

# System Apollo

## WIRELESS STREET LIGHTING MANAGEMENT

- WEB based user interface – GSM/GPRS connection
- Wireless lamp control
- Independent control of the output power phases (extension module)
- Built-in scheduler, included astronomical clock scheduler
- Possibility of connect 3 phase electrical meter
- Providing data from system archive
- Alarm generator
- CE certification



### DESCRIPTION

Wireless Street Lighting Management is a comprehensive solution that provides on-line, duplex wireless communication with particular street lamps.

It allows sending commands for setting the light intensity, provides feedback signals watching the street lamp state (temperature, power consumption ...) and potential failures (overheating, etc.).

It provides a built-in user data access via web interface or via cloud space.

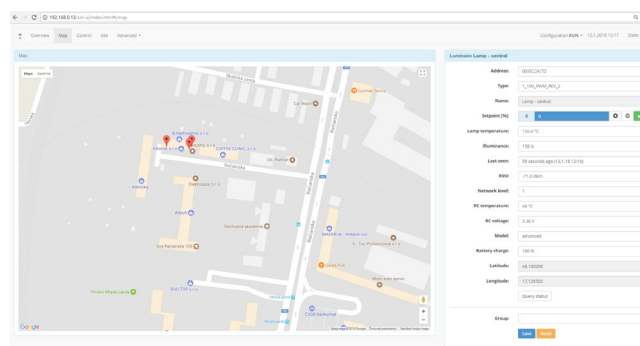
System Apollo set is suitable for projects of public lighting and integrate these features:

- ☞ WEB based interface – LAN/GSM/GPRS connection
- ☞ built-in scheduler, included astronomical clock scheduler for automatic lamp management
- ☞ possibility to connect 3phase electrical meter provides voltage, current, power, energy vaules on each electric phase via RS485
- ☞ providing data from system archive
- ☞ possibility to connect (switchgear) door contact and external light sensor
- ☞ possibility to connect temperature sensor
- ☞ alarm generation of opening switchgear or inadequate energy consumption on different phases (consumption despite lights are switched off or insufficient consumption when lights are turn on)
- ☞ possibility to connect external lights to digital outputs such as christmas light, season lights decoration

### EXAMPLES OF A POSSIBLE USE CASE

- Street Lighting
- Lighting of car parking
- Lighting of parks and public spaces
- Lighting of Business zones

### WEB INTERFACE



### SPECIFICATION

Power supply	12 VDC
Consumption	max 6W
Modem BANDs	3GPP/UMTS Band 8 (900 MHz) 3GPP/UMTS Band 1 (2100 MHz)
Modem Technology	HSUPA cat. 6, up to 5.76 Mbit/s UL HSDPA cat. 8, up to 7.2 Mbit/s DL WCDMA PS data, up to 384 kbit/s DL/UL
Frequency of RF communication	868 MHz (or 434MHz)
Digital inputs	4x
Digital outputs (relay)	2x max 2A
USB (option)	1x
RS485	2x (3 wires)
RS232	3x (2x True RS232, 1x RS232)
Dallas temperature sensor	1x (DS18B20)
Slave units	several tens (hundreds) of slave unit SOL (lamp unit)
Coverage	IP20
Dimensions	110x100x40 mm

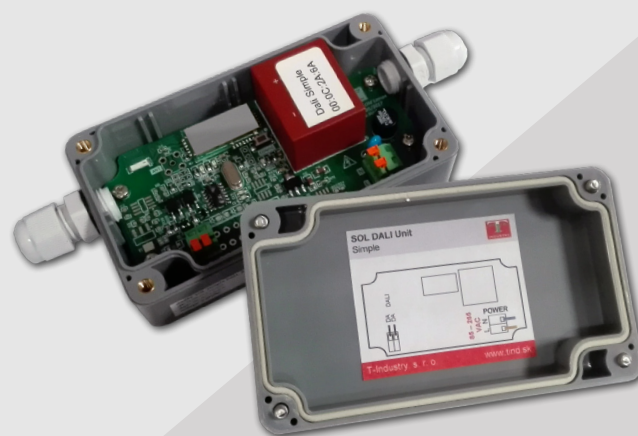
■ ID: APOLLO-SYSTEM

## SOL end-point lamp unit v. 3.0

### DESCRIPTION

A slave SOL unit provides a lighting control via standards such as voltage control 0 – 10VDC, DALI or control using PWM input.

In addition, the unit further monitors the temperature of a lamp ballast. This information is very important for modern LED lamps. The unit also monitors the light intensity of the lamp using an external light sensor. The unit is independent from an external power source, it is equipped with own batteries.



### SPECIFICATION - SIMPLE VERSION (0-10V/PWM)

Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
Coverage	IP 66
Dimensions (without cable glands)	115x65x40 mm
PWM Output (PWM version)	1 x (option 2x)
Type	open-drain
Max. voltage	70 VDC
Nominal frequency	1 kHz
0-10V Output (0-10V version)	1 x (option 2x)
Max. output current	5 mA
Min. output voltage	0,02 VDC

### SPECIFICATION - DALI VERSION

Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
DALI powered output	1
Coverage	IP 66
Dimensions (without cable glands)	115x65x40 mm

### SPECIFICATION - ADVANCED VERSION (0-10V/PWM)

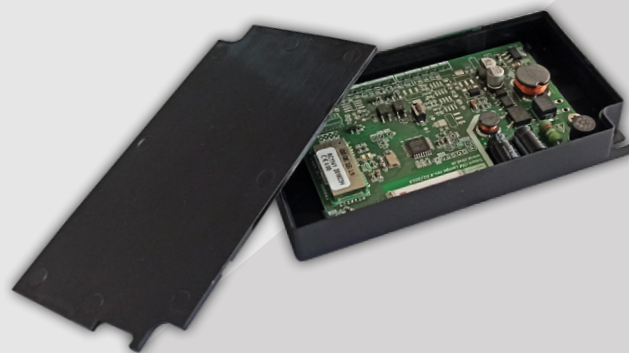
Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
Temperature sensor (recommended)	LMT84
Temperature / voltage ratio	-5.5 xT +1035 mV/°C
Light intensity sensor (recommended)	BPW21R
Conversion ratio	9 nA/lux
Coverage	IP 66
Dimensions (without cable glands)	115x65x40 mm
PWM Output (PWM version)	1 x (option 2x)
Type	open-drain
Max. voltage	70 VDC
Output	2x Open collector (option) max 70VDC
Communication	1x RS232 or RS485 (option)
Nominal frequency	1 kHz
0-10V Output (0-10V version)	1 x (option 2x)
Max. output current	5 mA
Min. output voltage	0,02 VDC
Output	2x Open collector (option) max 70VDC
Communication	1x RS232 or RS485 (option)

## SOL end-point lamp unit v. 4.0

### DESCRIPTION

A slave SOL unit provides a lighting control via standards such as voltage control 0 – 10VDC, DALI or control using PWM input.

In addition, the unit further monitors the temperature of a lamp ballast. This information is very important for modern LED lamps. The unit also monitors the light intensity of the lamp using an external light sensor. The unit is independent from an external power source, it is equipped with own batteries.



### SPECIFICATION - SIMPLE VERSION (0-10V/PWM)

Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
Coverage	IP 30 IP68 (encapsulated box)
Dimensions	123.5x70x17 mm
PWM Output (PWM version)	1 x (option 2x)
Type	open-drain
Max. voltage	70 VDC
Nominal frequency	1 kHz
0-10V Output (0-10V version)	1 x (option 2x)
Max. output current	5 mA
Min. output voltage	0,02 VDC

### SPECIFICATION - DALI VERSION

Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
DALI powered output	1
Coverage	IP 30 IP68 (encapsulated box)
Dimensions	123.5x70x17 mm

### SPECIFICATION - ADVANCED VERSION (0-10V/PWM)

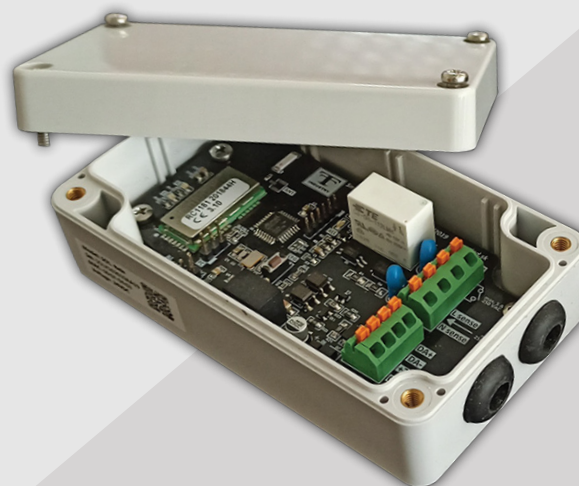
Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
Temperature sensor (recommended)	LMT84
Temperature / voltage ratio	-5.5 xT +1035 mV/°C
Light intensity sensor (recommended)	BPW21R
Conversion ratio	9 nA/lux
Coverage	IP 30 IP68 (encapsulated box)
Dimensions	123.5x70x17 mm
PWM Output (PWM version)	1 x (option 2x)
Type	open-drain
Max. voltage	70 VDC
Output	2x Open collector (option) max 70VDC
Communication	1x RS232 or RS485 (option)
Nominal frequency	1 kHz
0-10V Output (0-10V version)	1 x (option 2x)
Max. output current	5 mA
Min. output voltage	0,02 VDC
Output	2x Open collector (option) max 70VDC
Communication	1x RS232 or RS485 (option)

## SOL end-point lamp unit v. 5.0

### DESCRIPTION

A slave SOL unit provides a lighting control via standards such as voltage control 0 – 10VDC, DALI or control using PWM input.

In addition, the unit further monitors the temperature of a lamp ballast. This information is very important for modern LED lamps. The unit also monitors the light intensity of the lamp using an external light sensor. The unit is independent from an external power source, it is equipped with own batteries.



### SPECIFICATION - 0-10V/PWM

Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
Output	1x relay max 230VAC/5A
Input	1x max 230VAC/70mA
Coverage	IP 30
Dimensions (without cable glands)	115x65x40 mm
PWM Output (PWM version)	1 x
Type	open-drain
Max. voltage	70 VDC
Nominal frequency	1 kHz
0-10V Output (0-10V version)	1 x
Max. output current	5 mA
Min. output voltage	0,02 VDC

### SPECIFICATION - DALI VERSION

Power supply	240 VAC
Consumption	<0,5 W
Frequency of RF communication	868 MHz (or 434MHz)
Max. RF communication performance	9 dBm
Line-of-sight distance	50 m (internal antenna) 300 m (external antenna)
DALI powered output	2x
Output	1x relay max 230VAC/5A
Input	1x max 230VAC/70mA
Coverage	IP 30
Dimensions (without cable glands)	115x65x40 mm

Video on youtube:

