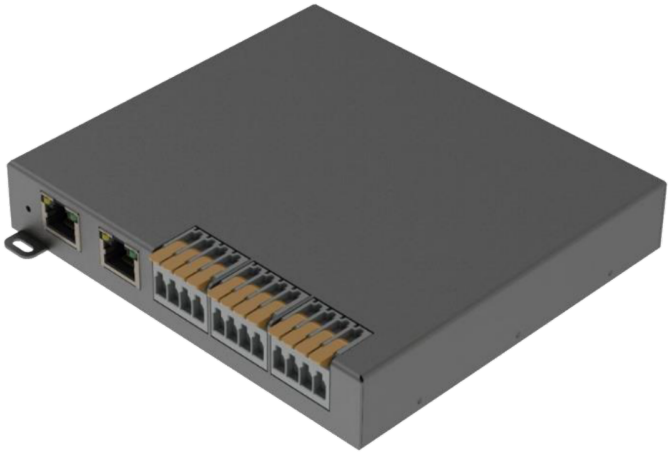
MICROSENS

Data Sheet
Smart Lighting Controller



Made in Germany

Description

The MICROSENS Smart Lighting Controller is designed to drive and control up to six LED lights. As further function the device transfers environmental data captured from up to six sensor devices like MICROSENS Smart Sensor. Typical areas of applications are intelligent control of light and brightness in various environments like offices, hotels, hospitals, corridors and many more.

Multiple Smart Lighting Controllers can be managed by the MICROSENS microRTS or Smart Director App running on a MICROSENS G6 Switch. Optionally, the Smart Lighting Controller collects environmental data like brightness, motion or presence, room temperature, humidity and air quality from up to two connected sensor devices. The sensor data are transferred via the network to the Smart Director App, can be published as human readable output via MQTT or works integrated in the microRTS.

As a member of the MICROSENS Smart Building Solutions family, the Smart Lighting Controller is an IP networking device which is supplied through the IT network with Power over Ethernet voltage (PoE). In the newest version it is able to operate as standalone PoE LED driver, which can be configured via external tools and afterwards be controlled via MQTT.

Features

- Standalone PoE++ LED Driver with Dimming
- Selectable dimming functions for brightness control through Smart Director or via MQTT commands
- Manual Dimming, setting of Dimming-Level
- Communicates with up to six connected sensor device
- MQTT integrated (publish & subscribe)
- Measurement of LED power consumption

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Specifications

Smart Lighting Controller

- Dimming of LED light
- Connection with MICROSENS Smart Sensor
- Collection of environmental data provided by
  - MICROSENS Smart Sensor: motion, brightness, temperature, humidity
- Measurement and collection of power consumption
- Automatic calibration of maximum power for the connected LED light
- Firmware update over the network
- Supplied over IT network via PoE++
- Supports IPv6

Connectors

Uplink

- 2x 10/100Base-TX (RJ-45, shielded)

LED Interface

- 3x 4 pole-clamp connector

Smart Sensor Interface

- RJ-45 (shielded)
- Power supply for connected sensor(s)

Mounting

- Flat metal case including 2 fastening lugs with oblong hole for 3 mm mounting screws
- Strain relief lug for connector cable to LED light
- 3 SLC’s can be combined for mounting into 19" racks requiring 1U vertical space

Signal LEDs (RJ45 Ports)

- Network Port
  - Yellow: Waiting for TFTP Connection / Heartbeat
  - Green: TFTP Link established / Link Up
- Sensor Port
  - Yellow: TFTP Error / Sent Packet to Sensor
  - Green: TFTP Traffic / Receive Packet from Sensor

Power Supply

- 1x 10/100Base-TX, PoE++ (PD, max. 90 W) Alternative A (MDI) only – 802.3 bt

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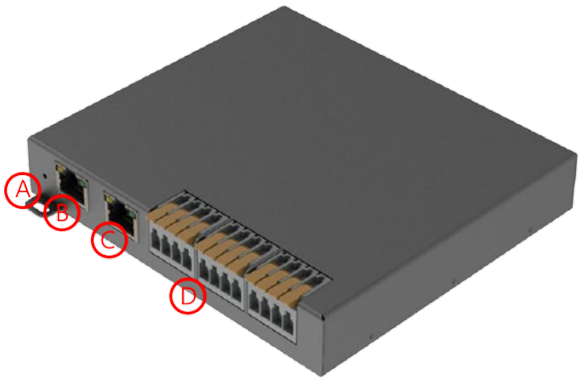
Interfaces



A	Rest Button
B	Network UpLink Port
C	Smart Sensor Port
D	LED Light Connector

Technical Specifications

Twisted-Pair Port

Type

- Fast Ethernet, Dual Speed 10/100Base-TX

Connector

- 1 x RJ-45 port, shielded

Cable

- Twisted-Pair cable, Category 5e impedance 100 Ohm, typical recommended length up to 15 m

Power-Over-Ethernet

- Powered Device (PD),
  IEEE 802.3bt Class 8 (41,2 V), Up to 90 W,
  also Supported Classes are 3,4 and 6

Cable length

- <10 m Cat. 5 AWG 26, >10 m Cat. 5 AWG 24

Sensor Port

Type

- MICROSENS Smart Sensor compatible

Connector

- 1 x RJ-45 port, shielded

Approved sensor

- MICROSENS Smart Sensor MS660222

Number

- up to 6 Sensors (MS660222)

Bus-termination required (MS660309)

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LED Interface

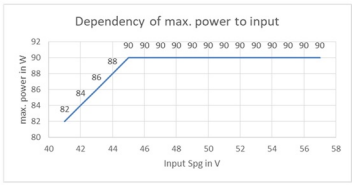
Type

- Controlled current output

Output

- Max. 90 W global consumption, max. 1 A / Channel, Max. 50 W over one Channel, 20..50V DC

Limiting factor	U	max I	max P	
max. P= 90W	57	1,578947	90	I=max. P/U
	56	1,607143	90	
	55	1,636364	90	
	54	1,666667	90	
	53	1,698113	90	
	52	1,730769	90	
	51	1,764706	90	
	50	1,8	90	
	49	1,836735	90	
	48	1,875	90	
	47	1,914894	90	
	46	1,956522	90	
	45	2	90	
max. I = 2A	44	2	88	P=U*max I
	43	2	86	
	42	2	84	
	41	2	82	



The maximum output power available at the LED interface may be decreased by an increasing number of attached MICROSENS sensors; typical 1 W/sensor

Connector

- 3x WAGO push-in CLAMP®, 4 poles, 0.2 – 4.0 mm2 (11 – 24 AWG)

Cable length

- Max. 3 m between LED and devices connector

The Smart Lighting Controller must be disconnected from its source before connecting the lamp. Otherwise the lamp can be harmed.

Standards

CE: 2014/35/EU (EMC Richtlinie), 2011/65/EU (RoHS Richtlinie)
REACH: 1907/2006/EC
Safety: EN 60950-1
EMC Emissions: EN 55015
EMC Immunity: EN 61547

Interfaces

Rest button (internal)

- Short press (<2 sec.) = reset;
- Long press (>2 sec.) = Update mode;
- if no update file is received within 20 seconds device starts normally

Mechanical

Dimensions

- 141 x 127 x 24 mm (L x W x H, without connectors)

Weight

- Approx. 600 g

Protection class

- IP30

Delivery / Contents

Package unit

- 1 pc.

Contents

- 1x Smart Lighting Controller

Environmental Conditions

Temperature

- Typical: 25 °C
- Operation range: 0..+60 °C
- Storage: -20..+85 °C

Humidity

- 10..90%, non-condensing

Accuracy of Power Measurement

Range

- 0..50 Watt

Failure

- 4% of End of Scale Failure (up to 2 Watt)

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The Smart Device uses IPv6 protocol for communication, IPv4 protocol is not supported.

The supply voltage has to be abouve the needed Led voltage.

We recommend grounding the positive power supply conductor for maximum electrical protection as described below. In case of a short circuit of the LED output to other voltages, the risk of a permanent damage of the Device is reduced. Not following this recommendation increases the risk of a irreparable damage in such cases.

Line Losses

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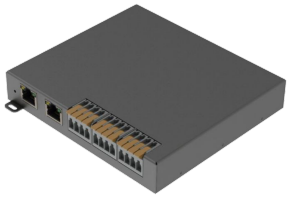
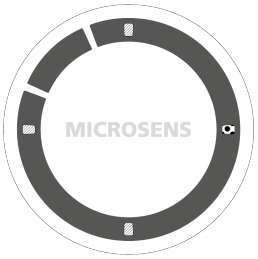
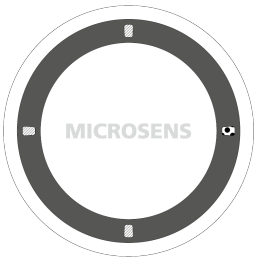
Ordering Information

	Description	Article-No.
	**Smart Lighting Controller** (compatible with MICROSENS Sensors) Smart Lighting Controller for NeuronGrid Sensors (up to 6 Sensors) Network powered controller for LED lighting Desktop-Format, 1x RJ-45 jack for 10/100Base-TX, PoE++ PD input, max.90 W, 1x RJ-45 jack for MICROSENS Smart Sensor MS660222, 6x Current Output for LED Light	**MS660104M**

Accessories

	Description	Article-No.
	Smart Sensor NeuronGrid Integrated Sensor for Light Level, Motion, Temperature and Humidity; supply via bus, 2x RJ-45 jack for bus (NeuronGrid interface compatible) compatible with MS660301M-V4, MS660103M and MS660104M.	**MS660222**
	Smart Radar Sensor for CSLC and SLC's (compatible with MICROSENS Central Smart Lighting Controller MS660301M-V4, Smart Lighting Controller MS660103M and MS660104M)	
	**Smart Radar Sensor (Bluetooth Beacon)** Integrated Sensor for Light Level, Motion, Temperature and Humidity, incl. Bluetooth Beacon; supply via bus, 2x RJ-45 jack for bus; compatible with MS660301M-V4, MS660103M and MS660104M	**MS660230**
	**Smart Radar Sensor** Integrated Sensor for Light Level, Motion, Temperature and Humidity; supply via bus, 2x RJ-45 jack for bus; compatible with MS660301M-V4, MS660103M and MS660104M	**MS660230-1**

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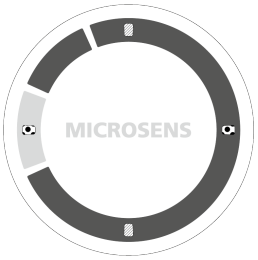
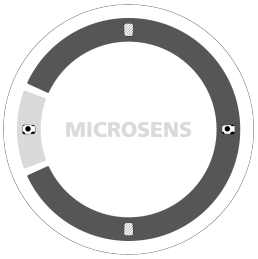
	Description	Article-No.
	**Smart Radar Sensor (AQI + BLE Beacon)** Integrated Sensor for Light Level, Motion, Temperature and Humidity, incl. VOC Sensor and Bluetooth Beacon; supply via bus, 2x RJ-45 jack for bus; compatible with MS660301M-V4, MS660103M and MS660104M	**MS660230-2**
	**Smart Radar Sensor (AQI)** Integrated Sensor for Light Level, Motion, Temperature and Humidity, incl. VOC Sensor; supply via bus, 2x RJ-45 jack for bus; compatible with MS660301M-V4, MS660103M and MS660104M	**MS660230-3**
	Smart Matrix Sensor Integrated infrared matrix sensor for room temperature measurement. Additional sensors for ambient light level and humidity. RGB LED indicator. 2x RJ-45 connector (MICROSENS NeuronGrid bus compatible)	**MS660240**
	Smart Sensor Bus Termination plug Termination resistor for Smart Sensor Bus, 100 Ohm, RJ-45 plug	**MS660309**

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