



## FEATURE HIGHLIGHTS

- Access data through Modbus/TCP/RTU/ASCII
- Supports MQTT for IIoT applications
- 2 x redundant LAN ports
- Optional WiFi version with Client mode
- Up to 20 x different I/O combinations available
- Industrial EMC protection
- Wide operating temperature range: -40°C~70°C\*

## PRODUCT DESCRIPTION

As an IIoT I/O module, ATOP's I05202 Series is a compact solution for connecting digital and analog devices and sensors, enabling you to monitor, acquire and process data from remote sensors and control digital and analog outputs. The I05202 Series is a cost-effective solution for integrating existing applications into an IIoT framework, such as automated manufacturing, building management and control, and agricultural and irrigation systems.

For applications in which running cable can be impractical, then the I05202 WiFi-equipped version is a cable-free solution for widely disappeared devices and sensors, which also allows for better scalability for operations that continue to evolve and grow.

Offering plug-and-play simplicity, the I05202 Series supports numerous protocols, including Modbus TCP/RTU/ASCII, MQTT and SNMP. Using the intelligent processing and publishing features of the I05202 Series, data can be polled, logged, or even automatically pushed when I/O statuses change.

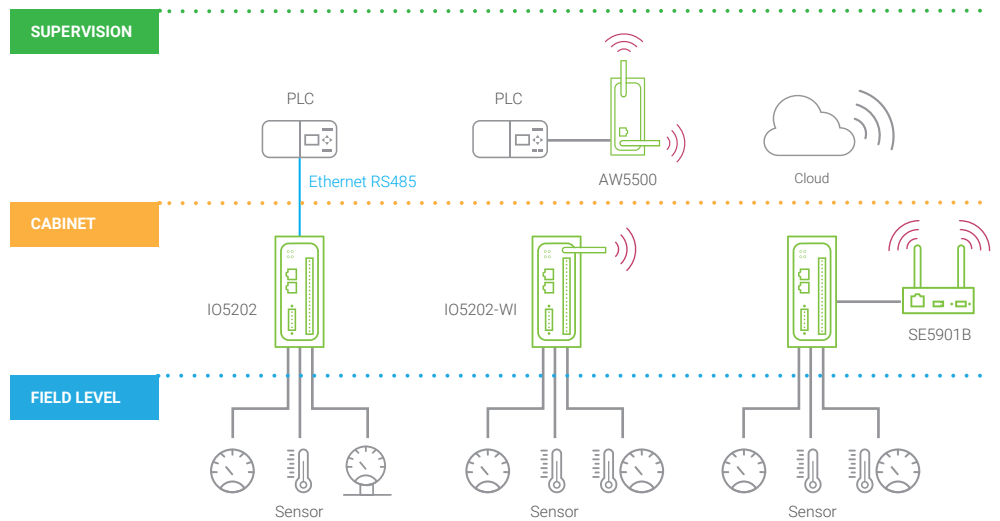
Supporting numerous configurations options to support various types of digital I/O, analog I/O, and relay scenarios, the I05202 Series has been designed for demanding industrial applications that require compact solutions while delivering high network performance. Supporting a wide operating temperature range of -40°C~70°C\* and Industrial EMC protection, the I05202 Series can perform under a variety of environmental conditions, such as power input voltage, shock, drop and vibration.

\* non-wireless models only

## APPLICATION

In situations where running cable is impractical, IO5202 WiFi-equipped version comes handy as a cable-free solution for widely disappeared devices and sensors. It also allows for better scalability for operations that continue to evolve and grow.

The IO5202 Series supports **Modbus TCP/RTU/ASCII, MQTT** and **SNMP**. Using the intelligent processing and publishing features, data can be polled, logged, or even automatically pushed when I/O statuses change. **Also, data can be pushed to connect and interact with a public or private cloud servers.**



## AVAILABLE COMBINATION

| Model Name           | Serial port | Digital I/Os | Relay Outputs | Analog Inputs | Analog Outputs | Wi-Fi | Remark                   |
|----------------------|-------------|--------------|---------------|---------------|----------------|-------|--------------------------|
| IO5202-DB-16-0-0-0   | DB9         | 16           | 0             | 0             | 0              | No    | 8 DI/ 8 DO               |
| IO5202-TB-16-0-0-0   | TB5         | 16           | 0             | 0             | 0              | No    | 8 DI/ 8 DO               |
| IO5202-DB-0-0-8-0    | DB9         | 0            | 0             | 8             | 0              | No    |                          |
| IO5202-TB-0-0-8-0    | TB5         | 0            | 0             | 8             | 0              | No    |                          |
| IO5202-DB-6-2-4-0    | DB9         | 6            | 2             | 4             | 0              | No    |                          |
| IO5202-TB-6-2-4-0    | TB5         | 6            | 2             | 4             | 0              | No    |                          |
| IO5202-DB-8-4-0-0    | DB9         | 8            | 4             | 0             | 0              | No    | 8 DIO, Jumper Selectable |
| IO5202-TB-8-4-0-0    | TB5         | 8            | 4             | 0             | 0              | No    | 8 DIO, Jumper Selectable |
| IO5202-DB-0-0-4-4    | DB9         | 0            | 0             | 4             | 4              | No    |                          |
| IO5202-TB-0-0-4-4    | TB5         | 0            | 0             | 4             | 4              | No    |                          |
| IO5202-DB-16-0-0-0-W | DB9         | 16           | 0             | 0             | 0              | Yes   | 8 DI/ 8 DO               |
| IO5202-TB-16-0-0-0-W | TB5         | 16           | 0             | 0             | 0              | Yes   | 8 DI/ 8 DO               |
| IO5202-DB-0-0-8-0-W  | DB9         | 0            | 0             | 8             | 0              | Yes   |                          |
| IO5202-TB-0-0-8-0-W  | TB5         | 0            | 0             | 8             | 0              | Yes   |                          |
| IO5202-DB-6-2-4-0-W  | DB9         | 6            | 2             | 4             | 0              | Yes   |                          |
| IO5202-TB-6-2-4-0-W  | TB5         | 6            | 2             | 4             | 0              | Yes   |                          |
| IO5202-DB-8-4-0-0-W  | DB9         | 8            | 4             | 0             | 0              | Yes   | 8 DIO, Jumper Selectable |
| IO5202-TB-8-4-0-0-W  | TB5         | 8            | 4             | 0             | 0              | Yes   | 8 DIO, Jumper Selectable |
| IO5202-DB-0-0-4-4-W  | DB9         | 0            | 0             | 4             | 4              | Yes   |                          |
| IO5202-TB-0-0-4-4-W  | TB5         | 0            | 0             | 4             | 4              | Yes   |                          |

## SPECIFICATIONS

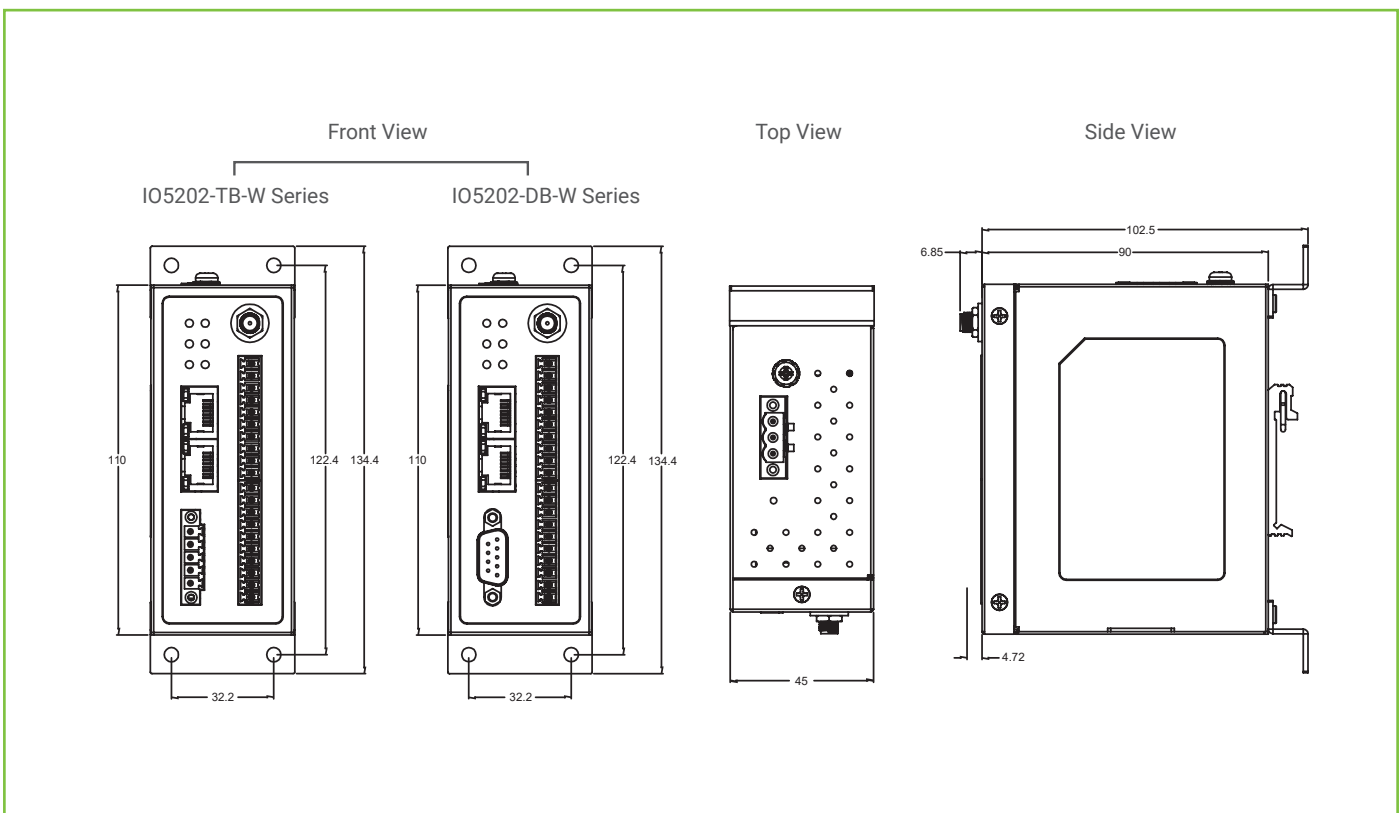
| Technical Specifications                               |   |
|--|---|
| Model Name   | I05202  |
| Ethernet   |   |
| Compliance   | IEEE802.3 for 10BASE-T<br>IEEE802.3u for 100BASE-T(X)   |
| Number of ports<br>Transmission Rate<br>Auto MDI/MDI-X | 2x RJ45<br>10/100 Mbps<br>Yes   |
| Serial   |   |
| Mode   | RS-232/ RS-422 / RS-485 (2-wire and 4-wire)   |
| Number of ports  | 1x  |
| Connector  | 5-pin 3.81mm Terminal Block (-TB models) or 9-pin D-Sub9 (-DB models)   |
| Baud rate  | 1200~234,000 bps  |
| Data bits  | 7,8 software selectable   |
| Stop bits  | 1,2 software selectable   |
| Auto-detection   | RS-485 auto-detection by hardware   |
| Wireless LAN (-W version only)                         |   |
| Standard   | 802.11b (2.4GHz)<br>802.11g (2.4GHz)<br>802.11n (2.4GHz)  |
| Antennas   | 1x RP-SMA(F) connector  |
| Max. Throughput  | 72.2Mbps using 20MHz bandwidth - 150Mbps using 40MHz bandwidth  |
| Frequencies  | FCC/IC (US/CA): 2412~2462MHz; TSI(EU)/Japan: 2412~2472MHz   |
| Encryption   | WPA, WPA2, 802.1x, 802.11i, Open, Shared Key, Pair-wise-key authentication  |
| Power  |   |
| Input Voltage  | 12-48VDC  |
| Input Current  | 0.6~0.2A  |
| Max. Power Consumption                                 | 9.6W  |
| Reverse polarity protection                            | Present   |
| Connector  | 5.08mm 3-Pin Lockable Terminal Block  |
| LED  |   |
| Indicators   | PWR, RUN, RJ45 Act/Link, COM1 Tx, COM1 Rx, Wireless   |
| Software features                                      |   |
| Protocols  | TCP, IPv4, UDP, DHCP Client/Server, HTTP, HTTPS, NTP client, Telnet, ARP, SN-<br>MPv1,v2c,v3, serial console(on-board connector), MQTT, SMTP/ SMTP with TLS |

|                                 |  |
|---------------------------------|--|
| Wireless Options (-W only)      | Client mode  |
| I/O access                      | Modbus TCP/RTU/ASCII, MQTT publisher/subscriber                |
| Other I/O software features     | Mirror function  |
| <b>Physical Characteristics</b> |  |
| Housing                         | IP30 protection according to EN 60529                          |
| Material                        | SPCC   |
| Dimension (W x H x D)           | 45.3 x 89.6 x 110 mm   |
| Weight                          | 350g   |
| Installation                    | DIN-rail or wall-mount (optional)                              |
| <b>Environmental Limits</b>     |  |
| Operating Temperature           | -40~70°C (-40~158°F) - 0~65°C (34~149°F) Wireless version only |
| Storage Temperature             | -40~85°C (-40~185°F) - -20~85C (-4~185F) Wireless version only |
| Ambient Relative Humidity       | 5~95% RH (non-condensing)                                      |

|                            |  |
|----------------------------|--|
| <b>I/O Specifications</b>  |  |
| <b>Digital Inputs</b>      |  |
| Input Type                 | Single status (wet or dry contact) or counter                                |
| Dry contact                | Logic 1: short to GND, Logic 0: open   |
| Wet contact                | Logic 1: 0 to 3 VDC, Logic 0: 10 to 30 VDC                                   |
| Counter Frequency          | 250 Hz   |
| Isolation                  | 3K Vrms  |
| <b>Digital Outputs</b>     |  |
| Output Type                | Output or Pulse output   |
| Nominal Voltage            | 30 VDC   |
| Current Rating             | max 500 mA totally   |
| Over-voltage Protection    | 45 VDC   |
| Over-current Protection    | 2.6A   |
| Over-temperature shutdown  | 175°C  |
| Isolation                  | 3K Vrms  |
| <b>Relay Outputs</b>       |  |
| Form                       | Form A power relay   |
| Isolation resistance       | 1G Ω @500VDC   |
| Isolation between contacts | 3K Vrms  |
| <b>Analog Inputs</b>       |  |
| Current contact rating     | Voltage/Current Software Selectable  |
| Input Range                | Voltage: ±60m VDC, ±500m VDC, ±1 VDC, ±5 VDC, ±10 VDC<br>Current: 4 to 20 mA |
| Resolution                 | 16 bits  |

|                       |  |
|-----------------------|--|
| Accuracy              | $\pm 0.1\%$ FSR (Voltage)@ 25 °C<br>$\pm 0.2\%$ FSR (Current)@ 25 °C |
| Sampling Rate         | > 10 samples/sec (per channel)                                       |
| Isolation             | 3K VDC or 2K Vrms  |
| <b>Analog Outputs</b> |  |
| Output Type           | Voltage/Current Software Selectable                                  |
| Voltage Range         | Voltage: $\pm 10$ VDC  |
| Current Range         | Current: 4 to 20 mA  |
| Resolution            | 16 bits  |
| Accuracy              | $\pm 0.1\%$ FSR @ 25 °C  |
| Load Resistor         | Internal resistor, 500 $\Omega$                                      |

## DIMENSIONS & LAYOUT



## REGULATORY APPROVALS

| Regulatory Approvals |   |       |                   |                      |       |
|----------------------|---|-------|-------------------|----------------------|-------|
| Safety               | EN62368-1   |       |                   |                      |       |
| EMC                  | EN55032:2015+AC:2016, EN61000-6-4:2007+A1:2011, EN55024:2010+A1:2015, EN61000-6-2:2005+AC:2005, EN301489-1 v2.2.0 / EN301489-17 v3.2.0<br>FCC Part 15B<br>FCC Part 18 |       |                   |                      |       |
| Radio                | FCC Part 15.247 for WIFI b/g/n<br>EN300328 V2.1.1 for WIFI b/g/n  |       |                   |                      |       |
| Test                 | Version   |       | Item              | Value                | Level |
| IEC 61000-4-2        | 2009  | ESD   | Contact Discharge | ±4KV                 | 2     |
|                      |   |       | Air Discharge     | ±8KV                 | 3     |
| IEC 61000-4-3        | 2010  | RS    | 80-1000MHz        | 10(V/m)              | 3     |
|                      |   |       | 1.4-6.0GHz        | 3(V/m)               | 2     |
| IEC 61000-4-4        | 2012  | EFT   | DC Power Port     | ±1.0KV               | 2     |
|                      |   |       | Signal Port       | ±1.0KV               | 3     |
| IEC 61000-4-5        | 2017  | Surge | DC Power Port     | Line-to Line± 0.5 KV | 2     |
|                      |   |       | DC Power Port     | Line-to Earth± 1 KV  | 2     |
|                      |   |       | Signal Port       | Line-to Earth± 1 KV  | 2     |
| IEC 61000-4-6        | 2013  | CS    | DC Power Port     | 10 V rms             | 3     |
| IEC 61000-4-8        | 2009  | PfMF  | Enclosure         | 30A/m                | 4     |
| Shock                | MIL-STD-810F Method 516.5   |       |                   |                      |       |
| Drop                 | MIL-STD-810F Method 516.5   |       |                   |                      |       |
| Vibration            | MIL-STD-810F Method 514.5 C-1 & C-2   |       |                   |                      |       |
| RoHS                 | Yes   |       |                   |                      |       |
| MTBF                 | 22.66 Years   |       |                   |                      |       |
| Warranty             | 5 Years   |       |                   |                      |       |

## ORDERING INFORMATION

### Ordering Information

| Model name           | Part Number     | Description   |
|----------------------|-----------------|---|
| IO5202-DB-16-0-0-0   | 1P1IO520200001G | 1x RS232/422/485 DB9,2x 10/100Mbps,8 DOs,8 DIs                  |
| IO5202-TB-16-0-0-0   | 1P1IO520200002G | 1x RS232/422/485 TB5,2x 10/100Mbps,8 DOs,8 DIs                  |
| IO5202-DB-0-0-8-0    | 1P1IO520200003G | 1x RS232/422/485 DB9,2x 10/100Mbps,8 AIs                        |
| IO5202-TB-0-0-8-0    | 1P1IO520200004G | 1x RS232/422/485 TB5,2x 10/100Mbps,8 AIs                        |
| IO5202-DB-6-2-4-0    | 1P1IO520200005G | 1x RS232/422/485 DB9, 2x 10/100Mbps, 6DIs, 4 AIs, 2 Rlys        |
| IO5202-TB-6-2-4-0    | 1P1IO520200006G | 1x RS232/422/485 TB5, 2x 10/100Mbps, 6DIs, 4 AIs, 2 Rlys        |
| IO5202-DB-8-4-0-0    | 1P1IO520200007G | 1x RS232/422/485 DB9,2x 10/100Mbps,8DIO, 4 Rlys                 |
| IO5202-TB-8-4-0-0    | 1P1IO520200008G | 1x RS232/422/485 TB5,2x 10/100Mbps,8DIO, 4 Rlys                 |
| IO5202-DB-0-0-4-4    | 1P1IO520200009G | 1x RS232/422/485 DB9,2x 10/100Mbps,4 AIs, 4 AOs                 |
| IO5202-TB-0-0-4-4    | 1P1IO52020000AG | 1x RS232/422/485 TB5,2x 10/100Mbps,4 AIs, 4 AOs                 |
| IO5202-DB-16-0-0-0-W | 1P1IO52020000BG | 1x RS232/422/485 DB9,2x 10/100Mbps,8 DOs,8 DIs Wi-Fi            |
| IO5202-TB-16-0-0-0-W | 1P1IO52020000CG | 1x RS232/422/485 TB5,2x 10/100Mbps,8 DOs,8 DIs Wi-Fi            |
| IO5202-DB-0-0-8-0-W  | 1P1IO52020000DG | 1x RS232/422/485 DB9,2x 10/100Mbps,8 AIs, WiFi                  |
| IO5202-TB-0-0-8-0-W  | 1P1IO52020000EG | 1x RS232/422/485 TB5,2x 10/100Mbps,8 AIs,WiFi                   |
| IO5202-DB-6-2-4-0-W  | 1P1IO52020000FG | 1x RS232/422/485 DB9, 2x 10/100Mbps, 6DIs, 4 AIs, 2 Rlys, Wi-Fi |
| IO5202-TB-6-2-4-0-W  | 1P1IO52020000GG | 1x RS232/422/485 TB5, 2x 10/100Mbps, 6DIs, 4 AIs, 2 Rlys, Wi-Fi |
| IO5202-DB-8-4-0-0-W  | 1P1IO52020000HG | 1x RS232/422/485 DB9,2x 10/100Mbps,8DIO,4 Rlys,WiFi             |
| IO5202-TB-8-4-0-0-W  | 1P1IO52020000IG | 1x RS232/422/485 TB5,2x 10/100Mbps,8DIO,4 Rlys,WiFi             |
| IO5202-DB-0-0-4-4-W  | 1P1IO52020000JG | 1x RS232/422/485 DB9,2x 10/100Mbps,4 AIs, 4 AOs,WiFi            |
| IO5202-TB-0-0-4-4-W  | 1P1IO52020000KG | 1x RS232/422/485 TB5,2x 10/100Mbps,4 AIs, 4 AOs,WiFi            |

### Optional Accessories

| Model name           | Part Number     | Description   |
|----------------------|-----------------|---|
| SDR-75-24            | 50500752240001G | 75W DIN-Rail 24VDC pwr supply,88~264VAC /124~370VDC input                             |
| UN315-1212(US-Y) LV6 | 50500151120003G | Y-Type (5.08 mm) power adaptor, 100-240VAC input, 1.25A @ 12VDC output, US plug, LV6. |
| UNE315-1212(EU-Y)LV6 | 50500151120013G | Y-Type (5.08 mm) adaptor, 100-240VAC input, 1.25A @ 12VDC output, EU plug             |
| ADP-DB9(F)-TB5       | 59906231G       | Female DB9 to Female 3.81mm TB5 Converter   |
| WMK-454-Black        | 70100000000043G | Black Aluminum Wall Mount Kit   |