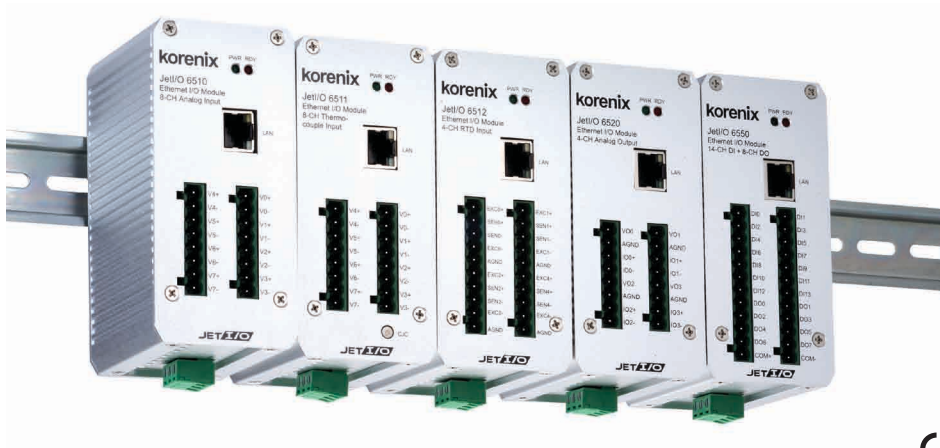


# JetI/O 6500 Series

## Industrial Managed Ethernet I/O Module



### Common Key Feature

- Din-Rail Mount Ethernet Block I/O modules
- Complete solution with multiple channels Analog Input/Output, Digital Input/Output and temperature measurement (Thermocouple, RTD) features
- Support Industrial Modbus/TCP protocol
- Built-in OPC Server for Modbus/TCP
- Configurable by Windows Utilities, built-in Web browser, Telnet, SNMP and C++ example code
- Smart user-defined rules for I/O messaging
- Auto activate events by SNMP Trap
- Built-in watchdog timer and real-time clock
- Aluminum case with IP31 Protection

### Overview

JetI/O 6500 series is a series of Managed Ethernet I/O modules for distributive monitoring and controls. The JetI/O 6500 series equipped with one Ethernet port and multiple channels Analog Input/Output, Digital Input/Output and temperature measurement connectors. Thus users can easily perform I/O data collecting, status changing, automatically activate events... through the Ethernet network.

JetI/O 6500 series support Modbus/TCP protocol which is commonly used in most industrial environments. OPC Server for Modbus/TCP is also provided that user can easily monitor and control the JetI/O devices and integrate the JetI/O with existed HMI/SCADA package. JetI/O 6500 series provide Windows Utilities, web, Telnet, SNMP and C++ example code for configuration and development.

## ▶ Ethernet Based Managed I/O module

Jet/I/O 6500 series are the Standalone Ethernet based managed I/O modules. Jet/I/O 6500 series support Din-Rail vertically mount, users can easily install the Jet/I/O in the control box, construct the cables with limit space. Jet/I/O 6500 series support multiple channels Analog Input, Analog Output, Digital Input, Digital

Output and Temperature measurement, like Thermal Couple Input and RTD Input. The RJ-45 Ethernet port allows user to configure the settings, system maintenance, poll the information/status, monitor I/O status, program logic rules and alarm events over network.

## ▶ HMI/SCADA Compatibility

Jet/I/O 6500 series support Modbus/TCP protocol, Modbus/TCP is the most commonly protocol in communicating between the industrial electronic devices over TCP/IP. Modbus/TCP uses binary encoding of data and TCP/IP's error detection mechanism, allows for measuring temperature and

humidity and communicating the result between the connected devices. Jet/I/O 6500 windows utility also provides OPC Server for Modbus/TCP, so that the HMI/SCADA system can easily integrate the Jet/I/O modules.

## ▶ Ease Configuration & Maintenance

Jet/I/O 6500 series provide several Windows based management utility, programming example files for Device and I/O interfaces' management. The I/O configuration utility allows user to discover the Jet/I/O in the same subnet, configure the I/O interface's setting, configure the alarm setting and SNMP Trap server, monitor I/O status. The Device Finder Utility allows user to upgrade firmware, view the device settings. The built-in OPCServer for Modbus can help the HMI/SCADA system to poll the information of the Jet/I/O

devices. Users also can use the example files, Modbus/TCP to program the I/O configuration/monitoring per specific purposes. In traditional, most of the I/O' information/status are not changed, the periodical polling data sometimes may affect the network performance. The intelligent alarm notification allows users to configure the rules for pre-defined alarms and assign the target IP of the SNMP Traps servers, then the Jet/I/O automatically update the changed info/status to the SNMP Trap manager. This is easy way for maintenance.

## ▶ Naming Rule

### Jet/I/O 65AB

#### A: Major Feature

- 1: Analog Input Series. Includes the RTD input, Thermocouple Input
- 2: Analog Output Series
- 3: Digital Input Series
- 4: Digital Output Series
- 5: Digital Input and Digital Output Series

#### B: Sequence Number

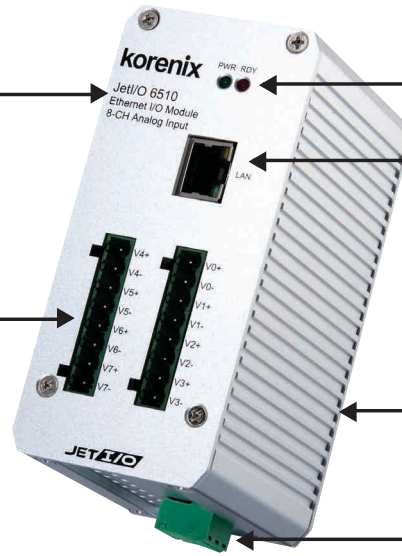
## Jet/O 6500 Series Appearance

### Model Name & Major Features

- Jet/O 6510
- Jet/O 6511
- Jet/O 6512
- Jet/O 6520
- Jet/O 6550

### Pin Assignment

16- /20- /24- Pins  
(Refer to the Manual)



### System LED

PWR: Power  
RDY: Ready

10/100Base-TX  
Fast Ethernet

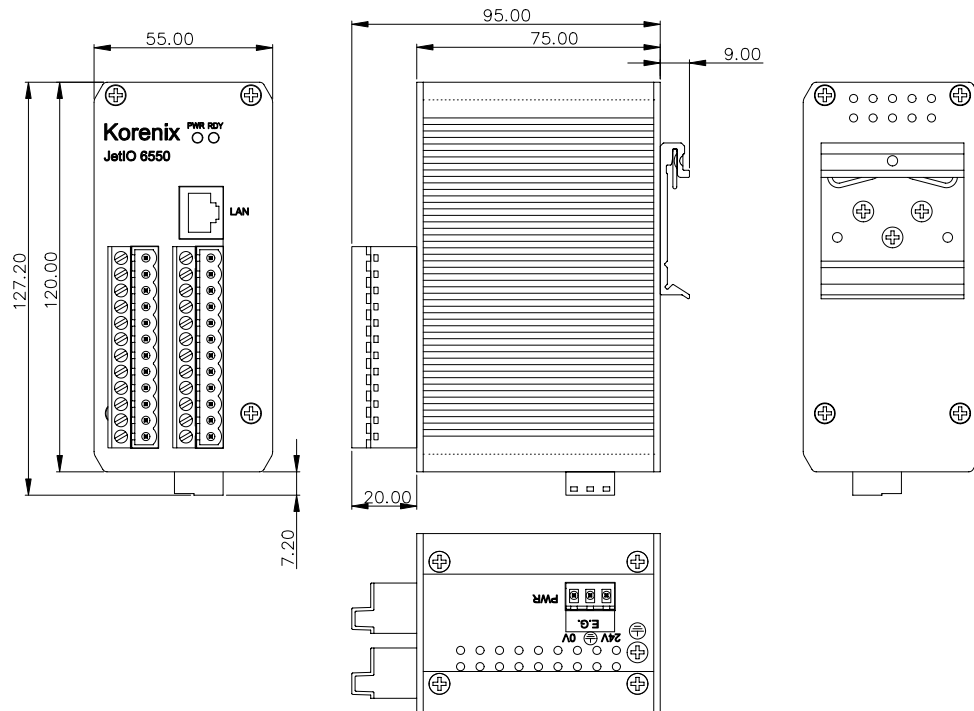
### Din Rail Mounting



### Power Input



## Dimensions



## Specification

### Common Specifications of JetI/O 6500 Series

#### System

**CPU:** 16 bits/100MHZ, RISC-Based

**SDRAM:** 32K bytes

**Flash ROM:** 512K bytes

**EEPROM:** 256 bytes

**Watchdog Timer:** 1.0 sec H/W

**LED:**

PWR: Power Input plugged and On (Green)

RDY: System startup ready (Red)

#### Network Interface

**Ethernet:** IEEE 802.3 10Base-T

IEEE 802.3u 100Base-TX

**Connector:** 1 \* RJ-45, Auto MDI/MDI-X

**Protection:** Built-in 1.5 KV magnetic isolation protection

**LED:**

Upper (LAN Activity): Orange On & Blinking

Lower(10M/100M): 10M (Green Off) /100M(Green ON)

**Network Protocols:** IP, TCP, UDP, SNMP, HTTP, Telnet, BOOTP, DHCP

#### I/O Interface

**I/O Wiring:** 16-/20-/24-pin screw terminal, 5.0 mm pitch

**Input/Output:** 3-pin screw terminal, 5.0 mm pitch

#### Power Requirements

**System Power:** external unregulated +24V

**Power Consumption:** Max. 3W

#### Mechanical

**Dimensions:** 120 (H) x 55 (W) x 75 (D)

**Mounting:** Din-Rail

**Material:** Aluminum

#### Environmental

**Regulatory Approvals:** CE, FCC Class A

**Operating Temperature:** -20 ~ 70°C

**Operating Humidity:** 20 ~ 90% non-condensing

**Storage Temperature:** -20 ~ 70°C

**Warranty:** 3 years

#### Feature

**Configuration:** Windows Utility, Built-in Web browser (HTML), Telnet, SNMP, DHCP Client, TFTP Server for firmware update

**Windows Utility:** Block I/O Utility, Device Fider Utility

**SNMP:** MIB-II: System, SNMP Trap and Private MIB

**SNMP Trap Server:** Up to 4 SNMP Trap Server

**I/O Rules:** High-/Low- Voltage/temperature alarms, If & Then user define-able DI/O counters and pulse, Configurable power-on & safe status setting

**Modbus:** Modbus/TCP Protocol

**OPC Server:** Built-in BlockI/O OPC Server for Modbus/TCP

**Program:** C++ Example code by optional

### Analog/Digital Input/Output Specifications of JetI/O 6500 Series

#### JetI/O 6510

##### Industrial Managed Ethernet 8-CH Analog

##### Input Module



#### Analog Input

**Channels:** 8 Differential

**Resolution:** 16 bits

#### Input Range

**Voltage:** ±10V, ±5V, ±1V, ±500mV, ±150mV

**Current:** ±20mA

**Accuracy:** ±0.05% of FSR ±1LSB

**Sampling Rate:** 10 samples/sec (total)

**Input Impedance:** 10 M $\Omega$

**Calibration:** On Board EEPROM

**Isolation Voltage:** 2500Vrms

## Jet/I/O 6511

### Industrial Managed Ethernet 8-CH Thermocouple Input Module



### Analog Input (Voltage, Current and Thermocouple)

**Channels:** 8 Differential

**Resolution:** 16 bits

**Input Type:** Thermocouple (T/C), mV, V, mA

**Input Range (Voltage/Current):**

±2.5V, ±1V, ±500mV, ±100mV, ±50mV, ±15mV, ±20mA

**Temperature Input Range:** K/J/N/C/E/B/T/R/S T/C

**Isolation Voltage:** 2500Vrms

Type	Range
K	-100°C ~ 1000°C
J	-100°C ~ 900°C
N	-270°C ~ 1300°C
C	10°C ~ 2310°C
E	-240°C ~ 2310°C
B	0°C ~ 1800°C
T	-270°C ~ 400°C
R	-50°C ~ 1530°C
S	-50°C ~ 1700°C

**T/C Open Circuit Detection:** Yes

**Accuracy:** ±0.01% of FSR ±1LSB

**Sampling Rate:** 10 samples/sec (total)

**Input Impedance:** 10 M $\Omega$

**Calibration:** On Board EEPROM

**Isolation Voltage:** 2500Vrms

## Jet/I/O 6512

### Industrial Managed Ethernet 4-CH RTD Input Module



### Analog Input

**Channels:** 4 channels RTD

**Resolution:** 16 bits

**Input Type:** Pt100 and Ni120 RTD

**Input Connections:** 3, 4 or 5 wire

### RTD Input Range

Pt100 (-100°C~100°C  $\alpha=0.00385$ )

Pt100 ( 0°C~100°C  $\alpha=0.00385$ )

Pt100 ( 0°C~200°C  $\alpha=0.00385$ )

Pt100 ( 0°C~600°C  $\alpha=0.00385$ )

Pt100 (-100°C~100°C  $\alpha=0.00392$ )

Pt100 ( 0°C~100°C  $\alpha=0.00392$ )

Pt100 ( 0°C~200°C  $\alpha=0.00392$ )

Pt100 ( 0°C~600°C  $\alpha=0.00392$ )

Nickel 120  $\Omega$  (-80°C ~ 260°C  $\alpha=0.00672$ )

**Accuracy:** ±0.01% of FSR ±1LSB

**Sampling Rate:** 10 samples/sec (total)

**Input Impedance:** 10 M $\Omega$

**Calibration:** On Board EEPROM

**Isolation Voltage:** 2500Vrms

## JetI/O 6520

Industrial Managed Ethernet 4-CH Analog  
Output Module



### Analog Input Feature

**Channels:** 4 Channels, differential  
**Resolution:** 12 bits  
**Output Range:** 0-20mA, 4-20mA, 0-10V,  $\pm 10V$   
**Output Impedance:**  $0.5 \Omega$   
**Current Load Resistor:** 0 to  $500 \Omega$  (source)  
**Programmable Output Slope to Safety Value:**  
 0.125 to 128 mA/sec (Current)  
 0.0625 to 64 V/sec (Voltage)  
**Accuracy:**  $\pm 0.1\%$  of FSR  $\pm 1$ LSB  
**Calibration:** On Board EEPROM  
**Isolation Voltage:** 2500Vrms

## JetI/O 6550

Industrial Managed Ethernet 14-CH DI/8-CH  
DO Module



### Digital Input Feature

**Input Channels:** 14 Channels  
**Input Type:** source type  
**Input Mode:** D/I or event counting with input frequency of 100 Hz max  
**DC Input:** 30V max  
**Threshold Voltage:** 4V  
**Responding Time to Host PC Request:** <2ms  
**Isolation Voltage:** 2500Vrms

### Digital Output Feature

**Output Channels:** 8 Channels  
**Output Type:** SSR output, sink type  
**Output Mode:**  
 Level or pulse output with programmable pulse width  
**Working Range:** 5-40VDC  
**Driving Capacity:** 250mA max  
**Responding Time to Host PC Request:** <2ms  
**Output Initial State:** Programmable  
**Isolation Voltage:** 2500Vrms

## Ordering Information

- JetI/O 6510: Industrial Managed Ethernet 8-CH Analog Input Module
- JetI/O 6511: Industrial Managed Ethernet 8-CH Thermocouple Input Module
- JetI/O 6512: Industrial Managed Ethernet 4-CH RTD Input Module
- JetI/O 6520: Industrial Managed Ethernet 4-CH Analog Output Module
- JetI/O 6550: Industrial Managed Ethernet 14-CH DI and 8-CH DO Module

Includes:

- Quick Installation Guide / DIN Rail Mount kit / Documentation and Software / CD-ROM