

Break down protocol barriers and make industrial digitization more convenient and efficient

# IG902 Series

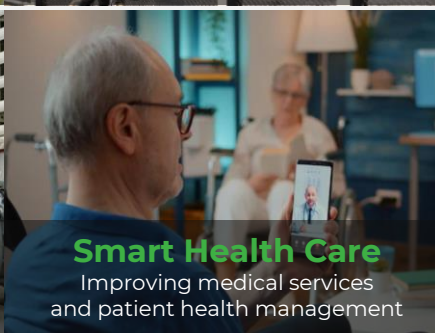
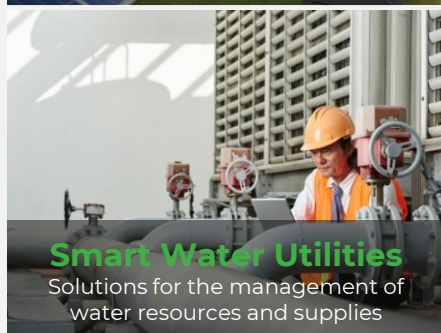
## High performance

## Edge Computer

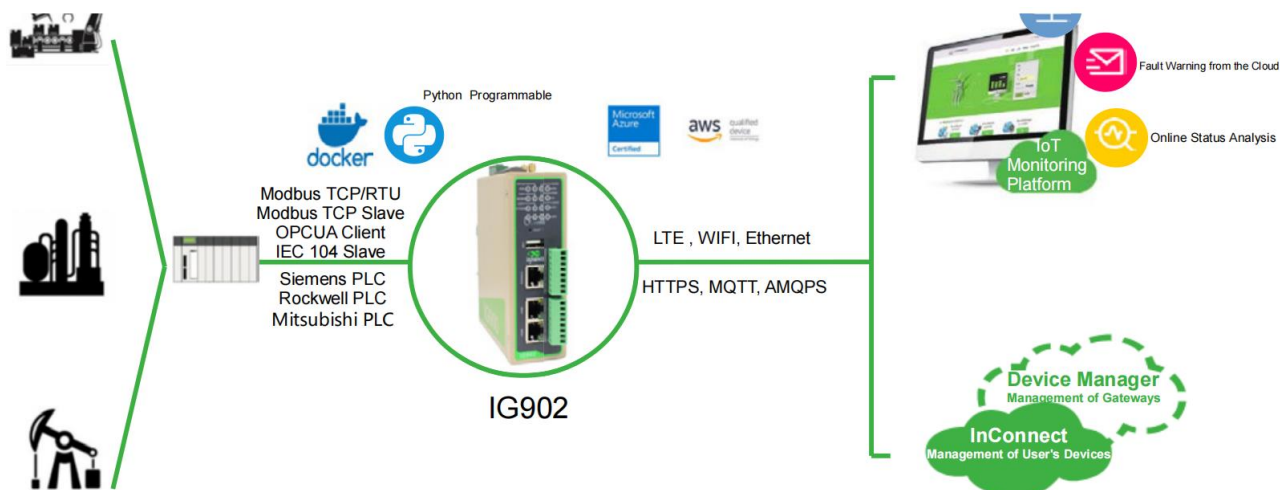


- Multiple means of Internet access
- Rich interfaces
- Built-in DSA
- Cloud Management

InGateway902 is InHand Networks' high-performance edge gateway designed specifically for the industrial Internet of Things (IIoT) sector. With its compact size, rich interface options, and global cellular connectivity support, it offers unparalleled versatility. Featuring Python support for secondary development and integrated DeviceSupervisor™ Agent service, it enables seamless device data acquisition, processing, and cloud integration across various protocols. Additionally, its inclusion of DeviceLive cloud management enhances digitalization efforts for enterprises.



## Solution



## Feature and Advantage

### Performance and Platform

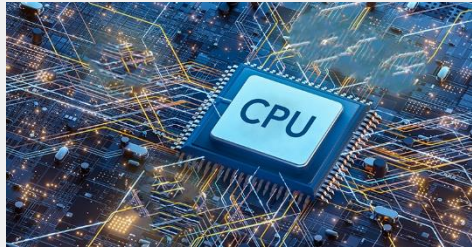
- High-performance ARM Cortex-A8 processor, 1GHz
- High capacity 1GB DDR3 RAM and 8GB eMMC Flash
- Gives the cellular gateway powerful edge computing capability, providing computing resources for data optimization, real-time response, agile connection, and intelligent analysis on edge nodes

### Rich interfaces

- 2x 10/100/1000 Mbps ethernet interface
- 1x RS-232/RS-485+1x RS-485
- 1x USB2.0
- 1x MicroSD
- 4x DI+3x DO+1x DO/Relay output, optional
- GPS, WIFI and Bluetooth optional

### Stable communication

- 4G/Wi-Fi/GbE, etc
- Wired, cellular, Wi-Fi mutual backup, dual SIM failover
- Independent hardware and software watchdog
- Multilevel link detection, communication self-healing



### Secondary development platform

- Providing a secondary development platform based on Python/Docker, to achieve customized development
- Offering an integrated programming development environment (SDK) for easy access to system interfaces and resources

### DeviceSupervisor™ Agent Service

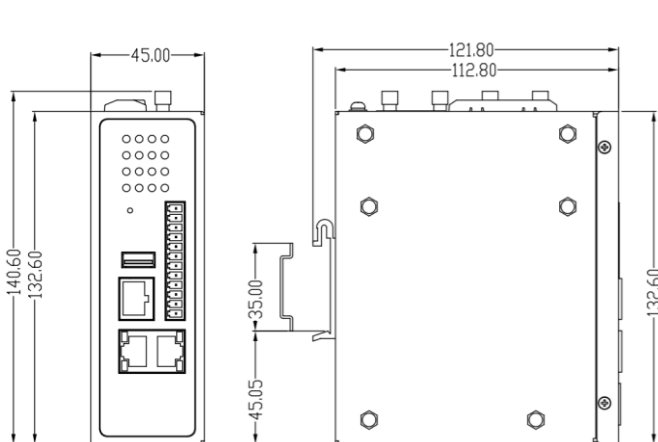
- "Zero code/Low code" easy to achieve data acquisition on the cloud
- Integrate 80+ mainstream data acquisition protocols
- Support data preprocessing
- Integrated data publishing services, public cloud, private cloud, local SCADA and other seamless access

### InHand DeviceLive Cloud Manager

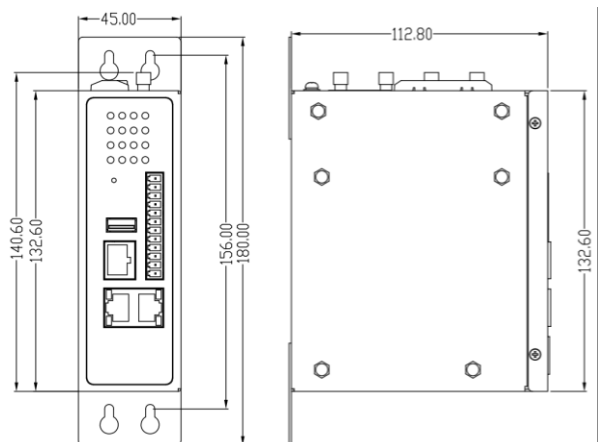
- Supports device remote access
- Supports remote batch management of devices
- Supports DSA remote management
- Supports remote user terminal management



## Dimensions (mm)



DIN Rail Mounting



Wall Mounting

\* Wall Mounting Accessory Number: SSHD160011

# Product Specifications

| IG902 Hardware Specifications    |                                                                                                   |                                                                                                 |                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------|
| Item                             | IG902-B (Basic Version)                                                                           | IG902-H (High-config Version)                                                                   |                                       |
| Hardware Platform                |                                                                                                   |                                                                                                 |                                       |
| CPU                              | ARM Cortex-A8 1GHz                                                                                | ARM Cortex-A8 1GHz                                                                              |                                       |
| RAM                              | 512MB DDR3                                                                                        | 1GB DDR3                                                                                        |                                       |
| FLASH                            | 8GB eMMC                                                                                          | 8GB eMMC                                                                                        |                                       |
| Interfaces                       |                                                                                                   |                                                                                                 |                                       |
| Ethernet Port                    | 2x 10/100/1000Mbps Ethernet ports, WAN/LAN or 2x LAN                                              |                                                                                                 |                                       |
| Industrial Serial Port           | 1x RS232/RS485 + 1x RS485                                                                         |                                                                                                 |                                       |
| IO                               | None                                                                                              | 4x digital input DI<br>3x digital/pulse output DO<br>1x Relay output DO/digital/pulse output DO |                                       |
| Console Port                     | 1x RS232, RJ45 interface                                                                          | Wi-Fi (Optional)                                                                                | Support 2.4G&5G ( 802.11 ac/a/b/g/n ) |
| USB                              | 1x USB 2.0 port                                                                                   | Reset Button                                                                                    | Pinhole button                        |
| SIM Card Slot                    | 1.8V/3V, 2x drawer-type slot                                                                      | MicroSD Expansion                                                                               | Up to 32GB                            |
| GPS (Optional)                   | Support GPS and BeiDou                                                                            |                                                                                                 |                                       |
| Mechanical Features              |                                                                                                   |                                                                                                 |                                       |
| Installation                     | DIN-rail, wall mounting                                                                           | Protection Rating                                                                               | IP30                                  |
| Dimensions                       | 141 × 113 × 45mm                                                                                  | Weight                                                                                          | 626g                                  |
| Housing                          | Metallic structure                                                                                | Cooling                                                                                         | Fan-less cooling                      |
| Power Supply                     |                                                                                                   |                                                                                                 |                                       |
| Power Input                      | DC12-48V                                                                                          | Polarity Reverse & Overcurrent Protection                                                       | Supported                             |
| Power Terminal                   | Unpluggable industrial terminal connection                                                        |                                                                                                 |                                       |
| Ambient Temperature and Humidity |                                                                                                   |                                                                                                 |                                       |
| Working Temp.                    | -25~ 70℃                                                                                          | Ambient Humidity                                                                                | 5~ 95% (non-condensing)               |
| Storage Temp.                    | -40 ~ 85℃                                                                                         |                                                                                                 |                                       |
| Others                           |                                                                                                   |                                                                                                 |                                       |
| Real-time Clock (Optional)       | Embedded real time clock (RTC), powered by super capacitor                                        |                                                                                                 |                                       |
| Indicators                       |                                                                                                   |                                                                                                 |                                       |
| LED                              | POWER, STATUS, WARN, ERROR, MODEM, SIM1, SIM2, TF (card), PYTHON, USER1, USER2, WIFI, GPS, SIGNAL |                                                                                                 |                                       |
| EMC Index                        |                                                                                                   |                                                                                                 |                                       |
| Electrostatic Discharge          | EN61000-4-2, level 3                                                                              |                                                                                                 |                                       |
| Radiated RFI Immunit             | EN61000-4-3, level 3                                                                              |                                                                                                 |                                       |
| Electrical Fast Transients/Burst | EN61000-4-4, level 3                                                                              |                                                                                                 |                                       |
| Surge                            | EN61000-4-5, level 3                                                                              |                                                                                                 |                                       |
| Conducted RFI                    | EN61000-4-6, level 3                                                                              |                                                                                                 |                                       |
| Power Frequency Magnetic Field   | EN61000-4-8, horizontal / vertical 400A/m (>level 3)                                              |                                                                                                 |                                       |
| Ring Wave Immunity               | EN61000-4-12, level 3                                                                             |                                                                                                 |                                       |
| Physical Features                |                                                                                                   |                                                                                                 |                                       |
| Shock                            | IEC60068-2-27                                                                                     | Vibration                                                                                       | IEC60068-2-6                          |
| Free Fall                        | IEC60068-2-32                                                                                     |                                                                                                 |                                       |
| Certification                    |                                                                                                   |                                                                                                 |                                       |

| IG902 Software Specifications   |                                                                                                                                                                              |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item                            | IG902                                                                                                                                                                        |
| Network Interconnection         |                                                                                                                                                                              |
| Network Access                  | APN, VPDN                                                                                                                                                                    |
| Access Authentication           | CHAP/PAP/MS-CHAP/MS-CHAPV2                                                                                                                                                   |
| Network Type                    | LTE, WCDMA(HSPA+) EDGE, GPRS, CDMA                                                                                                                                           |
| LAN Protocol                    | ARP, EtherNet                                                                                                                                                                |
| Network Protocols               |                                                                                                                                                                              |
| IP Application                  | Ping, Traceroute, DHCP Server/Relay/Client, DNS Relay, DDNS, Telnet, SSH, HTTP, HTTPS, TFTP, FTP, SFTP                                                                       |
| IP Routing                      | Static Routing                                                                                                                                                               |
| Network Security                |                                                                                                                                                                              |
| Firewalls                       | Stateful packet inspection (SPI), anti-DoS attack                                                                                                                            |
|                                 | Multicast/Ping filter, Access Control List (ACL)                                                                                                                             |
|                                 | NAT, PAT, DMZ, port mapping, virtual server                                                                                                                                  |
| User Levels                     | Multi-level user authorization                                                                                                                                               |
| AAA                             | Local authentication, Radius, Tacacs+, LDAP                                                                                                                                  |
| Data Security                   | IPSec VPN, GRE, L2TP, OPENVPN, CA (may auto apply)                                                                                                                           |
| Reliability                     |                                                                                                                                                                              |
| Backup                          | VRRP, interface backup, dual-SIM backup                                                                                                                                      |
| Link Detection                  | Heartbeat packet detection, auto-recovery of disconnection                                                                                                                   |
| Embedded Watchdog               | Device self-diagnosis, auto-recovery from operation faults                                                                                                                   |
| WLAN(Optional)                  |                                                                                                                                                                              |
| Standard                        | IEEE 802.11 ac/a/b/g/n                                                                                                                                                       |
| Security                        | Open System, Shared Key, WPA/WPA2 certification, WEP/TKIP/AES encryption                                                                                                     |
| Mode                            | AP, Client modes                                                                                                                                                             |
| Network Management              |                                                                                                                                                                              |
| Configuration Method            | Local or remote HTTP, HTTPS, Telnet, SSH                                                                                                                                     |
| Upgrade Method                  | Local or remote WEB, DeviceLive, TFTP, FTP, SFTP server                                                                                                                      |
| Log                             | Local or remote log export, power-down log saving                                                                                                                            |
| Device Management               | InHand DeviceLive network management platform, batch management gateway                                                                                                      |
| Network Diagnostics             | Ping, Traceroute, Sniffer(network packet capture tool)                                                                                                                       |
| Secondary Development Platform  |                                                                                                                                                                              |
| Open Platform                   | Secondary development environment: Multi-programming language development platform. (Python, Docker)                                                                         |
| Data Acquisition Protocol(*DSA) |                                                                                                                                                                              |
| Industrial Protocol             | Modbus RTU Master/Slave, Modbus TCP Master/Slave, EtherNet/IP, ISO on TCP, OPC UA Client/Server, Mitsubishi MC 3C/3E/3C OverTCP, Mitsubishi CPU Port, FINSUDP, HostLink, PPI |
| Electricity Protocol            | DLT645-2007, IEC101/104, DNP3.0                                                                                                                                              |
| Other Protocol                  | BACnet, CNC                                                                                                                                                                  |
| IoT Platform                    |                                                                                                                                                                              |
| IoT Platform                    | Microsoft Azure, Amazon AWS, and Alibaba Cloud etc.                                                                                                                          |

\*DSA: The DeviceSupervisor Agent (DSA), developed by InHand Networks, is a cutting-edge intelligence software designed to operate on Edge Computer products. It enables clients to quickly implement data collection, processing, protocol conversion, and cloud connectivity through a "zero code/low code" approach. If you need the DSA application on the EdgeComputer product, please contact us to obtain the DSA software package.



Interface Definitions

| Pin | Name  | Definition                          |
|-----|-------|-------------------------------------|
| 1   | V+    | Positive electrode                  |
| 2   | V-    | Negative electrode                  |
| 3   | TXD/A | Serial RS232 send/Serial RS485 +    |
| 4   | RXD/B | Serial RS232 receive/Serial RS485 - |
| 5   | GND   | Serial RS232 signal ground          |
| 6   | A     | Serial RS485 +                      |
| 7   | B     | Serial RS485 -                      |

7 PIN Power/Serial Port Terminal

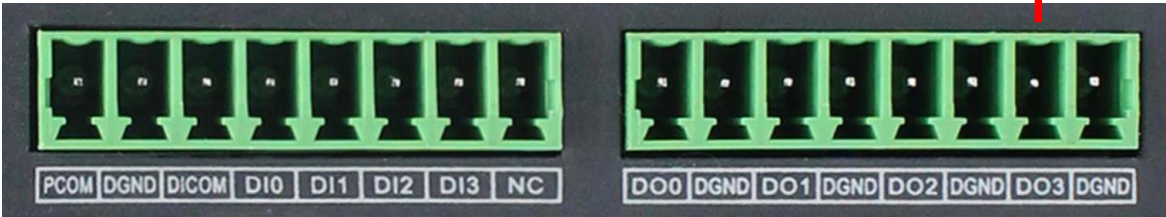


Power/Serial Port Terminal

| Pin | Name             | Definition                                                            | Description                                                                                                                                                                                                                                                                     |
|-----|------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | PCOM             | Dry contact access point                                              | Dry contact status "1": closed<br>Dry contact status "0": disconnected<br>Wet contact status "1": +10~+30V/-30~-10VDC<br>Wet contact status "0": 0~+3V/-3~0V<br>Isolation 3000VDC<br>Pulse signal counter supported, supports up to 100Hz pulse signal<br><br>Isolation 3000VDC |
| 2   | DGND             | Dry contact ground point                                              |                                                                                                                                                                                                                                                                                 |
| 3   | DICOM            | Input common port                                                     |                                                                                                                                                                                                                                                                                 |
| 4   | DI0              | Digital/pulse input port 0                                            |                                                                                                                                                                                                                                                                                 |
| 5   | DI1              | Digital/pulse input port 1                                            |                                                                                                                                                                                                                                                                                 |
| 6   | DI2              | Digital/pulse input port 2                                            |                                                                                                                                                                                                                                                                                 |
| 7   | DI3              | Digital/pulse input port 3                                            |                                                                                                                                                                                                                                                                                 |
| 8   | NC               | None                                                                  |                                                                                                                                                                                                                                                                                 |
| 9   | DO0              | Digital/pulse output port 0                                           |                                                                                                                                                                                                                                                                                 |
| 10  | DGND             | Ground                                                                |                                                                                                                                                                                                                                                                                 |
| 11  | DO1              | Digital/pulse output port 1                                           |                                                                                                                                                                                                                                                                                 |
| 12  | DGND             | Ground                                                                |                                                                                                                                                                                                                                                                                 |
| 13  | DO2              | Digital/pulse output port 2                                           |                                                                                                                                                                                                                                                                                 |
| 14  | DGND             | Ground                                                                |                                                                                                                                                                                                                                                                                 |
| 15  | DO3/Relay Output | DO3: Digital/pulse output port 3<br>Relay Output: 1 A 250 VAC / 30VDC |                                                                                                                                                                                                                                                                                 |
| 16  | DGND             | Ground                                                                |                                                                                                                                                                                                                                                                                 |

I/O Port Terminal Definition

Relay output



I/O Port Terminal

# Ordering Guide

| Model code: IG902-<B/H>-<WMNN>-<IO/RIO/NA>-<DW/NA>-<G/NA> |             |                                                                  |                    |                              |       |     |
|-----------------------------------------------------------|-------------|------------------------------------------------------------------|--------------------|------------------------------|-------|-----|
| Model                                                     | Version     | <WMNN>: Cellular Type &Frequency Band                            | Serial Port        | IO                           | Wi-Fi | GPS |
| IG902-B-LQA8                                              | Basic       | China LTE CAT4 LTE-FDD Band 1/3/5/8                              | RS232 x1, RS485 x1 | NO                           | NO    | NO  |
| IG902-B-LQA8-DW-G                                         | Basic       | LTE-TDD Band 34/38/39/40/41                                      | RS232 x1, RS485 x1 | NO                           | YES   | YES |
| IG902-H-LQA8-IO                                           | High-config | TD-SCDMA Band 34/39 WCDMA Band 1/8                               | RS232 x1, RS485 x1 | 4x DI+4x DO                  | NO    | NO  |
| IG902-H-LQA8-IO-DW-G                                      | High-config | CDMA BCO GSM 900/1800 MHz                                        | RS232 x1, RS485 x1 | 4x DI+4x DO                  | YES   | YES |
| IG902-B-FQ58                                              | Basic       |                                                                  | RS232 x1, RS485 x1 | NO                           | NO    | NO  |
| IG902-B-FQ58-DW-G                                         | Basic       | Europe & APAC LTE CAT4 LTE-FDD Band 1/2/3/5/7/8/20               | RS232 x1, RS485 x1 | NO                           | YES   | YES |
| IG902-H-FQ58-IO                                           | High-config | LTE-TDD Band 38/40/41 UMTS(DC-HSPA+)                             | RS232 x1, RS485 x1 | 4x DI+4x DO                  | NO    | NO  |
| IG902-H-FQ58-IO-DW-G                                      | High-config | Band1/5/8 GSM Band 3/8                                           | RS232 x1, RS485 x1 | 4x DI+4x DO                  | YES   | YES |
| IG902-H-FQ58-D485-RIO-DW-G                                | High-config |                                                                  | RS485 x2           | 4x DI+3x DO+ 1x Relay output | YES   | YES |
| IG902-B-FS39                                              | Basic       |                                                                  | RS232 x1, RS485 x1 | NO                           | NO    | NO  |
| IG902-B-FS39-DW-G                                         | Basic       | North America LTE CAT 6 LTE-FDD Band 2/4/5/13/17                 | RS232 x1, RS485 x1 | NO                           | YES   | YES |
| IG902-H-FS39-IO                                           | High-config | UMTS(DC-HSPA+) Band2/5                                           | RS232 x1, RS485 x1 | 4x DI+4x DO                  | NO    | NO  |
| IG902-H-FS39-IO-DW-G                                      | High-config |                                                                  | RS232 x1, RS485 x1 | 4x DI+4x DO                  | YES   | YES |
| IG902-B-FQ78                                              | Basic       | Australia & South America LET CAT4 LTE-FDD Band 1/2/3/4/5/7/8/28 | RS232 x1, RS485 x1 | NO                           | NO    | NO  |
| IG902-B-FQ78-DW-G                                         | Basic       | LTE-TDD B40                                                      | RS232 x1, RS485 x1 | NO                           | YES   | YES |
| IG902-H-FQ78-IO                                           | High-config | UMTS(DC-HSPA+) Band1/2/5/8                                       | RS232 x1, RS485 x1 | 4x DI+4x DO                  | NO    | NO  |
| IG902-H-FQ78-IO-DW-G                                      | High-config | EDGE/GPRS/GSM 850/900/1800/1900MHz                               | RS232 x1, RS485 x1 | 4x DI+4x DO                  | YES   | YES |
| IG902-B-FQ88                                              | Basic       |                                                                  | RS232 x1, RS485 x1 | NO                           | NO    | NO  |
| IG902-B-FQ88-DW-G                                         | Basic       | Japan LTE CAT4 LTE FDD: Band 1/3/8/18/19/26                      | RS232 x1, RS485 x1 | NO                           | YES   | YES |
| IG902-H-FQ88-IO                                           | High-config | LTE TDD: Band41 WCDMA: Band 1/6/8/19                             | RS232 x1, RS485 x1 | 4x DI+4x DO                  | NO    | NO  |
| IG902-H-FQ88-IO-DW-G                                      | High-config |                                                                  | RS232 x1, RS485 x1 | 4x DI+4x DO                  | YES   | YES |
| IG902-B-FQ98                                              | Basic       |                                                                  | RS232 x1, RS485 x1 | NO                           | NO    | NO  |
| IG902-B-FQ98-DW-G                                         | Basic       | South Korea LTE CAT4 LTE FDD Band 1/3/5/7/8/20                   | RS232 x1, RS485 x1 | NO                           | YES   | YES |
| IG902-H-FQ98-IO                                           | High-config | LTE TDD Band 38/40/41 WCDMA Band 1/5/8                           | RS232 x1, RS485 x1 | 4x DI+4x DO                  | NO    | NO  |
| IG902-H-FQ98-IO-DW-G                                      | High-config | EDGE/GSM Band 3/8                                                | RS232 x1, RS485 x1 | 4x DI+4x DO                  | YES   | YES |
| IG902-B-EN00                                              | Basic       |                                                                  | RS232 x1, RS485 x1 | NO                           | NO    | NO  |
| IG902-B-EN00-DW-G                                         | Basic       | Global No 3G/4G communication module                             | RS232 x1, RS485 x1 | NO                           | YES   | YES |
| IG902-H-EN00-IO                                           | High-config |                                                                  | RS232 x1, RS485 x1 | 4x DI+4x DO                  | NO    | NO  |
| IG902-H-EN00-IO-DW-G                                      | High-config |                                                                  | RS232 x1, RS485 x1 | 4x DI+4x DO                  | YES   | YES |

## About Us

InHand Networks is a leading IoT solutions provider founded in 2001, dedicated to driving digital transformation across industries and empowering customers to unlock their full potential and achieve accelerated growth.

We specialize in delivering industrial-grade connectivity solutions for diverse sectors, such as enterprise networks, industrial and building IoT, digital energy, smart commerce, and mobility. Our comprehensive product portfolio and services cater to various applications worldwide, including smart manufacturing, smart grid, intelligent transportation, smart retail, etc. With a global footprint spanning over 60 countries, we serve customers in China, the United States, France, Germany, the United Kingdom, Italy, and beyond.



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