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Made in Czech Republic

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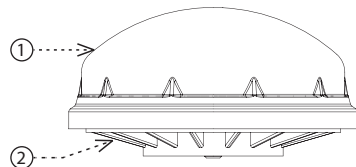
AirSLC-100NB/LWES

Street light controller - LUMAWISE plug

Characteristics

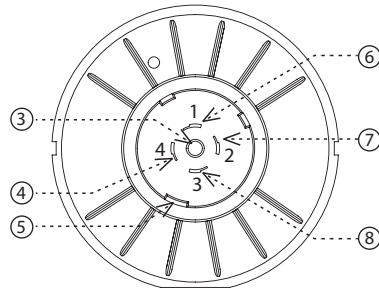
- Used for remote control of the luminaire: ON / OFF / DIMM.
- It informs about the fault of the ballast, light source, connecting wires ...
- Communicates over the wireless LPWAN network NB-IoT.
- Output signal 0 (1) -10V or DALI for direct control of ballast in luminaire.
- Internal digital light intensity sensor, range 5 - 100,000Lx.
- Internal digital temperature sensor in the range -30 ... 70 ° C.
- Supply voltage: 12- 24 V DC.
- Protection IP65, UV resistant, designed for outdoor installation in the LUMAWISE ENDURANCE S.
- Update using the RFAF / USB Service Key.

Description



1. Cover
2. Base
3. Navigation
4. Analog (+)
5. Socket lock
6. Power supply (+)
7. GND
8. DALI (+)

Underside view



Cloud app assignment

It is done in your Smartphone application. Enter the relevant information on the product cover into the application.

Function

When the power is connected, the device sends the initial message containing the measured temperature and light intensity.

Sensor senses temperature and intensity of lighting every 2 minutes. After that, it sends a data message of measured values every 15 minutes.

Function setting (message from server):

- Function AUTOMAT:
 - the on / off is controlled according to the intensity measured by the light sensor
- Function SEMI-AUTOMAT:
 - Switching on / off, the brightness is set according to the set schedule (the schedule can be set by a message from the server)
 - Outside the schedule is set to Auto
- Function MANUAL:
 - Messages from the server can be turned on / off, adjust brightness and interval for sending data messages.

General instructions

Internet of Things (IoT)

- The IOT wireless communications category describes the Low Power Wide Area (LPWA). This technology is designed to provide full-range coverage both inside and outside buildings, energy-saving and low-cost operation of individual devices. The NarrowBand network is available to use this standard.

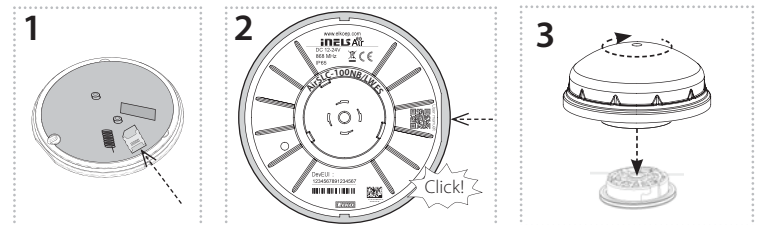
Information about the NarrowBand network

- The network provides two-way communication and the only one to use the licensed LTE band. Our devices allow band 1 (2100MHz), Band 3 (1800MHz), Band 8 (900MHz), Band 5 (850MHz), Band 20 (800MHz) and Band 28 (700MHz).
- It uses this SIM card technology for each device.
- The advantage of NarrowBand is the use of already built-up grids, which ensures sufficient reception outside and inside buildings.
- For more information on this technology, please visit www.vodafone.cz

Caution for proper operation:

- Products are installed according to the wiring diagram given for each product.
- For proper device functionality, it is necessary to have sufficient coverage of the selected network at the installation site.
- At the same time, the device must be registered in the network. Successful device registration on a given network requires a charge for traffic.
- Each network offers different tariff options - it always depends on the number of messages you want to send from your device. Information on these tariffs can be found in the current version of the ELKO EP pricelist.

Assembly



1. Carefully insert nanoSIM (the device must not be energized when inserting or replacing nanoSIM!).
2. Attach the cover to the base - pay attention to the correct rotation. The cover must be mounted flat and properly clipped to maintain its IP65 rating.
3. Attach the receiver to the prepared socket and secure it by turning (see LUMAWISE Endurance S manual for mounting the socket).

Safe handling



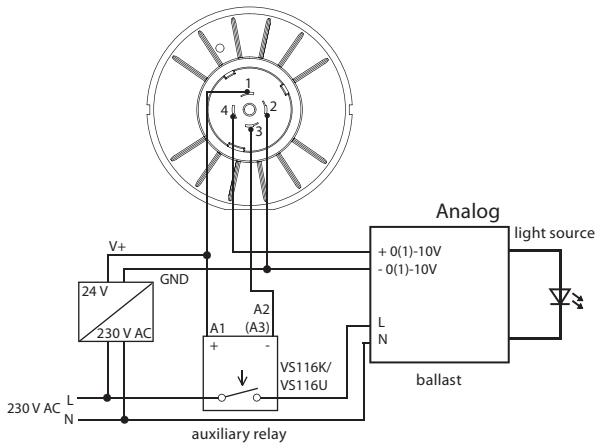
When handling a device unboxed it is important to avoid contact with liquids, avoid unnecessary contact with the components of the device. Do not touch the metal objects inside the unit.

Connection

Connections by TE Connectivity Connector Type:
LUMAWISE Endurance S base, 80mm module
Manufacturer-recommended slot:
LUMAWISE Endurance S receptacle assembly (2213837-1)

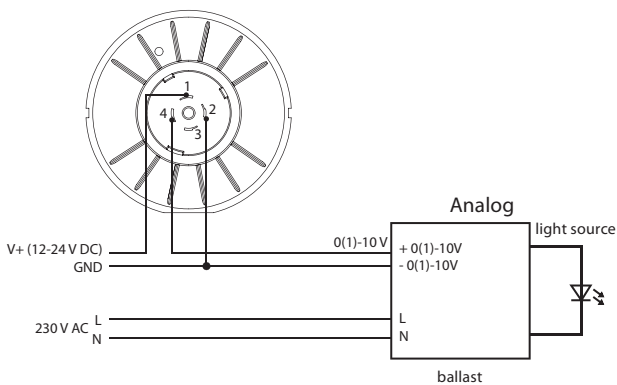
Example connection

Connection 0 (1) -10V (analog) + tripping relay



Description of wiring contacts:
1 - 12/24 V power supply
2 - GND / analog output 0(1) - 10 V (-)
3 - control of an external relay
4 - analog output 0(1)-10 V (+)

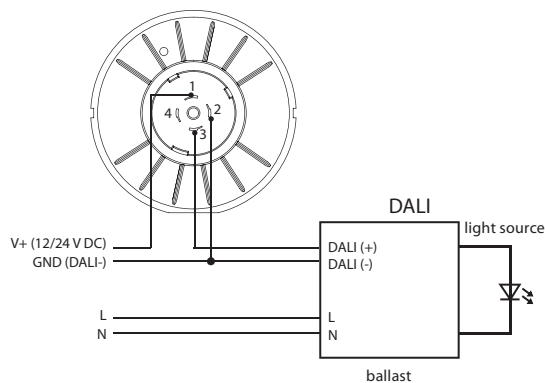
Connection 0 (1) -10V (analog) without relay



In the off state, the analog ballast may light up slightly (depending on gear type).

Connection DALI

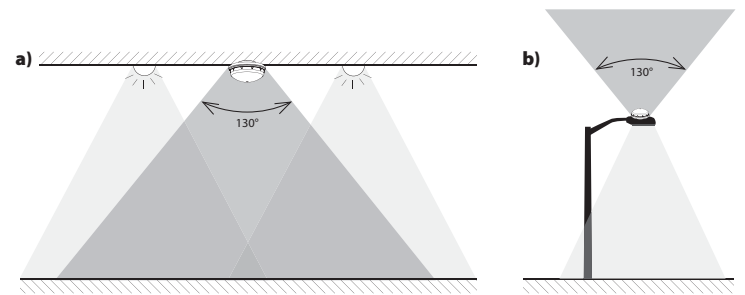
Connection of one DALI light



Description of wiring contacts:
1 - 12/24 V power supply
2 - GND / DALI(-)
3 - DALI(+)

For the management of DALI BUS there is not an exact cable type recommended, but it is important to keep some installation conditions. For DALI BUS lines up to 100 m the recommended min. conductor cross section is 0.5 mm². For management between 100 m -150 m a cross section of 0.75 mm² and more than 150 m the recommended min is 1.5 mm². Management of more than 300 m is not recommended. The voltage drop at the end of the installation may not be greater than 2V.

Placement recommendations



Mounting options

- a) on the ceiling^x
- b) on public lighting

- For the correct operation of the sensor, it is necessary to eliminate all disturbing light sources in the sensed area.
- The recommended working position is vertical.
- Ensure the correct location - see Warning.
- The sensor is suitable for outdoor use. Operating conditions are consistent with conventional chemically non-aggressive environments.
- For proper functionality, the cover guide should be kept clean and uncovered (occasional cleaning of the cover without the use of chemicals).

Inappropriate location

- Places where distortion may occur (the cover must not be illuminated by direct light)
 - below the lamp, where there is a sudden change in lighting intensity (e.g. flashing advertising), etc.
- Very dusty environment.
- In the case of light pipe installation, the weather may be distorted due to bad weather (heavy rain / snow).

^x the height of the receiver location and the colour of the illuminated surface affect the resulting value of the measured illumination

UPLINK

Message	0-14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Notification	IMEI	1	Actual output level	Actual ballast status*	Actual function status											
Heartbeat		2				Temperature[0]	Temperature[1]	Illuminance[0]	Illuminance[1]	Illuminance[2]	Illuminance[3]	Actual downlink counter				
Power on		3	Version FW	Subversion FW	Version FW NarrowBand	Subversion FW NarrowBand	Actual downlink counter									
Configuration confirm		5	0x01													

Note

Actual output level	0 - 100 [%]	
Actual ballast status*	Bit 0 = 1	ballast not responding
	Bit 1 = 1	ballast fault
	Bit 2 = 1	lamp fault
	Bit 3 = 1	high temperature DALI switching element
Actual function status	Bit 0 = 1	Unknown actual time
	Bit 1 = 1	Function MANUAL - timeout overlapped
	Bit 5 - 4	Function: „01“ - AUTOMAT „10“ - SEMI-AUTOMAT „11“ - MANUAL
Temperature[0 - 1]	x [°C * 10]	
Illuminance[0 - 3]	0 - 188000 [lx]	

* DALI only

DOWNLINK

Message	0	1
Control	1	Requested output level

Note

Actual output level	0 - 100 [%]
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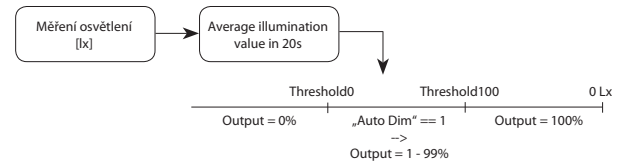
Message	0	1
Status get	2	0xC0

Message	0	1	2	3	4	5	6	7	8	9	10
Configuration	5	Function	Heartbeat period	Initial output level	Ramp	Threshold100	Threshold0	Auto Dim	Manual timeout	Manual timeout value	Manual timeout status

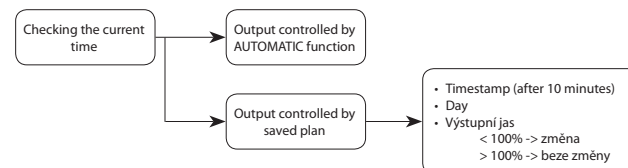
Note

Function	0x01	Function AUTOMAT
	0x02	Function SEMI-AUTOMAT
	0x03	Function MANUAL
Heartbeat period	0 - 127	x [min]
	129 - 255	x - 128 [h]
Initial output level	0 - 100 [%]	
Ramp	0 - 10 [s]	
Threshold100	0 - 255 [lx / 10]	Threshold100 < Threshold0
Threshold0	0 - 255 [lx / 10]	
Auto Dim	0x00	without diming
	0x01	smooth diming
Manual Timeout	1 - 255	x * heartbeat period
Manual Timeout hodnota	0 - 100 [%]	
Manual timeout status	0x00	output from Manual timeout value
	0x01	output from AUTOMAT

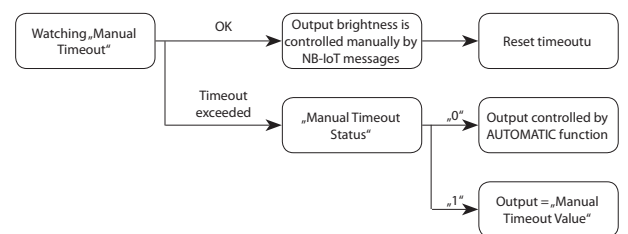
Function AUTOMAT



Function SEMI-AUTOMAT



Function MANUAL



Message	0	1	2	3
Actual time set	6	Time[0] [min]	Time[1] [min]	Day

Note

Time[0 - 1]	0 - 1439 [min]	e.g. 18:20 = 18*60 + 20 = 1100
Day	0x00	Sunday
	0x01	Monday
	0x02	Tuesday
	0x03	Wednesday
	0x04	Thursday
	0x05	Friday
	0x06	Saturday

Message	0	1	2	3	4
Time mark set	7	Time[0] [min]	Time[1] [min]	Day (mask)	Requested output level

Note

Time[0 - 1]	0 - 1439 [min]	10 min, e.g. 18:20 = 18*60 + 20 = 1100
Day (mask)	Bit 0 = 1	Sunday
	Bit 1 = 1	Monday
	Bit 2 = 1	Tuesday
	Bit 3 = 1	Wednesday
	Bit 4 = 1	Thursday
	Bit 5 = 1	Friday
	Bit 6 = 1	Saturday
Requested output level	0 - 100 [%]	

Message	0	1
Time table clear	8	0x00

Message	0	1
Device reset	100	0xE1

Message	0	1 - 4	5 - 8	9 - 12
Counters set	101	Uplink counter[3 - 0]	Downlink counter[3 - 0]	Multicast downlink counter[3 - 0]

Example

Heartbeat period	Time between periodical messages on port 2		
Manual timeout	Time without receiving the message by the device.		
	The manual timeout is set in multiples of the heartbeat period.		
	Heartbeat = 5 min		
	Manual timeout = 2	Manual timeout = 10 minut	
Threshold100 / Threshold0	Enter in lux / 10		
	100% at 20 lux	Threshold100 = 2	
	0% at 300 lux	Threhsold0 = 30	

Technical parameters

	AirSLC-100NB/ LWES/DALI	AirSLC-100NB/ LWES/0-10
Supply voltage:	12 - 24 V DC	
Supply voltage tolerance:	-10 /+15 %	
Standby consumption:	0.5 W	
Consumption max.:	at 1.5 W communication	
Temperature sensor	Measurement of instrument internal temperature	
Range:	-30 .. 70°C	
Accuracy:	±1°C in the range -10°C .. 70°C ±3°C in the range -30°C .. -10°C	
Light sensor		
Scanned Range:	5 - 100 000 Lx	
Detection angle:	130°	
Indication		
- blue LED:	module power supply	
- green LED:	STATUS module	
- red LED:	LPWAN communications	
Inputs		
Communication Interface:	DALI polarized - active (20mA)	Analog 0(1)-10 V (20mA)
External relay:	x	12 / 24 V DC, max. 80 mA
Communication		
Protocol:	NB-IoT*	
Transmitter frequency:	LTE Cat NB1**	
Range in open space:	Approx. 30 km***	
Transmission power (max.):	200 mW / 23 dBm	
Protocol:	iNELS RF Control	
Transmitter frequency:	866 MHz, 868 MHz, 916 MHz	
Range in open space:	up to 20 m	
Other parameters		
Working temperature:	-30 .. +70 °C	
Storage temperature:	-30 .. +70 °C	
Operation position:	See manual	
Mounting:	in socket	
Protection degree:	IP65	
Overvoltage category:	III.	
Pollution degree:	2	
Dimension:	Ø 80 x 40 mm	
Weight:	64 g	

* nanoSIM / eSIM

** Multiple frequency bands of B1 / B3 / B5 / B8 / B20 / B28

*** Depending on network coverage

Warning

Read the operating instructions before installing the device and putting it into operation. Instruction manual is designated for mounting and also for user of the device. It is always a part of its packing. Installation and connection can be carried out only by a person with adequate professional qualification upon understanding this instruction manual and functions of the device, and while observing all valid regulations. Trouble-free function of the device also depends on transportation, storing and handling. In case you notice any sign of damage, deformation, malfunction or missing part, do not install this device and return it to its seller. It is necessary to treat this product and its parts as electronic waste after its lifetime is terminated. Before starting installation, make sure that all wires, connected parts or terminals are de-energized. While mounting and servicing observe safety regulations, norms, directives and professional, and export regulations for working with electrical devices. Do not touch parts of the device that are energized – life threat. To ensure the transmission of the radio signal, make sure that the devices in the building where the installation is installed are correctly located. Unless otherwise stated, the devices are not intended for installation in outdoor and damp areas, they must not be installed in metal switchboards or in plastic cabinets with metal doors - this prevents transmission of the radio frequency signal. iNELS Air is not recommended for controlling life-saving instruments or for controlling hazardous devices such as pumps, heaters without thermostat, lifts, hoists, etc. - radio frequency transmission may be overshadowed by obstruction, interference, transmitter battery may be discharged etc., thereby disabling the remote control.