

## Urbana RFT Module



### Born to be smart

Urbana RFTS Module is a Plug&Play control device for sport lighting applications. The device incorporates the multifunctional control unit which is able to track power parameters and set operating values. This device is a plug-and-play solution for integrating any luminaire or group of DALI lamps into Urbana IoT Platform.

### Lamps are no more simple light sources, they are IoT end devices with some smartness inside.

The device deploys LoRa® radio technology for last mile communication. This innovative low-power and long-range technology is used by the local controller for communicating with any kind of Lamps. It operates under LoRaWAN® 1.1.0 standard with coverage radius up to 5 Km for indoor scenarios and up to 15 Km for outdoor. LoRa™ technology provides the best performances for radio communication in terms of reliability, scalability and obstacles penetration with low power consumption. The maximum power consumption is 19 dBm with 153 dB of link budget and high sensitivity of -138 dBm.

### Best in class for energy efficiency.

Adapt current flow according to physical parameters of the lamp.  
Customize power and light level dynamically and in real-time to the preferred power level.

### Real-time optimization through Urbana IoT Platform.

All lamps, thanks to Urbana RFTS Module, can be programmed and reprogrammed whenever needed with a personalized lighting plan so the lamp will shine according to the requirements.

## TECHNICAL SPECIFICATIONS

### Mechanical

Housing:	Enclosure
Material:	Thermoplastic
Dimensions (mm):	100 (W) x 100 (L) x 50 (H)
Color:	Grey
Antenna:	Internal
Connectors:	Cable male connector Box-fixed female connector

### Electrical

Input Voltage:	85~264 VAC, 50/60 Hz
Input power (max):	5W
Load power output #1 (max):	350W
Inrush current output #1 (max):	100A
Load power output #2 (max):	1800W
Internal backup battery duration:	10 days

### Environmental

Operating Temperature:	-40/+70 °C
Storage Temperature:	-50/+80 °C
Operating Relative Humidity (max):	100% not condensing
IP rating:	IP65
Certification:	CE, RoHS
Warranty:	2 years

### Lifetime

Ta = 40°C: 90,000 hr
Ta = 50°C: 45,000 hr

### Interfaces and Protocols

Control output interface:	1-10V, 0-10V, PWM, DALI 2.0, SR
Navigation:	GPS/GLONASS*
Radio Interface:	LoRa®
LoRaWAN™ Protocol:	Version 1.1

\* On request

\*\* Under processing

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## TECHNICAL SPECIFICATIONS

### Monitoring parameters

Power consumption ***	Dimming
Active power ***	Daily programming with up to 16 dimming points
Reactive power ***	Ambient light sensor
Apparent power ***	Geolocation (GPS version)
Power factor ***	On/Off
Line voltage ***	Controller operating hours
Driver status ***	LED/lamp operating hours
Driver current ***	On/Off cycles
Energy consumption ***	DAll error ***
LED fade time ***	Flash memory error **
Controller over temperature	Eeprom memory error **
Driver over temperature ***	Ambient light error **
Driver over/under voltage ***	Main voltage down
GPS error **	
Generic fault **	

### Emergency functions

RTC status is kept for 10 days after line voltage down event. Upon line voltage recovery event, the device restores the last lighting program even without network connectivity.  
In case line is down for more than 10 consecutive days, network is unreachable and RTC is resetted, the controller executes the light sensor-based program.

### Configuration

Plug&Play using Urbana IoT Platform

### LoRa™ interface

Frequency	LoRaWAN™ 1.1.0 Regional Parameters
Modulation	LoRa™
Stack	LoRaWAN™ Certified 1.1.0
Sensitivity	-138 dBm (SF 12; SB 125 kHz, CR 4/6)
Output power	max. +20 dBm, typ. +14dBm
RF Data rate	0.24 to 37.5 kbps
RF Range	up to 15000 m (line of sight)

\*\*\* If available from the driver

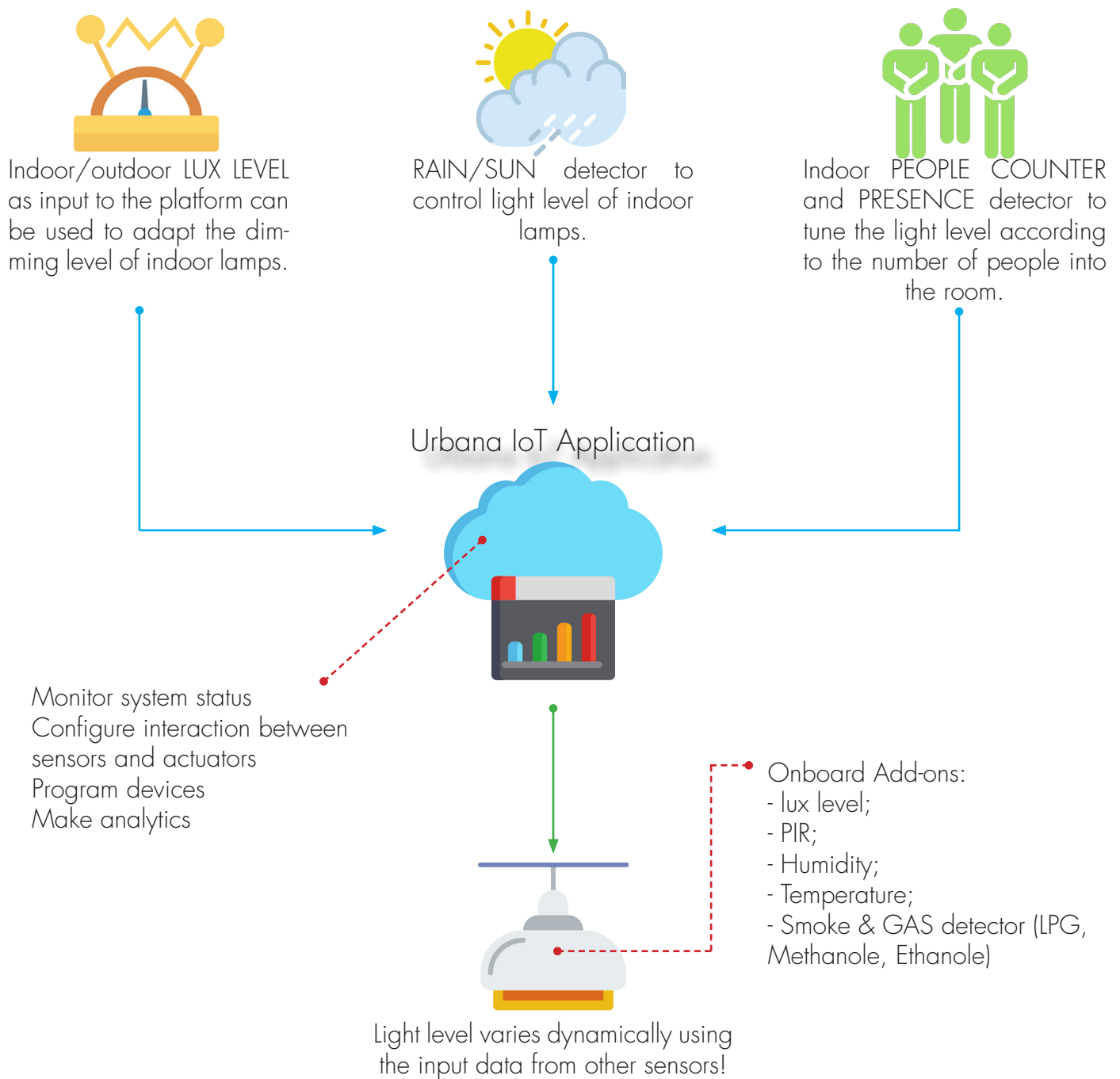
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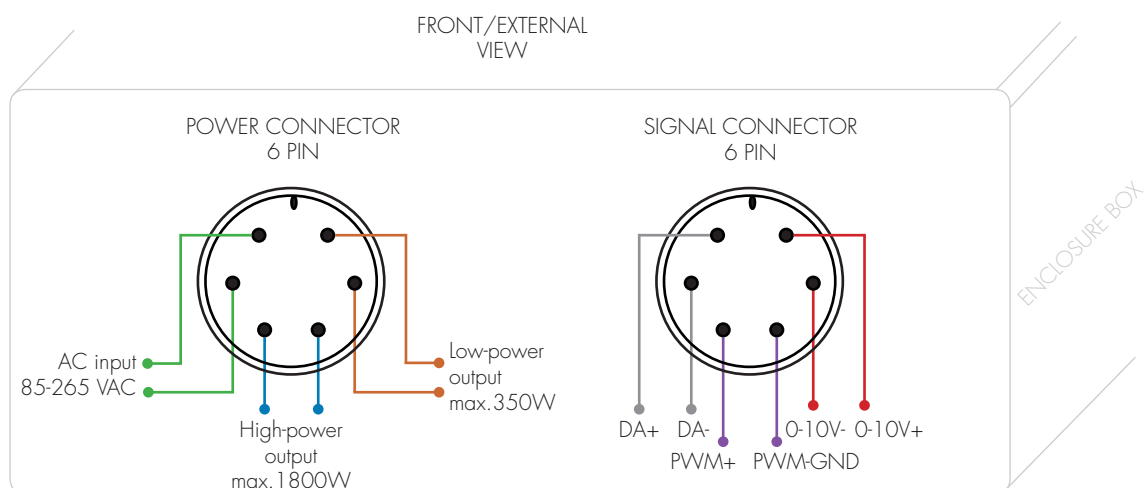
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## URBANA IoT PLATFORM

Urbana RFTS Module is compatible with Urbana IoT Platform, a platform that integrates lighting service with a lot of Smart services like video surveillance, environmental sensors. The application allow to quickly integrate input data from several sensor to be used to properly tune the lighting system. External sensor and device mounted sensor can be used to adaptively change the light level.



## CONNECTION SCHEME Inputs/Outputs



The device can be connected to the load according to three different operating modes:

1. Low-power output connection mode DALI;
2. High-power output connection mode DALI;
3. Low-power output connection mode 1-10V;
4. High-power output connection mode 1-10V.

## WIRING SCHEME - LOW-POWER OUTPUT DALI

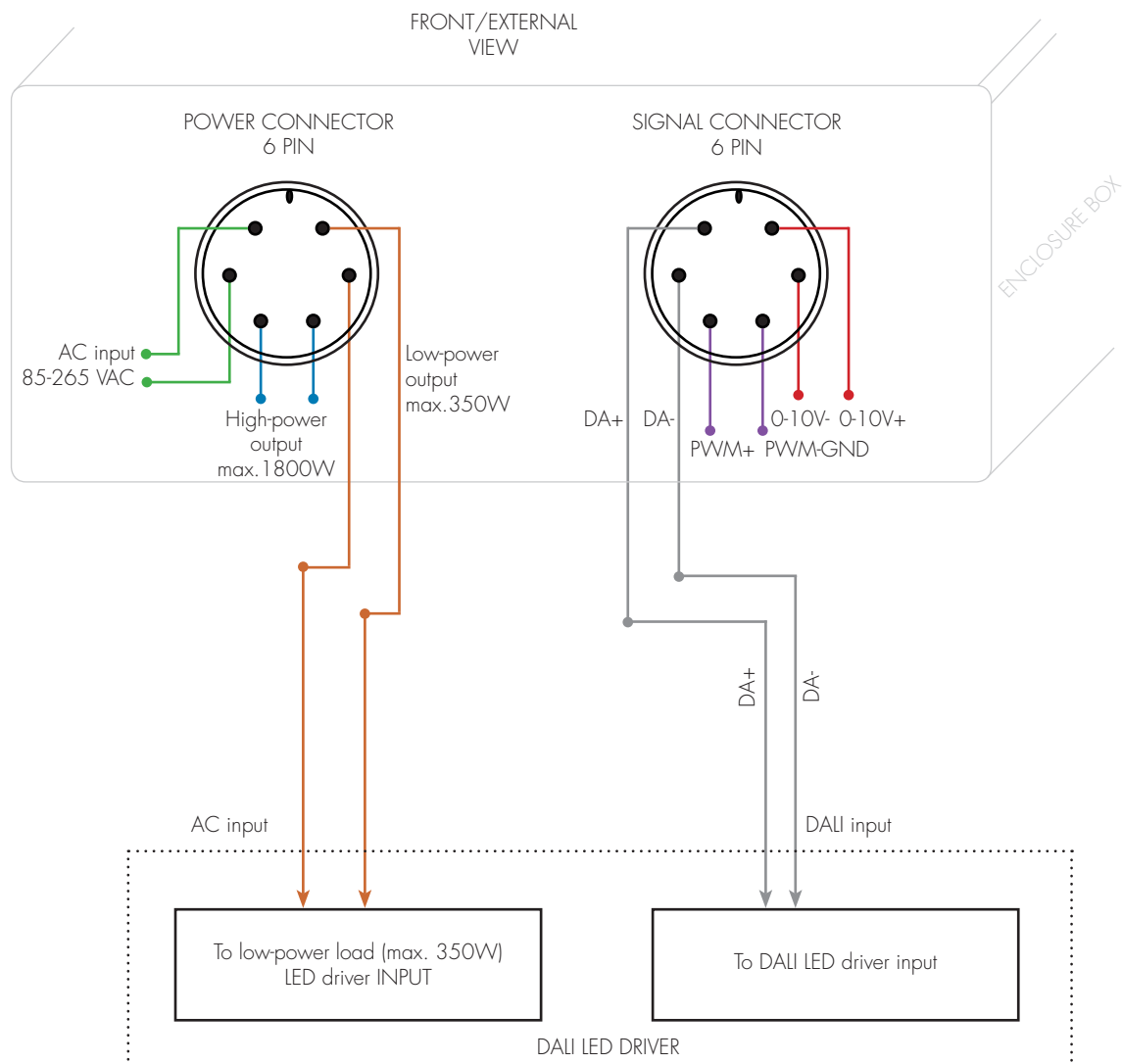
The Low-power connection mode allows to control a load power up to 350W. The load is directly connected to the low-power terminals and the internal relay (max. 100A inrush current) can be used to switch the output state. The load electrical values are collected by the internal meter circuit. The DALI connection is used to control the connected devices.

**AC POWER INPUT WIRING:** connect the AC input to the mains.

**DA+/DA- WIRING:** connect the DA+/DA- interface to the DALI input of the LED driver.

**LOW-POWER OUTPUT WIRING:** connect the low-power output to the power input of the LED driver.

**DA\_POWER\_+/-:** if the DALI bus is already powered by an external DALI BUS power supply, do not connect these connectors. If, otherwise, the DALI BUS needs to be powered by the RFT device, configure the node via firmware.



## WIRING SCHEME - HIGH-POWER OUTPUT DALI

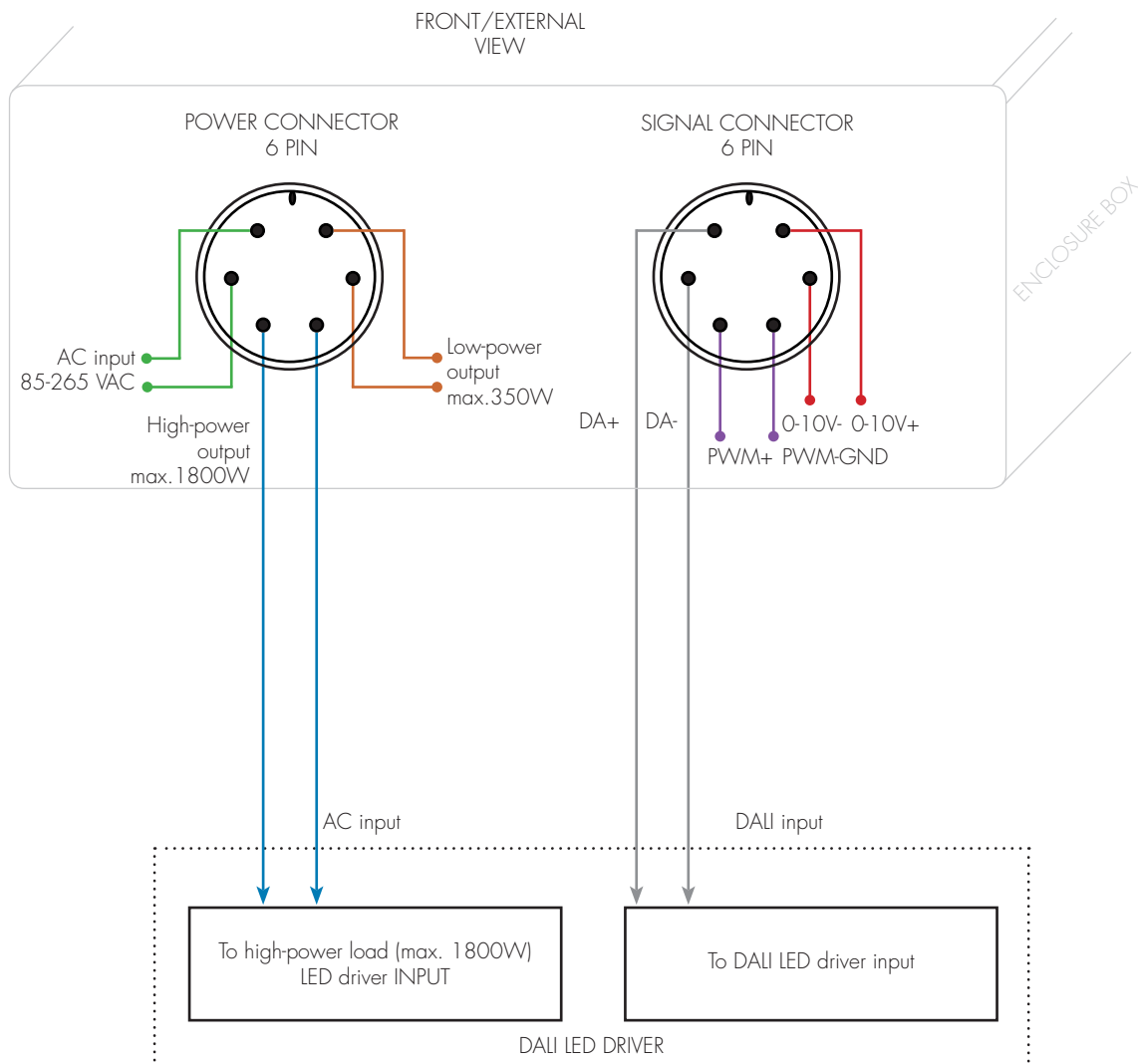
The High-power connection mode allows to control a load power up to 1800W. The load is directly connected to the high-power terminals bypassing the internal relay. Hence, an external relay shall be used to switch the output state using the low-power output terminals to control the external relay. The load electrical values are collected by the internal meter circuit. The DALI connection is used to control the connected devices.

**AC POWER INPUT WIRING:** connect the AC input to the mains.

**DA+/DA- WIRING:** connect the DA+/DA- interface to the DALI input of the LED driver.

**LOW-POWER OUTPUT WIRING:** connect the low-power output to the power input of the LED driver.

**DA\_POWER\_+/-:** if the DALI bus is already powered by an external DALI BUS power supply, do not connect these connectors. If, otherwise, the DALI BUS needs to be powered by the RFT device, configure the node via firmware.



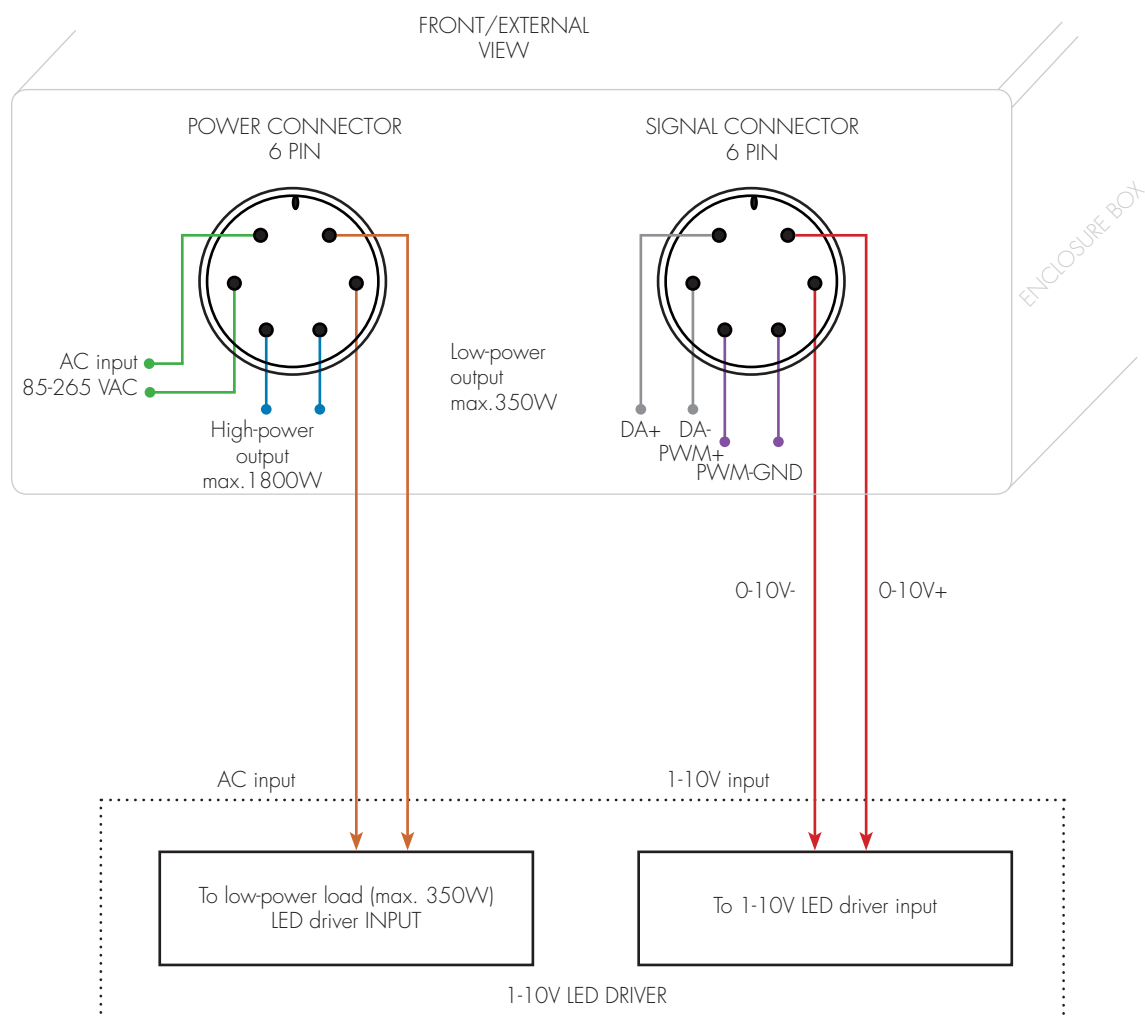
## WIRING SCHEME - LOW-POWER OUTPUT 1-10V

The Low-power connection mode allows to control a load power up to 350W. The load is directly connected to the low-power terminals and the internal relay (max. 100A inrush current) can be used to switch the output state. The load electrical values are collected by the internal meter circuit. The 1-10V connection is used to control the connected devices.

**AC POWER INPUT WIRING:** connect the AC input to the mains.

**1-10V OUTPUT WIRING:** connect the 1-10V interface to the 1-10V input of the LED driver.

**POWER OUTPUT WIRING:** connect the low-power output to the power input of the LED driver.





## WIRING SCHEME - HIGH-POWER OUTPUT 1-10V

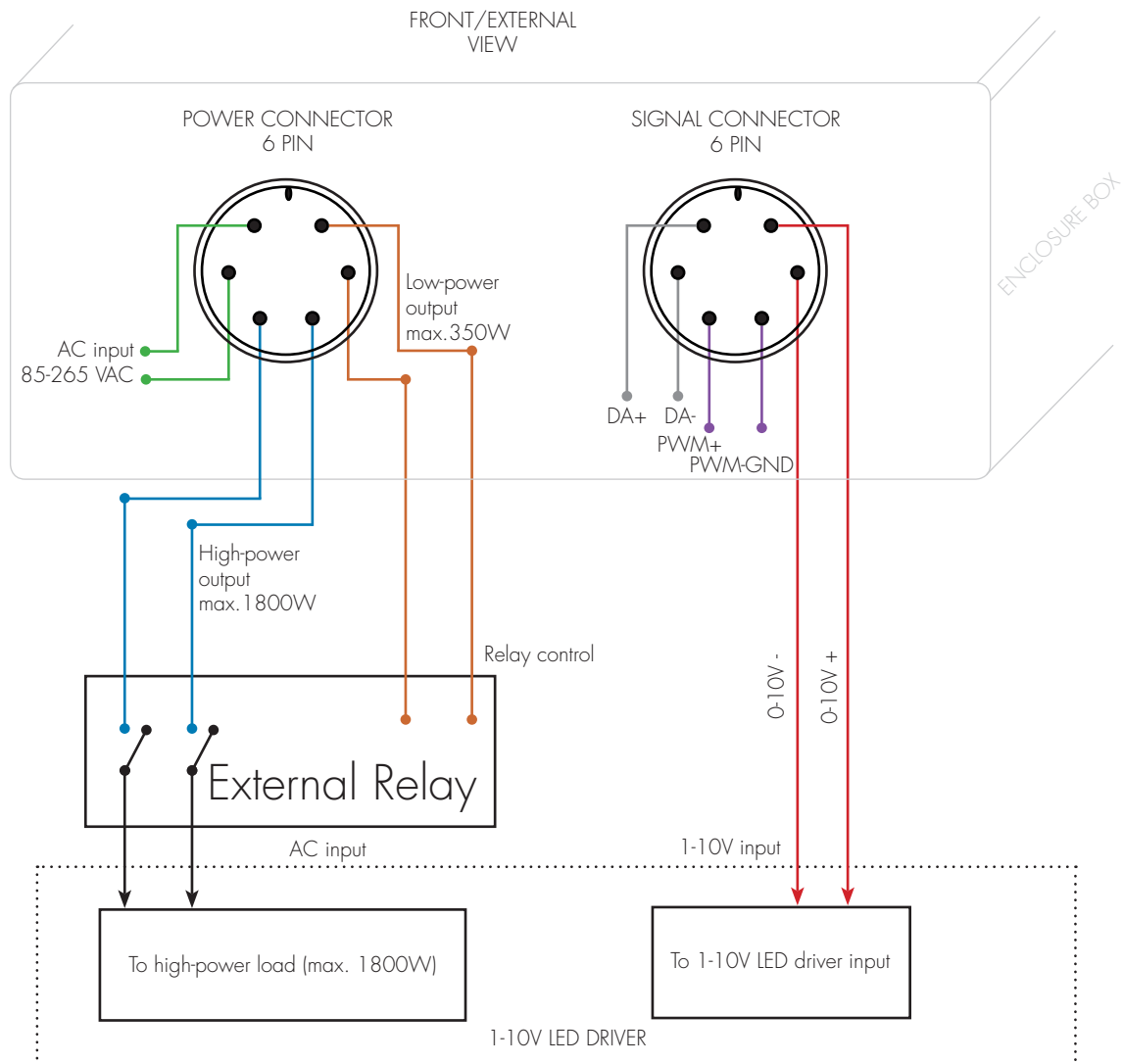
The High-power connection mode allows to control a load power up to 1800W. The load is directly connected to the high-power terminals bypassing the internal relay. Hence, an external relay shall be used to switch the output state using the low-power output terminals to control the external relay. The load electrical values are collected by the internal meter circuit. The 1-10V connection is used to control the connected devices.

**AC POWER INPUT WIRING:** connect the AC input to the mains.

**1-10V OUTPUT WIRING:** connect the 1-10V interface to the 1-10V input of the LED driver.

**LOW-POWER OUTPUT WIRING:** connect the low-power output to the control input of the external relay.

**HIGH-POWER OUTPUT WIRING:** connect the high-power output to the external relay switched line.



NOTE: external relay is not included and must be dimensioned according to the load specifications.

## PRODUCT CODE

Products are identified by the following notation.

PRODUCT	FREQUENCY	FIRMWARE	GPS
RFTS	868: 863-870 MHz 915: 902-928 MHz	EU:EU868 US:US915** AU:AU915** AS:AS923 IN:IN868**	N: no GPS Y: GPS

ex. **RFTS868EUN**

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