»LightSense« by Smart Key Co.

System specification

  LightSense system is composed of „Master" controllers and LED and other modules. Basicaly there must be one „Master" controller to for the system to function adn allow programming. Communication between modules is run through 2-wire power cable. Each output for LED module and input for sensor is freely programmable. This means that we can use any sensor to control any LED module without changing the configuration. A sensor or analogue input can be used to change the working regime (eg. Day/night, automatic/manual) or it can also be used as a master switch for the entire system. Our system supports up to 512 devices on distances of up to 1000m total with a single „Master" controller. If the total current consumtion would be higher than 20A, we can simply expand the system by adding another „Master" controller. Each „Master" controller also functions as a repeater and allow connecting additional modules and devices for another 20A of current. Devices and modules do not need to ne connected in-line. Our systems allows connecting devices in any configuration, with several lines, etc...

"Master" controller

»Master« controller enables system operation and PC programming through PC interface.

Main functions of controller:

- Power supply for SW bus up to 20A

- Input power supply from 13V to 25V

- It serves as a repeater to extend the range and as additional power supply for the SW bus if we exceed 20A of current

- USB port for accessing the SW bus and for programming

- Built-in RTC for programming time dependent operating modes

- Continuous operation checking of SW bus

- "Error check correct" algorithm for eliminating erros on SW bus

- 2 programmable digital inputs (5V to power supply input)

- 1 programmable analogue input (0V -12V)

- 2 programmable digital outputs (2A of current, voltage equal to input voltage)

- Firmware update +

Programmable Functions:

- Time setting

- Analog input can be used for ambient light sensor to adjust the luminance of dimmable/programmable lights*

- Digital output triggers

- Auto-switch timer (ON/OFF after elapsed time)

- Delayed – Power timer (ON/OFF)

- Analog and digital inputs have programmable operation mode (as switch or regime switch)

- Parameter setting for each mode

- Supported regimes (day/night, timer, auto/manual)

- Free address programming

LED Module

A small module that connects to every light in the system.

- 12V to 24V output voltage, conditioned with input voltage of the Master controller -1.0V

- 1.5A maximum output current

- 1 sensor wire, lenght of 2m with 30cm cylindrical tection area around the wire

- Sensor wire can be shortened as needed

- Firmware update +

Programmable functions for each module:

- Highest and lowest luminosity

- Time delay for ON/OFF function

- Dimming speed for raising/lowering luminosity to set default value

- Automatic switching timer (switching on or off after the elapsed time)

- Setting the parameters for each mode individually

- Supported modes (day /night, timer, automatic / manual)

- Automatic luminance adjustment to ambient light sensor *

- Sensor sensitivity

- Sensor mode (as a normal switch or regime switch)

- Free address programming

I/O module+

A small module that connects to the SW bus and provides 1x digital input & 1x digital output.

- 12V to 24V output voltage, conditioned by the master controller input voltage -1.0V

- 1.5A maximum output current

- Digital input (5V to input power supply)

Programmable functions for each module:

- ON/OFF time delay

- Automatic switching timer (switching on or off after the elapsed time)

- Setting the parameters for each mode individually

- Supported modes (day /night, timer, automatic / manual)

- Digital input has programmable mode of operation (as a switch or as a mode switch)

- Free address programming

Ambient light sensor+

A small module that connects to the SW bus bus and provides ambient light measurement.

- Adjustable night/day switching

- Use for analog adjustment of luminosity to the desired value indoors or outdoors

- Sensor mode (as a normal switch / as a mode-switch)

- Free address programming

PC software

Dedicated software for the LightSense system. Graphical interface for setting operating modes, parameters of individual lights/LED modules and sensors. Supported on Windows operating systems. USB 2.0 port is required to program the system.

+ Functionality is in progress