

RF-Controller E

RF luminaire controller

Art. no. 96628009

Application

The RF-Controller E is a wireless controller for monitoring and controlling outdoor lighting fixtures. It is designed for pole mounting and works smoothly together with the different variants of the THORN RF luminaire controller and gateway. Together they are building up a reliable, self-healing wireless mesh network suitable for outdoor luminaires in local group networks and global remote networks. The remotely programmable step-less dim and switch on/off schedules are suitable for DALI and 1-10V drivers for LED modules and other lamps.

Furthermore, the controller provides an ideal interface to connect several devices for different smart city applications.

Design notes

The device allows the operation of all types of lamps with electronic DALI or 1-10V ballast.

The device has to be installed securely on the pole and the connected cable should be routed to the connection box of the luminaire through a hole in the pole.

The antenna is integrated so there is no additional one necessary. The placement of the device should be decided with awareness of a good RF connectivity.

Start up after power connection without commissioning. The default settings can be changed using a CMS connected to the Gateway.



Functional description

This controller sends data and receives instructions from the Gateway via Radio Frequency. Current status, including malfunctions such as failed light sources, is reported over the radio frequency network to the Gateway and to the web where the details can be visualized using a CMS on a laptop PC or other browser-based device.

The RF-Controller E has a DALI/1-10V output through which ballasts (and the light sources connected to them) can be switched on or off and continuously dimmed.

The built-in astronomical clock ensures that programmed switching points are executed autonomously even if communications are interrupted. In addition to absolute switching times (using the 24-hour clock) it is also possible to set relative switching times (before/after sunrise/sunset).

With the included I²C-Interface it is easy to implement additional devices to the RF system like sensors and actors and provide lighting beyond illumination.

Technical data

Nominal input voltage	230VAC 50/60Hz
Permitted input voltage	207 - 253VAC 50/60Hz
Power consumption	<2W
Protection class	Class II electrical
Ambient temperature	-20°C to +70°C
Humidity	20% to 90% Rh non-condensing
Mounting	Pole mounting
Ingress protection	IP65
Dimensions	110 x 55 x 30mm
Processor	ARM Cortex-M3 CPU
Real-time clock deviation	Max. 4 minutes/year
Electrical protection	Overload and short-circuit protection
Power / DALI/1-10V	4 core cable, length 5m
GPIO	12 pin connector, 1.27mm grid
Default light level	100% (if not connected to RF network)
Default switching times	"ON" at sundown, "OFF" at sunrise
Wireless mesh network	2,4GHz IEEE 802.15.4 self-healing wireless mesh network +10 dBm max. transmit power. Up to 1km open field range
Proposed max distance between 2 RF devices	200m
RF controller to gateway ratio	200:1
Network security	128 AES and SSL, multilayer security with end to end encryption
Compliance	RoHS, CE, EN301489-1/3, EN61547, EN55015, EN300328, EN60950, EN50121-5, RF Transceiver compliant with European, US and Canadian (IC) standards