InHand Networks

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



IG902 Series High-performance Edge Computer

- Multiple Access
- Rich Interfaces
- Built-in DSA
- Cloud Management

1. Product Overview

IG902 is a high-performance industrial edge gateway that combines rich interfaces, protocol interoperability, and cloud-ready edge computing for IIoT deployments.

Key features:

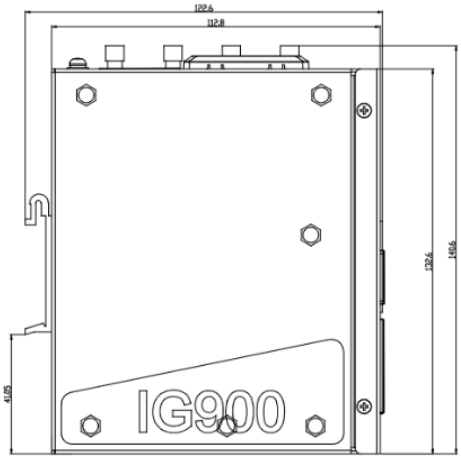
- **High-performance edge compute:** ARM Cortex-A8 1GHz with 1GB DDR3 and 8GB eMMC
- **Rich industrial interfaces:** GE ports, serial, optional DI/DO/relay, USB, MicroSD, optional Wi-Fi/GPS
- **Reliable industrial networking:** Wired/cellular/Wi-Fi backup, dual SIM failover, watchdog, link self-healing
- **Open development:** Python and Docker-based secondary development platform
- **Cloud O&M readiness:** DeviceLive + DSA for remote management and low-code data integration

Core Technical Specifications

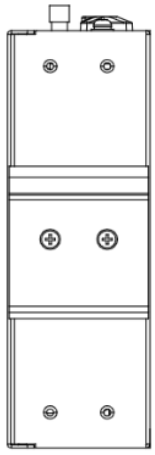
Specification Item	Value
Cellular Network	LTE Cat4/Cat6 (model dependent)
Network Features	APN, VPDN, CHAP/PAP/MS-CHAP/MS-CHAPV2; DHCP Server/Relay/Client; DNS Relay; DDNS; static routing
Security	SPI firewall, ACL, NAT/PAT/DMZ, AAA (Local/Radius/Tacacs+/LDAP), IPSec/GRE/L2TP/OpenVPN/CA
Cloud Management	DeviceLive remote configuration, upgrades, and operations
Secondary Development	Python and Docker secondary development

Specification Item	Value
Data Acquisition Protocols	Modbus RTU/TCP, EtherNet/IP, OPC UA, IEC101/104, DNP3.0, BACnet, CNC
Processor and Memory	ARM Cortex-A8 @1GHz, 1GB DDR3
Storage	8GB eMMC, MicroSD up to 32GB
Ethernet Ports	2 × 10/100/1000Mbps
Serial and I/O	1×RS232/RS485 + 1×RS485 (2×RS485 on some models); optional 4DI+4DO or 4DI+3DO+1 relay
Power Supply	12~48V DC, reverse polarity and overcurrent protection
Operating Temperature and Protection	-25~70°C, IP30

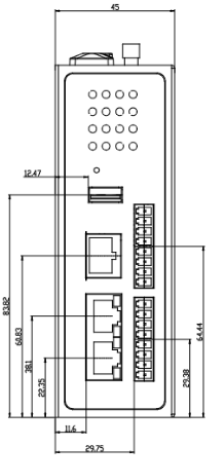
2. Product Dimensions & PIN Definition



Front View



Side View



Interface Diagram

Note:

1. All dimensions are in millimeters (mm).
2. All dimensions are approximate and for reference only.
3. Dimensioned drawings are not intended for machining.

4. Dimensions are subject to part and manufacturing tolerances.
5. Specifications may change without prior notice.

7 PIN Definition

PIN	Definition	Description
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-

I/O Definition

PIN	Definition	Description
1	PCOM	Dry contact access point
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; Relay output: 1A 250VAC / 30VDC
16	DGND	Ground

Notes:

DI input specification:

- Dry-contact status "1": closed
- Dry-contact status "0": disconnected
- Wet-contact status "1": +10 ~ +30V / -30 ~ -10VDC
- Wet-contact status "0": 0 ~ +3V / -3 ~ 0V
- Isolation: 3000VDC
- Pulse signal counter supported, up to 100Hz pulse signal

DO output specification:

- Isolation: 3000VDC

3. Hardware Specifications

Category/Parameter	Specification
CPU and Storage	
CPU	ARM Cortex-A8 @1GHz
RAM	IG902-B: 512MB DDR3 IG902-H: 1GB DDR3 RAM
Flash	8GB eMMC
Connectivity and Interfaces	
Ethernet Ports	2×10/100/1000Mbps Ethernet ports (WAN/LAN or 2×LAN)
I/O Ports	None / 4×DI + 3×DO + 1×Relay output DO or digital/pulse output DO
Serial Ports	1×RS232/RS485 + 1×RS485
SIM Card Slot	1.8V/3V, 2×drawer-type slot
LED Indicators	POWER, STATUS, WARN, ERROR, MODEM, SIM1, SIM2, TF, PYTHON, USER1, USER2, WIFI, GPS, SIGNAL
Console Port	1×console RS232 (RJ45)
USB Port	1×USB 2.0 port
TF	MicroSD expansion up to 32GB
Wi-Fi(optional)	2.4G/5G Wi-Fi (802.11 ac/a/b/g/n)
GNSS(optional)	GPS and BeiDou
Reset Button	Pinhole button

Category/Parameter	Specification
Power and Power Consumption	
Power Input	12~48V DC input
Power Terminal	Unpluggable industrial terminal
Reverse Polarity/Overcurrent Protection	Supported
Mechanical Specifications	
Mounting Method	DIN-rail/wall mounting
Protection Rating	IP30
Housing and Cooling	Metal housing, fanless
RTC (Optional)	Embedded RTC powered by super capacitor
Environment and Certifications	
Storage Temperature	-40~85°C
Operating Temperature	-25~70°C
Ambient Humidity	5~95% RH non-condensing
Physical Characteristics	IEC60068-2-27 shock resistance IEC60068-2-6 vibration resistance IEC60068-2-32 drop resistance

Category/Parameter	Specification
EMC Standard	EN61000-4-2, level 3, Static EN61000-4-3, level 3, Radiation Electric Field EN61000-4-4, level 3, Pulsed Electric Field EN61000-4-5, level 3, Surge EN61000-4-6, level 3, Conducted Distubance Immunity EN61000-4-8, Power Frequency Field Resistance, horizontal / vertical 400A/m (>level 3) EN61000-4-12, level 3, Shock Wave Resistance
Certifications	CE,FCC, PTCRB, RCM, IC, IMDA, AT&T, MIC&JATE, MSIP, EAC,ANATEL, UKCA

4. Software Specifications

Category/Parameter	Specification
Operating System	Custom Linux
Network Features	
Network Access	APN, VPDN
Access Authentication	CHAP/PAP/MS-CHAP/MS-CHAPV2
Network Type	LTE, WCDMA(HSPA+), EDGE, GPRS, CDMA
LAN Protocols	ARP, EtherNet
IP Applications	Ping, Traceroute, DHCP Server/Relay/Client, DNS Relay, DDNS, Telnet, SSH, HTTP, HTTPS, TFTP, FTP, SFTP
IP Routing	Static routing
Security	
User Management	Multi-level users

Category/Parameter	Specification
Network Security	SPI firewall, anti-DoS attack, multicast/ping filter, ACL, NAT, PAT, DMZ, port mapping, virtual server
Data Security	IPSec VPN, GRE, L2TP, OpenVPN, CA
CA Certificates	Supported (may auto apply)
AAA (Authentication, Authorization, Accounting)	Local/Radius/Tacacs+/LDAP
Reliability	
Link Detection	Heartbeat packet detection, auto-recovery of disconnection
Embedded Watchdog	Device self-diagnosis, auto-recovery from operation faults
Backup Mechanism	VRRP, interface backup
Dual-SIM Switching	Dual-SIM backup
WLAN (Optional)	
WLAN Standard	IEEE 802.11 ac/a/b/g/n
WLAN Security	Open System, Shared Key, WPA/WPA2, WEP/TKIP/AES encryption
WLAN Mode	AP, Client modes
Open Platform and Data Acquisition Protocols (DSA)	
Python Secondary Development	Secondary development platform with Python and Docker

Category/Parameter	Specification
IoT Platform	Microsoft Azure, Amazon AWS, Alibaba Cloud, etc.
Industrial Protocols	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 Protocols	DLT645-2007, IEC101/104, DNP3.0
Other Protocols	BACnet, CNC
Network Management	
Configuration Methods	Local/remote HTTP/HTTPS/Telnet/SSH config
Upgrade Methods	WEB/DeviceLive/TFTP/FTP/SFTP upgrades
Log	Local or remote log export, power-down log saving
Remote Management	DeviceLive-based remote access and remote batch device management
Network Diagnostics	Ping, Traceroute, Sniffer (network packet capture tool)

5. Ordering Information

Model Rule

Model code: IG902-<B/H>-<WMNN>-<IO/RIO/NA>-<DW/NA>-<G/NA>

<B/H>: Product version (H shown in this release)
<WMNN>: Cellular Type & Frequency Band
<IO/RIO/NA>: I/O option (`IO` =4DI+4DO, `RIO` =4DI+3DO+Relay, `NA` =No extended I/O)
<DW/NA>: Wi-Fi option (`DW` =Wi-Fi enabled)

<G/NA>: GPS option

Model List

Model	Version	Region	<WMNN>: Cellular Type & Band	Serial Port	<IO/RIO/NA>	<DW/NA>	<G/NA>
IG902-H-LQA8	High-config	China	LTE CAT4; LTE-FDD B1/B3/B5/B8; LTE-TDD B34/B38/B39/B40/B41; TD-SCDMA B34/B39; WCDMA B1/B8; CDMA BC0; GSM 900/1800MHz	RS232×1 + RS485×1	IO	NA	NA
IG902-H-LQA8-IO-DW-G	High-config	China	LTE CAT4; LTE-FDD B1/B3/B5/B8; LTE-TDD B34/B38/B39/B40/B41; TD-SCDMA B34/B39; WCDMA B1/B8; CDMA BC0; GSM 900/1800MHz	RS232×1 + RS485×1	IO	DW	G
IG902-H-FQ58	High-config	Europe & APAC	LTE CAT4; LTE-FDD B1/B2/B3/B5/B7/B8/B20; LTE-TDD B38/B40/B41; UMTS B1/B5/B8; GSM B3/B8	RS232×1 + RS485×1	IO	NA	NA
IG902-H-FQ58-IO-DW-G	High-config	Europe & APAC	LTE CAT4; LTE-FDD B1/B2/B3/B5/B7/B8/B20; LTE-TDD B38/B40/B41; UMTS B1/B5/B8; GSM B3/B8	RS232×1 + RS485×1	IO	DW	G
IG902-H-FQ58-D485-RIO-DW-G	High-config	Europe & APAC	LTE CAT4; LTE-FDD B1/B2/B3/B5/B7/B8/B20; LTE-TDD B38/B40/B41; UMTS B1/B5/B8; GSM B3/B8	RS485×2	RIO	DW	G
IG902-H-FS39-IO	High-config	North America	LTE CAT6; LTE-FDD B2/B4/B5/B13/B17; UMTS B2/B5	RS232×1 + RS485×1	IO	NA	NA
IG902-H-FS39-IO-DW-G	High-config	North America	LTE CAT6; LTE-FDD B2/B4/B5/B13/B17; UMTS B2/B5	RS232×1 + RS485×1	IO	DW	G
IG902-H-FQ78	High-config	Australia & South America	LTE CAT4; LTE-FDD B1/B2/B3/B4/B5/B7/B8/B28; LTE-TDD B40; UMTS B1/B2/B5/B8; EDGE/GPRS/GSM 850/900/1800/1900MHz	RS232×1 + RS485×1	NA	NA	NA
IG902-H-FQ78-IO-DW-G	High-config	Australia & South America	LTE CAT4; LTE-FDD B1/B2/B3/B4/B5/B7/B8/B28; LTE-TDD B40; UMTS B1/B2/B5/B8; EDGE/GPRS/GSM 850/900/1800/1900MHz	RS232×1 + RS485×1	IO	DW	G
IG902-H-FQ88	High-config	Japan	LTE CAT4; LTE-FDD B1/B3/B8/B18/B19/B26; LTE-TDD B41; WCDMA B1/B6/B8/B19	RS232×1 + RS485×1	IO	NA	NA
IG902-H-FQ88-IO-DW-G	High-config	Japan	LTE CAT4; LTE-FDD B1/B3/B8/B18/B19/B26; LTE-TDD B41; WCDMA B1/B6/B8/B19	RS232×1 + RS485×1	IO	DW	G
IG902-H-FQ98	High-config	South Korea	LTE CAT4; LTE-FDD B1/B3/B5/B7/B8/B20; LTE-TDD B38/B40/B41; WCDMA B1/B5/B8; EDGE/GSM B3/B8	RS232×1 + RS485×1	IO	NA	NA

IG902-H-FQ98-IO-DW-G	High-config	South Korea	LTE CAT4; LTE-FDD B1/B3/B5/B7/B8/B20; LTE-TDD B38/B40/B41; WCDMA B1/B5/B8; EDGE/GSM B3/B8	RS232×1 + RS485×1	IO	DW	G
IG902-H-EN00	High-config	Global (No Cellular)	No 3G/4G module	RS232×1 + RS485×1	IO	NA	NA
IG902-H-EN00-IO-DW-G	High-config	Global (No Cellular)	No 3G/4G module	RS232×1 + RS485×1	IO	DW	G

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