

JOOBY

Avenue Smart Cover

USER MANUAL

This user manual contains information about the JOOBY “ASC” (Avenue Smart Cover) control device (hereinafter referred to as "device") and sets the rules of exploitation and storage of the device.

1 GENERAL INFORMATION

1.1 “ASC” control device is part of the JOOBY AVENUE luminaire and meet not only the requirements set for luminaires, but also ETSI EN 300 220-1 V3.1.1, ETSI EN 300 220-2 V3.2.1, ETSI EN 301 489-1 V2.2.0, ETSI EN 301 489-3 V2.1.1, ETSI EN 301 489-17 V3.2.0, ETSI EN 301 489-19 V2.1.0.

1.2 Denotation of possible device options:

ASC-LR-IR2-PC-DL-GPS	
ASC-LR-IR2-PC-DL-GPS	Avenue Smart Cover
ASC-LR-IR2-PC-DL-GPS	Communication technology: LR – LoRa; WF – Wi-Fi; LRWF – LoRa+Wi-Fi; NC – Not Connected
ASC-LR-IR2-PC-DL-GPS	Motion sensor: * IR2 – Motion sensor IR 2,4M; IR12 – Motion sensor IR 12,2M
ASC-LR-IR2-PC-DL-GPS	Lighting sensor: * PC – Photocell
ASC-LR-IR2-PC-DL-GPS	Control protocol: * DL – DALI
ASC-LR-IR2-PC-DL-GPS	Global positioning system: * GPS – GPS
* Symbols are present in device designations only when corresponding options are included.	

The manufacturer reserves the right to make changes in design and designation of device options, which do not worsen products technical characteristics.

1.3 Detailed description of all devices features is listed in software manual and connected files.

1.4 Product description, serial number, manufacturing date - see chapter 12.

1.5 Manufacturing enterprise:

“TELECOMMUNICATION TECHNOLOGIES Ltd”

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65026, Ukraine, Odessa, 1 Mytna Ploscha

Phone: +380 48 759-09-09

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2 ABOUT PRODUCT

2.1 The device is intended for expansion of functional possibilities of JOOBY AVENUE luminaires according to chapter 3.

2.2 The devices is meant to be set on the JOOBY AVENUE luminaire by the manufacturer or by user for re-equipment of previously bought luminaires.

2.3 The devices is intended for exploitation in AC mains with 230 V rated voltage and 50 Hz frequency.

2.4 The device remains its efficiency with ambient temperature from minus 25 to 50 °C.

3 FEATURES

3.1 Depending on the embodiment, the device may provide such features:

- control up to five modules of multi-module luminaire;
- control and diagnostics of each module, via switching off separate modules;
- measurement of power, current and voltage;
- decrease of lighting level down to 10 %;
- integrated relay to switch off the lighting, while keeping the grid powered;
- control of luminaires working options;
- programmable constant lumen output function (optional);
- programmable overheating protection (optional);
- multi-sensor event lighting control algorithm;
- inbuilt photocell for ambient lighting level measurement (optional);
- inbuilt, processor driven, PIR motion sensor (optional; may be programmed to install on low (2,5 – 5 m) or high (9 – 12 m) pillars).

4 TECHNICAL SPECIFICATION

4.1 Technical characteristics are driven to table 4.1

Table 4.1

Incoming voltage	120 – 280 V
Rated voltage frequency	50 Hz
Maximum load	500 W
Rated power, not more then	6 W
Rated power in standby mode, not more than	0,5 W
Ingress protection degree in compliance with EN 60529	IP66 (when installed)
Overall dimensions, not more than	65x250x105 mm
Mass, not more than	0,4 kg
Communication: LoRaWAN™	
Modulation	LoRa™ Spread-Spectrum class C
Receiver sensitivity	from -118 to -136 dBm
Data transfer speed	0,250 – 11 kbps
Line-of-sight propagation	up to 15000 m
Frequency range 1	868,0 – 868,6 MHz
Transmitter power output	25 mW (14 dBm)
Duty cycle	<1 %
Signal bandwidth	125 kHz
Frequency range 2	867,0 – 868,0 MHz
Transmitter power output	25 mW (14 dBm)
Duty cycle	<0,1 %
Signal bandwidth	125; 250 kHz
Frequency range 3 (receiving)	869,4 – 869,65 MHz
Duty cycle	<10 %
Signal bandwidth	125 kHz
Communication: Short Range Channel	
Modulation	LoRa™ Spread-Spectrum
Frequency range	869,7 – 870 MHz
Signal bandwidth	250 kHz
Duty cycle	No requirement
Transmitter power output	5 mW (7 dBm)
Receiver sensitivity	-120 dBm
Data transfer speed	0,250 – 11 kbps
Line-of-sight propagation	up to 1 km
Communication: Wi-Fi	
Wi-Fi protocol	802.11 b/g/n
Frequency range	2,4 GHz – 2,5 GHz (2400 MHz – 2483,5 MHz)
Transmitter power output	14 dBm (72,2 Mbps), 20 dBm (11b mode)
Receiver sensitivity (Data transfer speed)	from -72 to -98 dBm (from 65 Mbps to 1 Mbps)
Security	WPA/WPA2
Encryption	WEP/TKIP/AES
Net protocol	IPv4, TCP/UDP/HTTP/FTP
Line-of-sight propagation	up to 100 m

Continuation of table 4.1

GPS	
Positioning accuracy (CEP)	2,5 m
Positioning speed	32 s, 30 s, <1 s (cold, warm, hot start)
Receiver sensitivity	-148 dBm (cold start)
Compliance	
	ETSI EN 300 220-1 V3.1.1 (2017-02) ETSI EN 300 220-2 V3.2.1 (2018-06) ETSI EN 300 328 V2.1.1 (2016-11) ETSI EN 301 489-1 V2.2.0 (2017-03) ETSI EN 301 489-3 V2.1.1 (2017-03) ETSI EN 301 489-17 V3.2.0 (2017-03) ETSI EN 301 489-19 V2.1.0 (2017-03) ETSI EN 303 413 V1.1.0 (2017-03)

5 DELIVERY SET

5.1 The delivery set of the device is driven to table 5.1.

Table 4.1

Item	Quantity	Commentary
“ASC” control device	1 pcs	
User manual	1 pcs	
Package	1 pcs	If delivered separately from the luminaire

6 SAFETY PRECAUTIONS

6.1 Installation and maintenance of device must be executed by skilled specialist, which has admission to work on electrical installations with voltage under 1000 V.

6.2 Installation and maintenance of device must be executed only after disconnecting the luminaire from the mains.

6.3 Connecting devices to mains with characteristics different from indicated in chapter 3 of this manual is prohibited.

6.4 DO NOT:

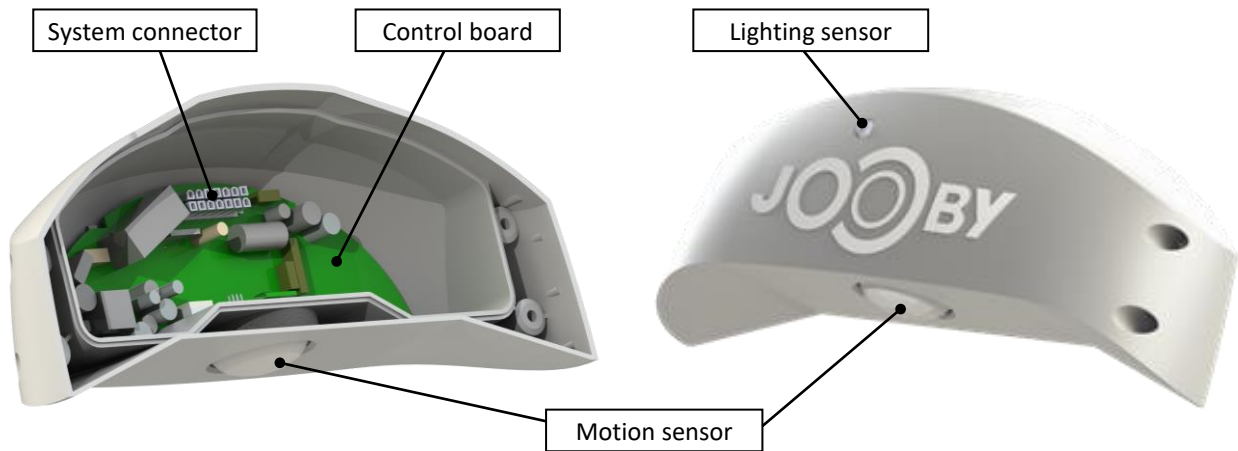
- execute assembly, disassembly, service, of the device when the mains is on;
- switch on a disassembled device;
- use devices with mechanical damage;
- use devices with damaged isolation covering;
- use devices for purposes other than intended.

7 DESCRIPTION

7.1 Common description

The device is designed as a JOOBY AVENUE front cover (picture 7.1), for a JOOBY AVENUE luminaire, with an inbuilt control board and, depending on the embodiment, may contain a motion sensor, lighting sensor and a GPS receiver.

The device is connected to luminaire via system connector.



Picture 7.1 –“ASC” control device

7.2 LoRaWAN

LoRa modulation defines the physical level of data transfer, while LoRaWAN™ is an opened protocol for high capacity networks (up to 1 000 000 devices in a single network), long range networks and low power consumption, which LoRa Alliance had standardized for low-consumption global networks (Low Power Wide Area Networks, LPWAN). LoRaWAN has the star network topology and includes different classes (A, B, C) for optimizing compromise between data delivery speed and battery powered work time.

“ASC” control devices are devices of C-class.

The protocol provides a two-way encrypted connection for all classes of devices. The protocols architecture is also developed for easily finding mobile objects for tracking devices – the most fast-growing direction of IoT (Internet of things) applications.

7.3 Short Range Channel

Channel for quick connection in short distances. Intended for connection of luminaires set near to each other without any duty cycle restrictions. Uses LoRa type modulation.

7.4 Wi-Fi

Intended for local connection of cellphone, tablet or notebook for accessing system settings, software update and direct system control. Devices with embedded Wi-Fi can work as an access point and as a node of local network.

7.5 GPS

GPS option allows the device to receive coordinates of the luminaire and synchronize the precise time and astronomical calendar.

8 PRE-STARTING PROCEDURE

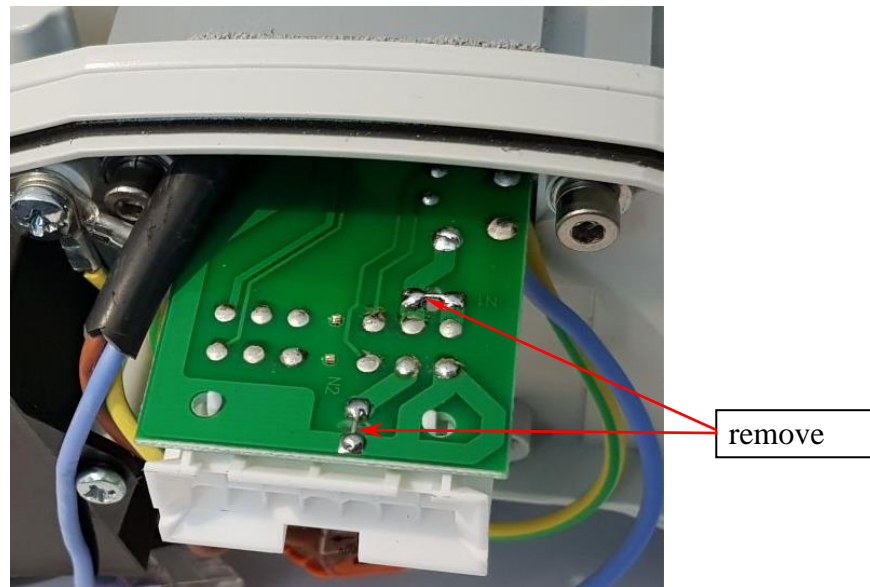
8.1 Unpack the device and check its integrity and correctness of its assembly.

8.2 Connect the device to JOOBY AVENUE luminaire. For this purpose:

- remove fastening screws of luminaires Front section cover;
- pull off luminaires front cover;
- remove (cut) jumpers on the commutation board of the luminaire according to picture 8.1;
- set the device on the luminaire. During the setting, provide connection of device and luminaires system connectors;
- install and tighten fastening screws.

The device is ready for work.

Note – To set the device on suspended JOOBY AVENUE luminaire (Avenue S1 ... – Avenue S5 ... options) replace the front cover on the section opposite to the cable input.



Picture 8.1

9 MAINTENANCE

9.1 Devices require periodical preventive examination (along with the host luminaire).

9.2 Devices require cleaning to remove dirt and dust from lighting and motion sensors (along with the host luminaire).

Do not use aggressive solutions and hard brushes that can damage the housing paint or the surface of sensors.

Caution! Do not clean the device with high-pressure cleaners.

Warning! Clean the device only when it is switched off.

9.3 Device should be repaired only by manufacturer authorized service center.

10 UTILIZATION

10.1 The device does not contain toxic materials as well as components and parts that require special utilization. Utilization of the device is carried out in usual way.

11 TRANSPORTATION AND STORAGE

11.1 Transportation of the device in the manufacturer's packaging may be carried out by rail, road, water (except sea) and aviation (in hermetic aircraft compartments) transport with mandatory observance of rules and requirements applicable to these types of transport. Transportation by sea transport is allowed only in special packaging.

11.2 Transportation of packed devices can be carried out at ambient temperature from minus 50 to +50 °C and relative humidity up to 100 % at +25 °C temperature.

11.3 Placement and fixation of containers with packed luminaires in vehicles should ensure a stable position of the container and immobilization during transportation. Containers with packed devices must be protected from precipitation through transportation.

11.4 The device should be stored in the manufacturer's packaging in closed, dry rooms with ambient temperature from minus 40 to +50 °C and a relative humidity of not more than 95 % at +25 °C temperature.

11.5 The storage room should be absent of aggressive impurities (acid or alkaline steam) that can cause corrosion in stored devices.

11.6 The storage period is not limited.

12 ACCEPTATION CERTIFICATE

manufactured and accepted with obligatory observance of state standards, existing technical documentary, and claimed suitable for usage

Supervisor of Technological Control Department

L.S.

Signature

Date

Surname and initials

13 MANUFACTURER WARRANTY

13.1 Manufacturer guarantees the quality of the product during specified warranty period for component parts, provided that the consumer fulfills all the requirements for storage, transportation and operation of the product during specified period of time.

13.2 Warranty period of the product is 7 (seven) years from the moment of putting the product into operation, but not more than 7 (seven) years and 6 (six) months from the moment of its delivery to the consumer. Warranty period includes the in-stock and transportation period, but not more than 6 (six) month. If the product remains in-stock longer than the specified period, the warranty period is decreased for a relevant term.

13.3 The manufacturer is obliged to eliminate the identified damage or replace the defective components during the specified warranty period.

13.4 Devices, provided without a completed acceptance certificate and this warranty card, would not be accepted for reclamation.

13.5 Reclamation acts and complaint letters should be sent to the address of manufacturer-facility.

L.S.

Date of sale: _____

Supplier _____
signature