ORing
WIRELESS
ACCESS POINT
INDUSTRIAL

## Quick Installation Guide

IGAP-820 Series

Industrial Wireless LAN Access Point

Introduction

The **IGAP-820(+)** series are reliable outdoor WLAN access points with one 802.11 ac/g/n wireless modules alongside two Gigabit LAN ports. The two Ethernet ports allow you to form Daisy Chain structure to reduce the use of the ports. The series includes PoE models **(IGAP-820+)** and non-PoE models **(IGAP-820)**. The devices provide dust-tight connection and reverses SMA-type connectors for any reverse SMA-type antennas to extend communication distance. Configurations can be made through the LAN or WLAN interface.

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.

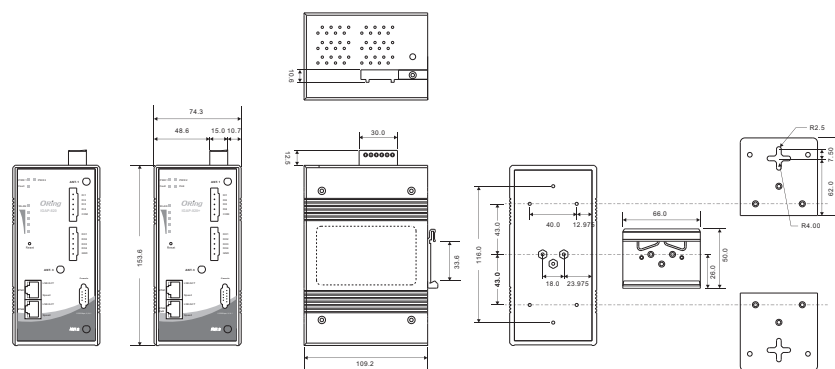| Contents	Pictures	Number
IGAP-820 or IGAP-820+		X 1
CD		X 1
QIG		X 1
Mounting Kit		X 2
2.4GHz/5GHz Antenna		X 3

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.
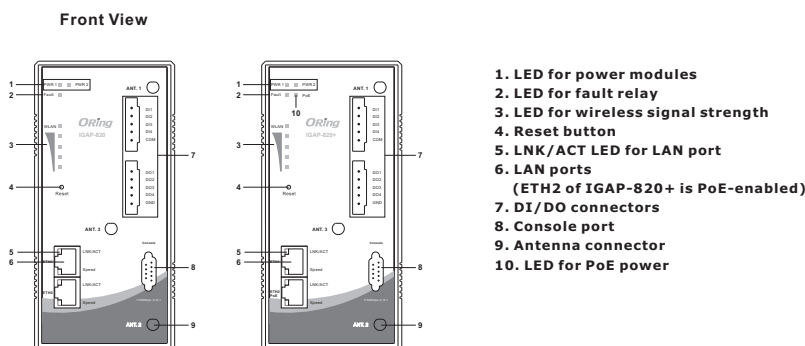
Safety & Warnings

⚠ **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.

⚠ **Reduced Air Flow:** Make sure the amount of air flow required for safe operation of the equipment is not compromised during installation.

⚠ **Mechanical Loading:** Make sure the mounting of the equipment is not in a hazardous condition due to uneven mechanical loading

⚠ **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.
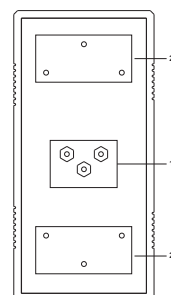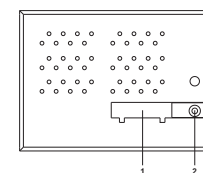
Dimension

Panel Layouts

Front View

1. LED for power modules
2. LED for fault relay
3. LED for wireless signal strength
4. Reset button
5. LNK/ACT LED for LAN port
6. LAN ports
   (ETH2 of IGAP-820+ is PoE-enabled)
7. DI/DO connectors
8. Console port
9. Antenna connector
10. LED for PoE power

Rear View

1. Din-rail screw holes
2. Wall-mount screw holes

Bottom View

1. Terminal block
2. 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.
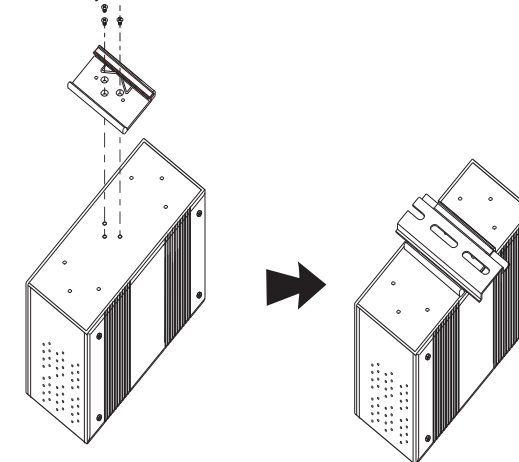
Wall-mounting

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.
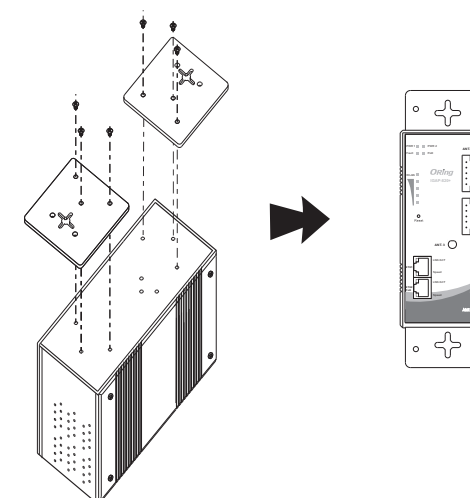
Network Connection

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.

ORing

WIRELESS
ACCESS POINT
INDUSTRIAL

Quick **I**nstallation **G**uide

IGAP-820 Series

Industrial Wireless LAN Access Point

◉ Wiring

Power inputs

The device supports dual redundant power supplies, Power Supply1 (PWR1) and Power Supply 2 (PWR2). The connections for PWR1, PWR2 and the RELAY 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.

PWR-2 Fault PWR-1
1A@24V

V2- V2+   V1- V1+
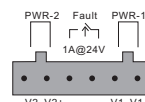
Power connection

The device has two sets of power inputs, power input 1 and power input 2, on a 6-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.

Note: Besides power input, the IGAP-820+ can also be powered by a PoE PSE such as switch via its PoE-enabled port (ETH2 port).

◉ 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
1000Base-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	
Pin Number	Assignment
1	TD+
2	TD-
3	RD+
4	Not used
5	Not used
6	RD-
7	Not used
8	Not used

1000Base-T RJ-45 port	
Pin Number	Assignment
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

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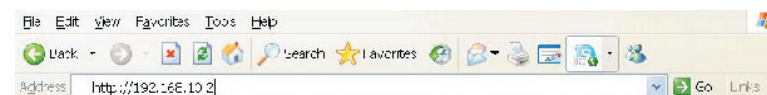
⁝ Configurations

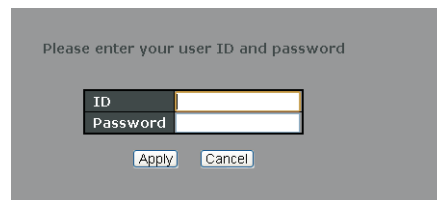After installing the device, the green power LED should turn on. Please refer to the following tablet for LED indication.

LED	Color	Status	Description
P.O.E. (IGAP-820+)	Green	On	PoE power supplied
	Red	On	Power is on and booting up
PWR1/PW2	Green/Red	On	DC power 1/2 is activated.
	Red	On	Power is on and booting up
Fault	Amber	On	Power or link fails
WLAN	Green	On	WLAN activated
		Blinking	Transmitting wireless data
WLAN Strength	Green	On	WLAN signal strength. 1<25%, 2<50%, 3<75%, 4<100%
10/100/1000Base-T(X) Fast Ethernet ports			
LNK/ACT	Amber	On	Port is linked and running at 100Mbps.
	Green	On	Port is linked and running at 1000Mbps.

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**

File Edit View Favorites Tools Help
Back ▾ ⚫ Search Favorites
Address 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 WLAN Access Point Model	IGAP-820	IGAP-820+
Physical Ports		
10/100/1000Base-T(X) Ports in Auto MDI/MDIX	2	
5-Pin Terminal Block	2(DI x 4 and DO x 4) Dry Contact: On: short to GND, Off: open Wet Contact (DI to COM/GND): On: 0 to 3VDC, Off: 10 to 30VDC	
Antenna Connector	3	
PoE P.D Port	Present at ETH2 Fully compliant with IEEE 802.3af Power Device specification Over load & short circuit protection Isolation Voltage: 1000VDC min. Isolation Resistance: 108 ohms min	
WLAN Feature		
Antenna Connector	Reverse SMA Female	
Operating Mode	AP/Client	
Modulation	IEEE802.11a: OFDM IEEE802.11b: CCK/DQPSK/DBPSK IEEE802.11g: OFDM IEEE802.11n: BPSK, QPSK, 16-QAM, 64-QAM IEEE802.11ac: 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: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6Mbps 802.11n: up to 450Mbps 802.11ac: up to 1.3Gbps	
Transmit Power	802.11a: 15dBm ±2dBm@54Mbps 802.11b: 18dBm ±2dBm@11Mbps 802.11g: 15dBm ±2dBm@54Mbps 802.11gn HT20: 13dBm ±2dBm @MCS7 802.11gn HT40: 13dBm ±2dBm @MCS7 802.11an HT20: 13dBm ±2dBm @MCS7 802.11an HT40: 12dBm ±2dBm @MCS7 802.11ac VHT80: 10dBm ±2dBm @MCS9	
Receiver Sensitivity	802.11a: -65dBm ±2dBm@54Mbps 802.11b: -76dBm ±2dBm@11Mbps 802.11g: -65dBm ±2dBm@54Mbps 802.11gn HT20: -64dBm ±2dBm @MCS7 802.11gn HT40: -61dBm ±2dBm @MCS7 802.11an HT20: -64dBm ±2dBm @MCS7 802.11an HT40: -61dBm ±2dBm @MCS7 802.11ac VHT80: -51dBm ±2dBm @MCS9	
Encryption Security	WEP: (64-bit ,128-bit key supported) WPA/WPA2 PSK: TKIP and AES encryption (802.11i) 802.1X Authentication supported	
Wireless Security	SSID broadcast disable and enable	
Protocol Support		
Protocol	ARP,BOOTP, DHCP, DNS, HTTP, IP, ICMP, SNTP, TCP, UDP, RADIUS, SNMP, STP, RSTP	
Fault contact		
Relay	Relay output to carry capacity of 1A at 24VDC	
Power		
Redundant Input power	Dual DC inputs. 12~48VDC on 6 pin terminal block	
Power Consumption(Typ.)	7.5 Watts	8.5 Watts
Overload current protection	Present	
Reverse polarity protection	Present on terminal block	
Physical Characteristic		
Enclosure	IP-30	
Dimension (W x D x H)	74.3 (W) x 109.2 (D) x 153.6(H)mm (2.93x4.30x6.05 inch.)	
Weight (g)	1150g	1155g
Environmental		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-25 to 70°C (-13 to 158°F)	
Operating Humidity	5% to 95% Non-condensing	
Regulatory Approvals		
EMI	FCC Part 15, CISPR (EN55022) class A	
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11	
Shock	IEC60068-2-27	
Free Fall	IEC60068-2-31	
Vibration	IEC60068-2-6	
Safety	EN60950-1	
Warranty	5 years	

ORing

**Copyright© 2016 ORing
All rights reserved.**

RoHS CE FC CE

ORing Industrial Networking Corp.
TEL: +886-2-2218-1066   Website: www.oring-networking.com
FAX: +886-2-2218-1014   E-mail: support@oring-networking.com