# ORing

**WIRELESS**
ACCESS POINT
INDUSTRIAL

# Quick Installation Guide

# IGAP-840D

# Industrial Wireless Access Point

## Introduction

**IGAP-840D** is a reliable WLAN Access Point with 4 Ethernet Gigabit ports and WIFI5 wireless module. It can be configured to operate in AP/Client/Repeater mode. You are able to configure IGAP-840D by WEB interface via LAN port or WLAN interface. IGAP-840D provides Ethernet ports in switch mode to reduce the usage of Ethernet switch ports. Therefore, IGAP-840D series is one of the best communication solutions for wireless applications on the industrial network.

## Package Contents

The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

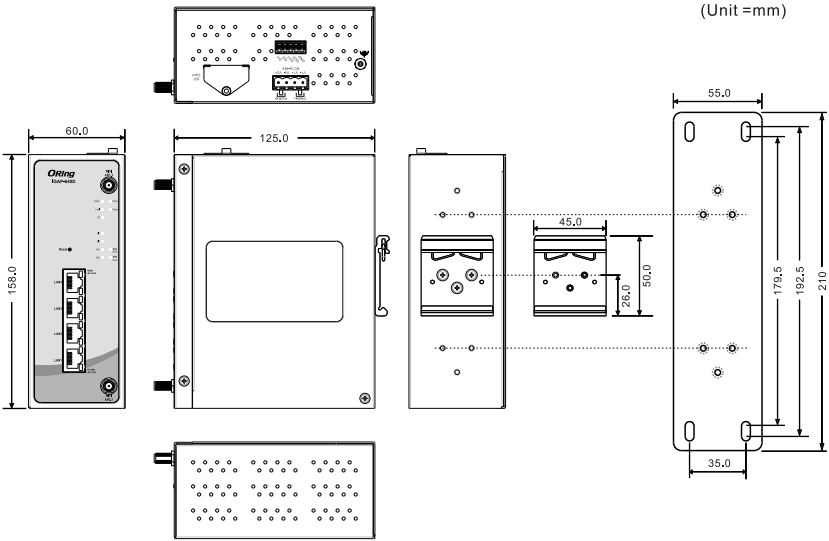| Contents | Pictures | Number |
|---|---|---|
| IGAP-840D | | X 1 |
| CD QRcode | | X 1 |
| Wall-Mount Kit | | X 1 |
| Flat Screw (M3 X5) | | X 6 |
| WIFI Antenna | | X 2 |
| Terminal Block | | 4 Pin X 1 5 Pin X 1 |
| Quick Installation Guide | | X 1 |

## Preparation

Before you begin installing the device, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.
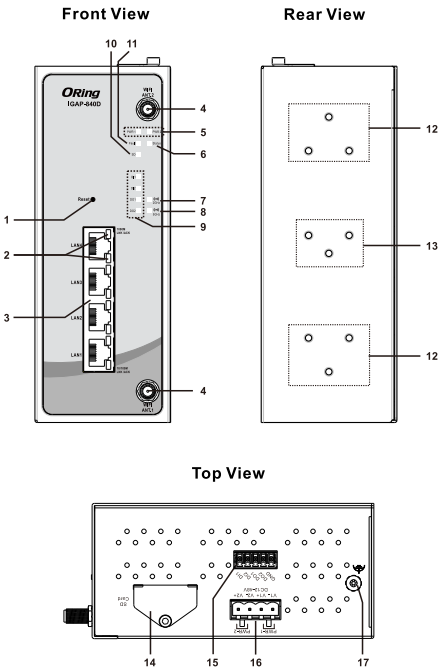
### Safety & Warnings

⚠️ **Elevated Operating Ambient:** If installed in a closed environment, make sure the operating ambient temperature is compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
如果安裝在封閉環境中，請確保工作環境溫度與製造商指定的最高環境溫度兼容。

⚠️ **Reduced Air Flow:** Make sure the amount of air flow required for safe operation of the equipment is not compromised during installation.
確保在安裝過程中不會影響設備安全操作所需的氣流量。

⚠️ **Mechanical Loading:** Make sure the mounting of the equipment is not in a hazardous condition due to uneven mechanical loading.
確保設備的安裝不會因不均勻的機械負荷而處於危險狀態。

⚠️ **Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
在將設備連接到供應電路時, 應考慮電路超載對過電流保護和供電線路可能產生的影響。
在解決這個問題時, 應適當考慮設備外殼標明的額定值。

## Dimension

(Unit =mm)

## Panel Layouts

**Front View**          **Rear View**

10  11
4
5
6
1
7
8
9
2
3
12
13
12
4

**Top View**

14    15    16         17

1. Reset button
2. Ethernet LED
3. Ethernet Port
4. WIFI antenna connector
5. LED for Power
6. LED for Status
7. WIFI 2.4GHz On
8. WIFI 5GHz On
9. Digital High/Low
10. SD card status
11. Fault LED
12. Wall-mount screw holes
13. Din-rail screw holes
14. SD card slot
15. Digital Input/Output
16. Power Input
17. Grounding screw

## Installation

### DIN-rail Installation

**Step 1:** Slant the device and screw the Din-rail kit onto the back of the device, right in the middle of the back panel.
**Step 2:** Slide the device onto a DIN-rail from the Din-rail kit and make sure the device clicks into the rail firmly.
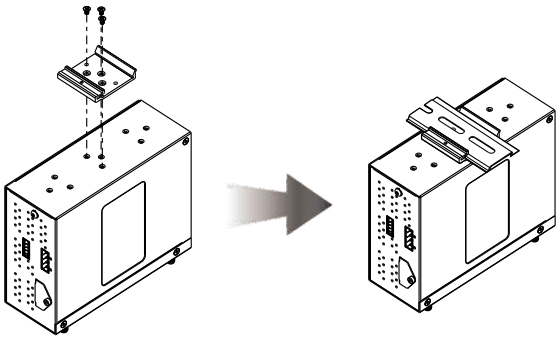
### Wall-mounting

**Step 1:** Screw the two pieces of wall-mount kits onto both ends of the rear panel of the device. A total of six screws are required, as shown below.
**Step 2:** Use the device, with wall mount plates attached, as a guide to mark the correct locations of the wall-mounting screws.
**Step 3:** Insert a screw head through the large part of the keyhole-shaped aperture on the plate, and then slide the device downwards. Tighten the screw for added stability.

(Please use M5 screws)
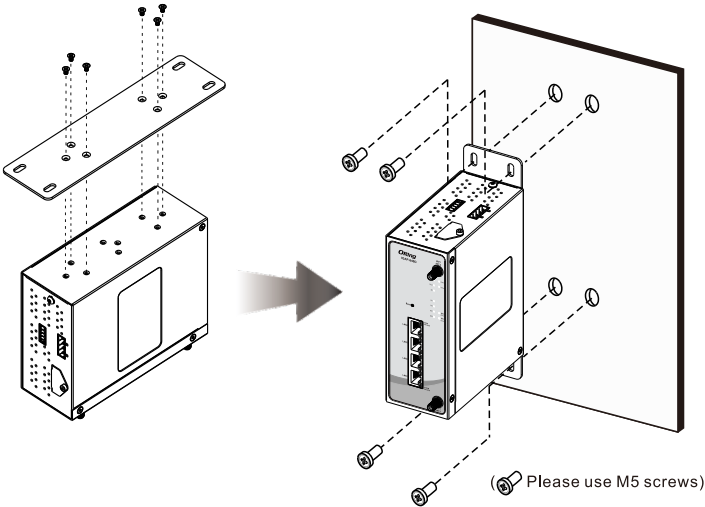
### Network Connection

The device has two 10/100/1000Base-T(X) Ethernet ports. According to the link type, the device uses CAT 3, 4, 5, 5e, UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

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## Wiring

**Power inputs**

The device supports dual redundant power supplies,   Power Supply1 (PWR1) and   Power Supply 2 (PWR2). The connections for PWR1and PWR2 are located on the terminal block.
**STEP 1:** Insert   the  negative/positive  wires  into  the   V-/V+ terminals, respectively.
**STEP 2:** To  keep  the  DC  wires  from  pulling  loose,  use  a  small  flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

**Power connection**

The device has two sets of power inputs, power input 1 and power input 2, on a 4-pin terminal block connector on the top panel. Follow the steps below to wire power inputs.

**STEP 1:** Insert  the  negative/positive  DC  wires  into  the  V-/V+  terminals, respectively.
**STEP 2:** To  keep  the  DC  wires  from  pulling  loose,  use  a  small  flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

**Grounding**

Grounding  and  wire  routing  help  limit  the  effects  of  noise  due  to  electromagnetic interference  (EMI).  Run  the  ground  connection  from  the  ground  screws  to  the  grounding surface prior to connecting devices.

## Network Connection

The device has two 10/100Base-T(X) Ethernet ports. According to the link type, the AP uses CAT 3, 4, 5, 5e, UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

| Cable | Type | Max. Length | Connector |
|---|---|---|---|
| 10Base-T | Cat. 3, 4, 5 100-ohm | UTP 100 m (328 ft) | RJ-45 |
| 100Base-TX | Cat. 5 100-ohm UTP | UTP 100 m (328 ft) | RJ-45 |
| 1000Base-T | Cat. 5/Cat 5e 100-ohm UTP | UTP 100 m (328 ft) | RJ-45 |

**RJ-45 Pin Assignment**

| 10/100 Base-T(X) RJ-45 port | | 1000 Base-T RJ-45 port | |
|---|---|---|---|
| Pin Number | Assignment | Pin Number | Assignment |
| 1 | TD+ | 1 | BI_DA+ |
| 2 | TD- | 2 | BI_DA- |
| 3 | RD+ | 3 | BI_DB+ |
| 4 | Not used | 4 | BI_DC+ |
| 5 | Not used | 5 | BI_DC- |
| 6 | RD- | 6 | BI_DB- |
| 7 | Not used | 7 | BI_DD+ |
| 8 | Not used | 8 | BI_DD- |

Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.
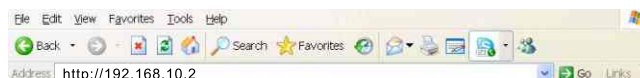
## Configurations

After installing the   device, the green power LED should turn on. Please refer to the following tablet for LED indication.

| LED | Color | Status | Description |
|---|---|---|---|
| PW1 / PW2 | Green | On | Power is on and functioning Normal |
| Fault | Green | On | Fault event occurs |
| Status | Green | On | System Ready |
| | | Blinking | System Booting |
| SD | Green | On | Working |
| DI1 / DI2 DO1 / DO2 | Green | On | High |
| | | Off | Low |
| 2.4GHz LED | Green | On | Working |
| | | Off | RF disable |
| 5GHz LED | Green | On | Working |
| | | Off | RF disable |
| Ethernet Port Indicator | | | |
| 1000Base-T(X) LED | Green | On | port LNK/ACT |
| 10/100Base-T(X) LED | Green | On | port LNK/ACT |

Follow the steps to set up the card:

1. Launch the Internet Explorer and type in IP address of the switch. The default static IP address is **192.168.10.2**

http://192.168.10.2

2. Log in with default user name and password (both   are   admin).

Please enter your user ID and password

ID
Password
Apply    Cancel
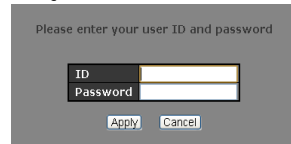
3.After  logging  in,  you  should  see  the  following  screen.  For  more  information  on  configurations, please refer to the user manual.

## Resetting

To restore the device configurations back to the factory defaults, press the Reset  button  for  a  few seconds. Once  the  power  indicator  starts  to  flash,  release  the  button.  The  device  will  then reboot  and  return  to  factory  defaults.

## Specifications

| Oring AP Model | IGAP-840D |
|---|---|
| **Physical Ports** | |
| 10/100/1000Base-T(X) Ports in RJ45 Auto MDI/MDIX | **4LAN** |
| 5-Pin Terminal Block | **DI x 2** and **DO x 2 :** Dry Contact: On: short to GND,  Off: open Wet Contact (DI to COM/GND): On: 0 to 3VDC,  Off: 10 to 30VDC |
| **WLAN Interface** | |
| Antenna Connector | 2 x Reverse SMA Female |
| Modulation | 802.11a: OFDM 802.11b: CCK, DQPSK, DBPSK 802.11g: OFDM 802.11n: BPSK, QPSK, 16-QAM, 64-QAM 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM |
| Frequency Band | America / FCC: 2.412~2.462 GHz (11 channels ) 5.180~5.240 GHz & 5.745~5.825 GHz ( 9 channels ) Europe CE / ETSI: 2.412~2.472 GHz ( 13 channels ) 5.180~5.240 GHz ( 4 channels ) |
| Transmission Rate | 802.11b: 1/2/5.5/11 Mbps 802.11a/g: 6/9/12/18/24/36/48/54 Mbps 802.11n: UP to 300 Mbps 802.11ac: up to 867Mbps |

| | |
|---|---|
| Transmit Power | IEEE 802.11a: 21dBm ± 2dBm@54Mbps IEEE 802.11b: 23dBm ± 2dBm@11Mbps IEEE 802.11g: 20dBm ± 2dBm@54Mbps IEEE 802.11gn HT20: 18dBm ± 2dBm @MCS7 IEEE 802.11gn HT40: 18dBm ± 2dBm @MCS7 IEEE 802.11an HT20: 20dBm ± 2dBm @MCS7 IEEE 802.11an HT40: 20dBm ± 2dBm @MCS7 IEEE 802.11ac VHT80: 20dBm ± 2dBm @MCS9 |
| Receiver Sensitivity | IEEE 802.11a : -75dBm ± 2dBm@54Mbps IEEE 802.11b : -90dBm ± 2dBm@11Mbps IEEE 802.11g : -75dBm ± 2dBm@54Mbps IEEE 802.11gn HT20:-72dBm ± 2dBm@MCS7 IEEE 802.11gn HT40:-70dBm ± 2dBm@MCS7 IEEE 802.11an HT20:-72dBm ± 2dBm@MCS7 IEEE 802.11an HT40:-69dBm ± 2dBm@MCS7 IEEE 802.11ac VHT80:-60dBm ± 2dBm@MCS9 |
| Encryption Security | WEP: (64-bit ,128-bit key supported) WPA/WPA2 :802.11i(WEP and AES encryption) WPA-PSK (256-bit key pre-shared key supported) 802.1X Authentication supported TKIP encryption |
| Wireless Security | SSID broadcast disable |
| **Power** | |
| Redundant Input power | Dual DC inputs. 12-48VDC on 4-pin terminal block |
| Power consumption | 13W |
| Overload Current Protection | Present |
| Reverse Polarity Protection | Present |
| **Physical Characteristic** | |
| Enclosure | IP-30 |
| Dimension (W x D x H) | 60(W) x 125(D) x 158(H) mm |
| Weight (g) | 1000g |
| **Environmental** | |
| Storage Temperature | -40 to 85°C (-40 to 185°F) |
| Operating Temperature | -30 to 70°C (-22 to 158°F) |
| Operating Humidity | 5% to 95% Non-condensing |
| **Regulatory Approvals** | |
| EMI | FCC Part 15, CISPR (EN 55022) class A |
| EMS | EN 61000-4-2 (ESD), EN 61000-4-3 (RS), EN 61000-4-4 (EFT), EN 61000-4-5 (Surge), EN 61000-4-6 (CS), EN 61000-4-8, EN 61000-4-11 |
| Shock | IEC 60068-2-27 |
| Free Fall | IEC 60068-2-31 |
| Vibration | IEC 60068-2-6 |
| Safty | EN 60950-1 |
| **Warranty** | 5 years |

## Ordering Information

| | Model Name | Description |
|---|---|---|
| **Available Model** | IGAP-840D_EU | Industrial WIFI 5 Access Point with 4x10/100/1000Base-T(X), EU band |
| | IGAP-840D_US | Industrial WIFI 5 Access Point with 4x10/100/1000Base-T(X), US band |

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