

## HDL-MCIP-RF02.10 Wireless Mesh Gateway

buspro  
WIRELESS

### Datasheet

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Figure 1. Wireless Mesh Gateway

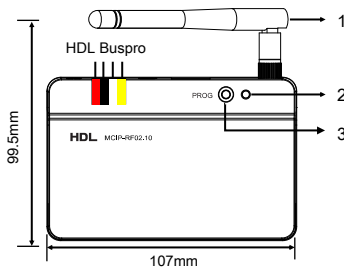


Figure 2. Product information (1)

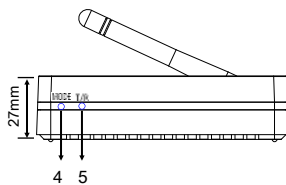


Figure 3. Product information (2)

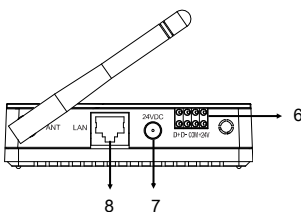


Figure 4. Product information (3)

## Overview

HDL-MCIP-RF02.10 (See Figure 1), which includes three communication interfaces: RJ45, HDL Buspro, RF, is a gateway based on MESH technology. It enables the intercommunication between HDL intelligent devices of different media platforms (RS485, Ethernet or RF).

## Functions

- Mesh mode supported
- Bridge (transparent transmission) mode supported
- Encrypted wireless data transmission
- Internal 433M wireless module, which supports HDL remote control

## Important notes

- Ensure all connections are correct after installation.
- In Mesh mode, all RF channels of each gateway must be different from each other to avoid loop connection; in Bridge mode, all RF channels of each gateway must be the same as each other.
- In Mesh mode, subnet ID of Gateway in RF port should be unique in the LAN, and must be the same as that of RF devices controlled by the gateway, while RS485 port can be configured to filter different subnet ID.
- HDL-MCIP-RF02.10 can be configured as transparent transmission (bridge) mode. RS485 and Ethernet data in multiple gateways can be transmitted through RF, which effectively extends the communication distance. When the environment is not convenient for layout, wired subnets can interconnect via wireless (RF).
- Ethernet (RJ45) of two or more devices can not be connected with RS485 port, otherwise loop connection will block communication.
- The selected communication frequency must meet the laws and regulations of the country/region where the device is used
- It is recommended to set new password for wireless communication to avoid false control of devices in the same frequency.
- Stable indoor transmission distance of RF devices is 50m, which will be decreased by obstacles. For example, a wall will decrease the distance to 20m. So it is recommended to install Mesh wireless devices on the wall without obstacles around. Avoid installing the device beside large metal objects to ensure better communication. It is not suggested to install this device in electric box, unless an external antenna is available.

## Product information

See figure 2 - 4

### 1. Antenna

**2. Working indicator:** flashes in green every 2 seconds in normal working mode.

### 3. PROG button (Programming button):

- Fast press the button three times to enter inclusion mode. The red Mode indicator flashes. At this time, wireless device in inclusion mode will be included to the wireless network of HDL-MCIP-RF02.10.
- Keep pressing for 3 seconds to read/change the Subnet ID address. The working indicator will be red.
- Keep pressing for 10 seconds and release to restore default IP (192.168.10.250). The working indicator will be red.

### 4. Red/green indicator (Mode):

- Flashes quickly in red: Device inclusion mode is active.
- Keeps on in green: Wireless traffic indicator.

### 5. Blue indicator (T/R):

- Flash: receiving/sending wireless signal
- Indicator 2, 4 and 5 turns on at the same time: Module restart/booting.

### 6. HDL Buspro connector

### 7. 12-24V DC power input:

If module is powered from the HDL Buspro cable, DC power input should not be connected.

### 8. RJ45 Ethernet connector

### Wall installation - See figure 5

1. Fix 2 screws with C-C distance 68mm on the wall (Screw head diameter max. 6.5 mm).
2. Put the device on the screws.

## Safety precautions

- The installation and commissioning of the device must be carried out by our company or the organization designated by our company. For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
- HDL does not take responsibility for all the consequences caused by installation and wire connection that are not in accordance with this document.
- Please do not privately disassemble the device or replace parts, otherwise it may cause mechanical failure, electric shock, fire or body injury.
- Please resort to our customer service department or designated agencies for maintenance service. The warranty is not applicable for the product fault caused by private disassembly.

## Package content

HDL-MCIP-RF02.10\*1 / Antenna\*1 / Adapter\*1 / Buspro connector\*1 / Datasheet\*1



Figure 5. Installation (1)

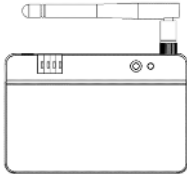


Figure 6. Installation (2)

## Technical data

### Basic parameters

Working voltage	12~30V DC
Communication interfaces	RJ45 (TCP/IP4), HDL Buspro (RS485), RF
Indoor communication distance	≤50m (barrier free)
Wireless transmission power	+10dbm
RSSI (Received Signal Strength Indication)	>-80dbm
Wireless communication PSK (Encryption key size)	16 characters, 128-bit (Should be changed to your unique key before including devices)
Working mode	Mesh mode, Bridge mode

### Frequency allocation

(China) WPAN	780 to 786MHz (Select your frequency before including devices)
(Europe) SRD	864 to 870MHz (Select your frequency before including devices)
(North America) ISM	904 to 928MHz (Select your frequency before including devices)

### External environment

Working temperature	-5°C~45°C
Working relative humidity	≤90%
Storage temperature	-20°C~60°C
Storage relative humidity	≤93%

### Specifications

Dimensions	107×99.5×27 (mm)
Net weight	212g
Housing material	ABS
Installation	Free standing or wall mounted
Protection rating (Compliant with EN60529)	IP20

### Name and content of hazardous substances in product

Components	Hazardous substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr (VI))	Poly-brominated biphenyls (PBB)	Poly-brominated diphenyl ethers (PBDE)
Plastic	o	o	o	o	o	o
Hardware	o	o	o	o	-	-
Screw	o	o	o	x	-	-
Solder	x	o	o	o	-	-
PCB	x	o	o	o	o	o
IC	o	o	o	o	x	x

### HDL Buspro cable guide

CAT5/CAT5E	HDL Buspro	HDL Buspro Cable
Brown/ Orange	24V DC	Red
Brown white/ Orange white	COM	Black
Blue white/Green white	DATA-	White
Blue/ Green	DATA+	Yellow

#### Technical support

E-mail: [hdtickets@hdlautomation.com](mailto:hdtickets@hdlautomation.com)  
 Website: <https://www.hdlautomation.com>

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# Connection Diagram

