HIKOB GATEWAY LITE

Installation Guide

INSTALL_GATEWAY-LITE-V7

2019/04 Edition

Related HIKOB products:

GATEWAY H-GL200A-T
GATEWAY H-GL200A-P
NETPULSEAPP H-SC18-T
NETPULSEAPP H-SC18-P
EXTENDER H-AT200A
SMA AH-AC100A-50
ANT SH-AC100A

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1. Introduction

When using GATEWAY-LITE, safety precautions must be taken to avoid injury and damages. Please read this guide before installing, using the product, or performing any maintenance operation. Failure to read, understand and follow herein instructions may result in personal injury. In no event shall HIKOB be held liable for any damages arising out of or related to misunderstanding instructions detailed in this manual.

1.1 Symbols and conventions used in this guide

Read entirely this guide before using the product GATEWAY-LITE and keep it handy for reference

Caution – Indicates a potentially hazardous situation which, if instructions are not followed, may result in damage to the equipment.

Electrical Hazard – Indicates a dangerous condition such that, if instructions are not followed may result in electric shock and physical injury.

– Carefully follow instructions and warnings given in this guide, as well as instructions indicated on the product.
– Make sure you understand all instructions: refer to symbols definitions and conventions used in the documentation.
– Should you have questions on using the product GATEWAY-LITE once you have completely read this guide, contact the HIKOB support or your vendor.

1.2 Safety instructions

It is forbidden to install the product in a location accessible to the public. Please refer to the installation section.

This device must be professionally installed

Only antennas provided by HIKOB (ANT-SS2.4G or TANGO24/1M/SMAM/S/RP/17) can be used with the product.

Do not disassemble or attempt to open the product. It does not contain any serviceable parts inside. Only qualified staff is allowed to perform maintenance operations on the GATEWAY-LITE product. Opening a GATEWAY-LITE will void the warranty.

Do not overheat, do not dispose in fire, do not crush. Do not heat above the product maximum operating temperature, incinerate, or expose content to water. GATEWAY-LITE uses lithium batteries, such improper use may lead to leakage, explosion or fire.

Modifications or changes on the product is strictly prohibited if it is not expressly approved by HIKOB. Modifications or changes performed on GATEWAY-LITE will void the user's authority to operate the equipment.

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1.1 Compliance and conformity

a. Europe

HIKOB SAS declares that the HIKOB GATEWAY LITE product is in accordance with stipulations of the RED 2014/53/UE, CEM 2014/30/UE and 2014/35/UE directives.

b. USA

Information to user: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in an installation. If this equipment does cause harmful interference to radio or television reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF exposure: This device complies with FCC RF radiation exposure limits set forth for general population. This device must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Professional installation: This device must be professionally installed, according to KDB 353028 D01, section II.A.2.c.

1.3 WEEE

Information on disposal for users of waste electrical electronical equipment:

This symbol on the product(s) and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge. Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

1.4 Technical Support

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38240 MEYLAN
FRANCE
Tel: +33 4 28 29 54 50
support@hikob.com

2   General description

2.1   HIKOB wireless sensor network

The GATEWAY-LITE is part of the HIKOB wireless sensor network for vehicle detection. This radio network consists of a GATEWAY-LITE and a set of WISECOW sensors that detect vehicles.

These radio-transmitters transmit their acquisitions to the GATEWAY-LITE, potentially via LION routers, depending on the environmental constraints that may affect radio transmission.

This local radio network operates on the 2.4GHz ISM frequency band according to the IEEE 802.15.4e protocol. The GATEWAY-LITE exposes sensor detection information via its dry contacts, which can be read by third party equipment.
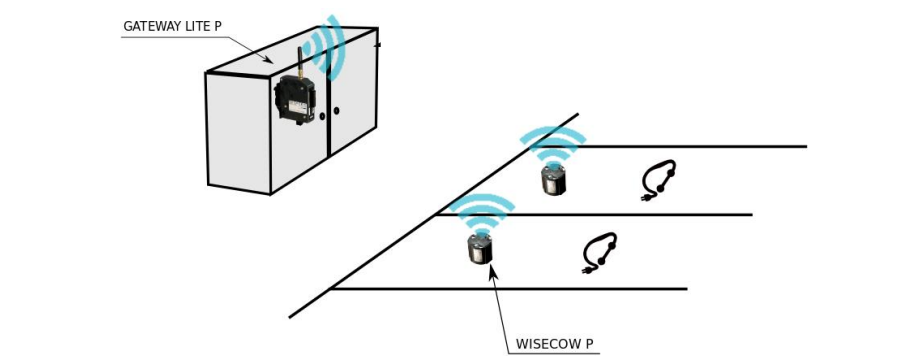
2.2   GATEWAY-LITE

The GATEWAY-LITE is the head of the radio network HIKOB which publishes via the values of its 4 dry contacts and its serial link, the detection information of wireless sensors WISECOW.

The GATEWAY-LITE may be powered in a range of + 6VDC to +24VDC and installed in a technical cabinet.

The pluggable screw terminals for the GATEWAY-LITE connectors are provided.

The GATEWAY-LITE is delivered assembled, the supplied stick antenna must be screwed on its SMA connector. This antenna is replaceable in case there is a need to deport it due to radio constraints at the installation site.

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3   Technical information

3.1   Global

Power supply	Between +6VDC and +24VDC
Power consumption	< 100mW
Dimensions	77 x 60 x 25mm
Type of fixing	DIN Rail
Weight	150g
Operating temperature	From -40°C to 80°C
Water index	IP20

3.2   Radio

3.2.1   Common

Frequency band	2.45GHz ISM
Protocol	IEEE 802.15.4e
Number of channels	16

3.2.2   Authorized antennas

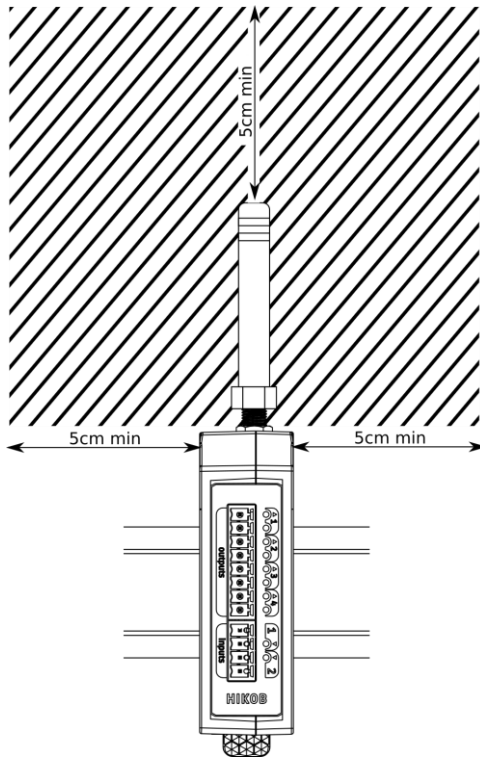|	Antenna 1	Antenna 2
Manufacturer	LPRS	Siretta
Manufacturer Part Number	ANT-SS2.4G	TANGO24/1M/SMAM/S/RP/17
HIKOB Part Number	Provided with product	ANT SH-AC100A
Antenna gain	+2dBi	+3dBi

3.3   Connections

Number of dry contacts	4
Breaking capability	60V / 100mA
Configuration	RS232 @ 115200bauds 8N1
Exploitation	RS485 @ 9600bauds 8N1
Connectors	Terminal block
Wire sections	From AWG28 to AWG16 (0.08mm² to 1.3mm²)
Terminal block clamping torque	0.22N.m (0.25N.m max)
Chucking tool	2.5mm Flat Screwdriver

4   Guidelines for Installing

The electrical connection for powering the GATEWAY-LITE as well as the connection to external equipment for reading the dry contact outputs must only be carried out by qualified and competent personnel. The installation must comply with the local electrical safety rules applicable for the installation site.

4.1   Mounting Dimensions

The GATEWAY-LITE must be placed in a cabinet, mounted on a DIN rail. Make sure there is enough clearance around the product, especially in height. For good radio performance, no metal element should be located near the antenna.

If it's impossible to provide enough space without a metal mass around the supplied antenna, it is recommended to move it. In this case, you can use the extension cable distributed by HIKOB. Its reference is SMA AH-AC100A-50.

If the cabinet is strongly metallic and a simple move is not enough, HIKOB distributes under the reference ANT SH-AC100A, a puck antenna that can be installed outside the cabinet.

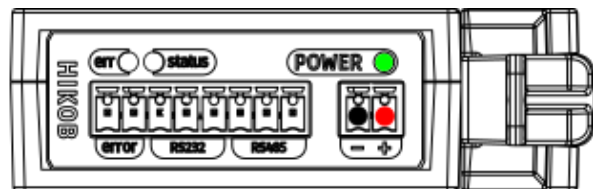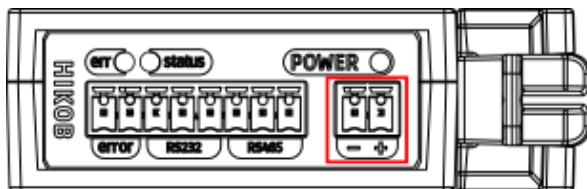Whatever, the antenna cable must never exceed 3m in any case.

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4.2 Connecting Power

Power supply	Between +6VDC and +24VDC
Power consumption	< 100mW
Connectors	Terminal block
Wire sections	From AWG28 to AWG16 (0.08mm² à 1.3mm²)

To power the GATEWAY-LITE (Class III appliance), a low-voltage DC power source must be used.

Observe the polarity displayed on the device:

4.3   Dry contacts

Number of dry contacts	4
Breaking capability	60V / 100mA
Connectors	Terminal block
Wire sections	From AWG28 to AWG16 (0.08mm² to 1.3mm²)

Dry contacts consist of isolated relays with breaking capability of 60V / 100mA. It's easy to use standard voltages available in the technical cabinets, namely 12VDC and 24VDC.

Use the shortest cable as possible and make sure it's properly sized to carry the required current. The pluggable terminal block accepts wire sizes ranging from 0.08mm² to 1.3 mm² (16 AWG to 28 AWG).

The equipment includes removable connectors for user wiring. To prevent the connections from loosening, make sure the connector is properly seated and the wire is securely plugged into the connector. To avoid damaging the connector, be careful not to over tighten the screws. The maximum torque for the connector screws is 0.25 Nm.

The breaking capacity of the contacts is limited to 100mA. This is more than enough for a traffic light controller or PLC, but a larger load should never be connected directly to one of the dry contacts.

Dry contacts act as simple switches. For the information to be understood by a PLC, it is necessary to load the outputs. Only use resistive loads. Below is an example wiring diagram in case the PLC and the GATEWAY-LITE are powered by 12VDC:
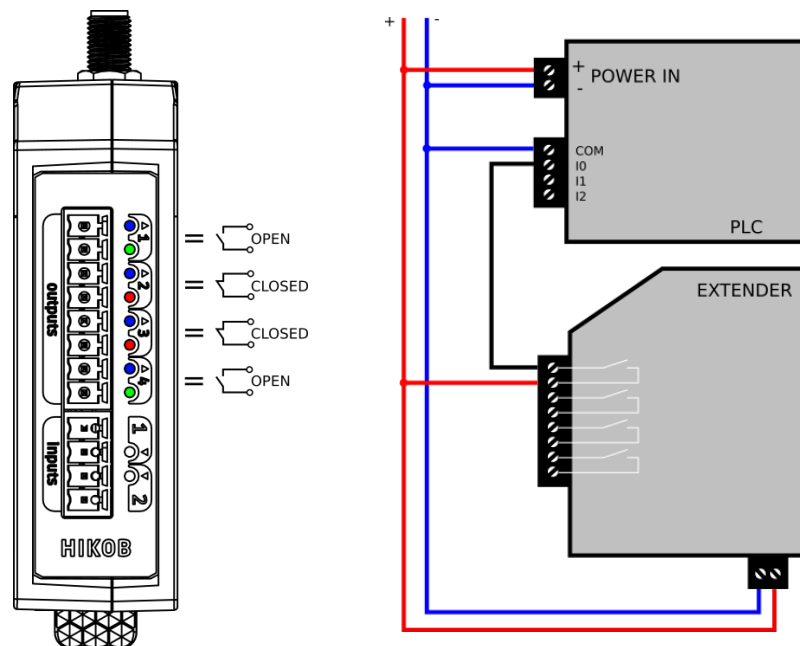
The dry contacts can be configured via the NETPULSE-APP application to be in normally closed or normally open mode.

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4.4   Configuration Serial Interface

Type of interface	RS232
Baud rate	115200bauds
Data bits	8
Parity	No
Stop bit	1
Flow control	No

The RS 232 port is used for the configuration of the GATEWAY-LITE, it can also be used in operation (notification, settings, etc.), refer to the documentation of the serial communication interface provided or contact the HIKOB support.
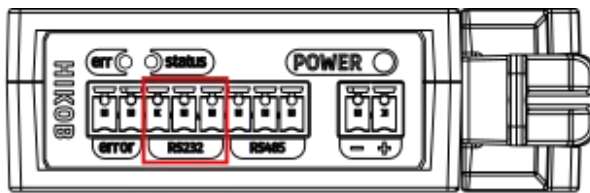

HIKOB has in its catalog a USB-RS232 cable with 2 connectors allowing both to power the GATEWAY-LITE and configure it from a computer or tablet.

GND
RS232 TX EXTENDER
RS232 RX EXTENDER
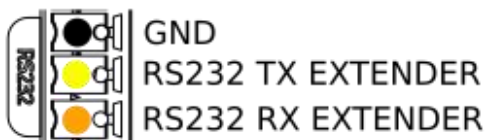
4.5 Exploitation Serial Interface

Type of interface	RS485 2wire
Baud rate	9600bauds
Parity	No
Stop bit	1
Flow control	No

The RS485 port is used to connect one or more EXTENDERs (slaves) to a GATEWAY-LITE (master) and thus expand the number of dry contacts available on the GATEWAY-LITE.
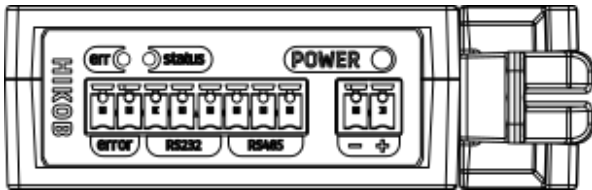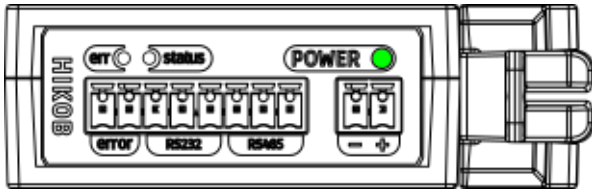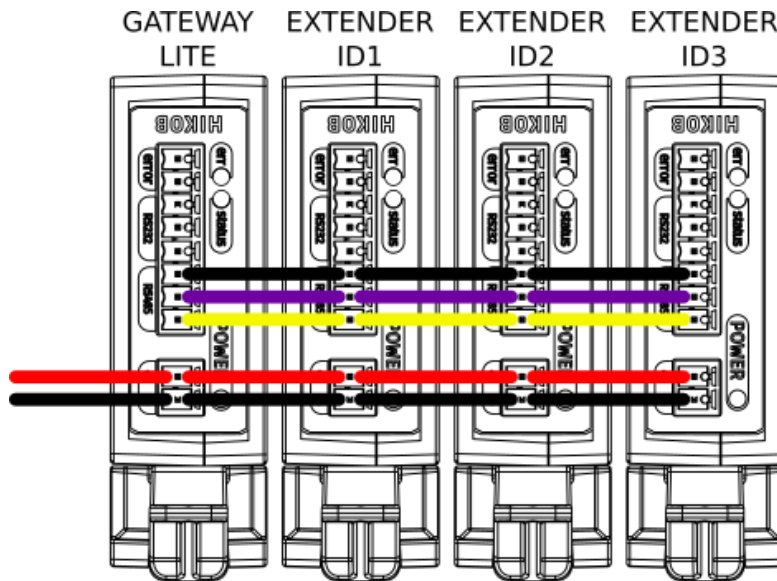

If more than one EXTENDER is used with the same GATEWAY-LITE, it is necessary to modify the identifier of the additional EXTENDERs. Refer to the documentation "INSTALL_EXTENDER".

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5   Exploitation

Description of the different states of the LEDs:

Indicators	Description
Alimentation	
	The "power" LED is off: The equipment is not properly powered, refer to paragraph 4.2
	The "power" LED is on: The equipment is properly powered

For the LED's definition associated with the outputs, refer to the GATEWAY-LITE -P -T or -W commissioning documentation for your application.