in brightness can be set separately for the directions "brighter" and "darker". (Order: SETLSR). As same applications of the screen is no illumination effect viewable, for that reason a threshold value (e. g. 20%), can be defined at the controller who switches the illuminant off completely. After repeated switching on and off the light controller independently learns the correct switching on values for the respective existing brightness (before switching on), thus avoiding long control response times after switching on the illumination circuit. If no switching on values have been learnt yet, the controller always switches the lighting ON to 100% and then darkens gradually.

Mode: LS-16BIT

DIP-switch 1-3: ON, ON, OFF

This following module is used to be created in the Programmdesigner software: **LSU-01-LS-16BIT**

The sensor comprehend the brightness and is able to send data in 7 different measurement ranges at readjustment in form of 16 Bit values. A further processing of the brightness values won't be done in the sensor.

Measurement range selection

Value of the output	Measurement range (about depend on setup and optics)	Value range to the master
Ax # 0 or > 6	0 - 70.000 lx	0 - 65535
Ax # 1	0 - 14.000 lx	0 - 65535
Ax # 2	0 - 7.000 lx	0 - 65535
Ax # 3	0 - 1.400 lx	0 - 65535
Ax # 4	0 - 700 lx	0 - 65535
Ax # 5	0 - 350 lx	0 - 65535
Ax # 6	0 - 700.000 lx	0 - 65535

Mode: LST-01

DIP-switch 1-3: OFF, OFF, ON

This following module is used to be created in the Programmdesigner software: **ZTLS-LST-01**

In this operating mode the sensor serves evaluation of the sky light. Four of this sensor resulting in one set which can be used as ZTLS. The single light sensors provides the system with the current light values of the four sky directions. The 16 Bit values for South, West, North and East are provided as system variables which can be evaluated in the master module. Through a fix internal address a setting of a module address is not necessary. By DIP switch the setting of the sky directions and measuring range is done.

*Setting of sky directions
(respectively only one DIP switch is ON)*

DIP switches	Sky directions
DIP 7 ON	West
DIP 8 ON	South
DIP 9 ON	East
DIP 10 ON	North

*Setting of measuring range by using the
DIP switches 4-6 (binary value)*

DIP-4	DIP-5	DIP-6	Measuring range scaled on 16 Bit (0...65535)
OFF	OFF	OFF	0...70000 lux
OFF	OFF	ON	0...14000 lux
OFF	ON	OFF	0...7000 lux
OFF	ON	ON	0...1400 lux
ON	OFF	OFF	0...700 lux
ON	OFF	ON	0...350 lux
ON	ON	OFF	0...700000 lux

Function displays

- 1 flashing yellow LED indicates the communication with the master via subnet

Connections

- 1 connection for the subnet (BUS A and BUS B, RS-485)
- 1 connection for the operating voltage (Ub, 0V)

Design

- Round, diameter 51mm, for flush mounted boxes, installation depth 23mm
 - Under plaster in switch program RAL 9010 80x80mm
 - AP model at light gray RAL7035 plastic box LxBxT 80x82x56mm

Technical data

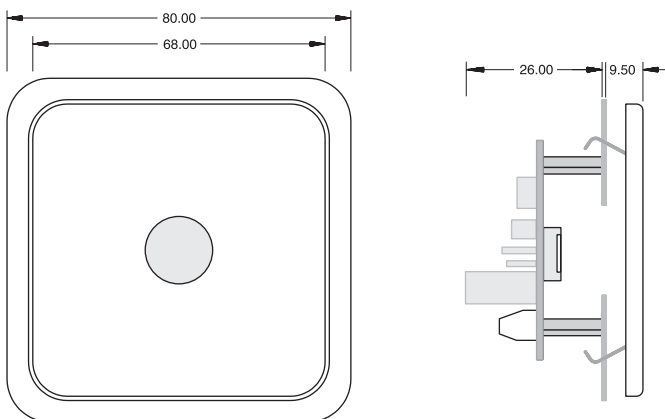
Type	LSU-01	LSU-01A
Art. Nr.	80085005	80085015
Operating voltage	12-35V DC or 12 - 27V AC	
Current consumption	max. 30mA	

LSU-01	Continued
Dimensions	DxH 51x27mm (without cover) Under plaster-cover 80x80mm AP-casing LxBxT 82x80x57mm
Weight	45g without front plate
Connection	Screw terminals 1,5mm ² for BUS
Operating temperature	-10...+60°C
Storage temperature	-25...+70°C
Humidity	0...85 % r. F. non condensing
Protection grade	IP 00 without casing, under plaster-model IP20, AP-model IP54
Immunity	Conform EN61000-6-1, EN61000-6-2, EN301 489-3 + EN300220-3 +
Interference emission	EN300220-1
CE sign	Yes

Terminal assignment

≅ Ub	operating voltage
0V	operating voltage
A	Subnet (BUS A RS-485)
B	Subnet (BUS B RS-485)

View



Wiring diagram

