ET-7000

ETHERNET DATA ACQUISITION AND CONTROL MODULES

Description

The ET-7000 series modules are remote web-based Ethernet interface modules that feature a built-in web server. They allow configuration, I/O monitoring and I/O control through a regular web browser. Remote control is as easy as surfing the Internet. No programming or HTML skills are needed; users can create dynamic and attractive web pages for I/O monitoring and I/O control. The ET-7000 series offers easy and safe access anytime and anywhere!

The ET-7000 modules are designed for harsh industrial applications and have 2-way isolation on both their Ethernet ports and on the Analog and Digital I/O signals. They also have high ESD protection and a wide operating temparature range of -25 °C to +75 °C.

Ethernet Communication

The ET-7000 series modules are controlled over the company network or over the Internet. Company networks using the IEEE-802 standard are now ubiquitous. You can find network stubs in virtually every office, in the laboratories and out on the production floor. This means that you can connect a ET module to your network virtually anywhere in your facility without having to add a lot of extra wire. Cat 5e cables let you locate the modules up to 100 feet from the closest hub or switch.

ET-7018Z Analog Module

The ET-7000 series modules also support the Modbus/TCP Protocol which makes them easily controlled from Scada software.

SCADA Data Logging Software

EZ Data Logger is a small data logger software package that lets you control the ET-7000 modules. It can be easily applied to small remote I/O systems. With its user-friendly interface, users can quickly and easily build a data logger software without any programming skill. EZ Data Logger is available at no-charge to ET-7000 module owners.

■ Ethernet controlled Data Acquisition and Control Modules connect to the company network.
Data Acquisition and Control where you need it, as you need it.

■ ET 7000 series has a wide selection of IO modules.
Select just the input or output signals you need at a location.

■ Built-in web servers provide HTML control pages.
Operate outputs and read inputs with any web browser.

■ Modules include TCP/Modbus protocol.
Direct controll by standard SCADA software.

■ Web HMI function lets you create your own HTNML pages.
Customize the web pages for your application.

■ Designed for harsh industrial environments.
Built to survive over-voltage shocks, shorts etc.

■ Includes ICP's EZ Scada Data Acquisition Program.
Control multiple modules on one network.

$C\epsilon$ Approved

Popular ET-7000 Configurations

Model	Description	Display
ET-7015	7 RTD Inputs, Pt100, Pt1000,Ni120, Cu100,Cu1000	Included
ET-7017	8 Diff Analog V & I Inputs, 4 Digital OC Outputs	Included
ET-7017-10	8 Diff Analog V & I Inputs with OVP, 4 Digital OC Outputs	Included
ET-7018Z	10 Diff Analog and Thermocouple Inputs, mV/V, 10 s/sec	Included
ET-7042	16 Digital open-collector (OC) Outputs	Included
ET-7044	8 Contact/Level Inputs, 8 Digital OC Ouputs	Included
ET-7051	16 Contact/Level Inputs	Included
ET-7050	12 Contact/Level Inputs, 6 Digital OC Outputs	Included
ET-7052	8 Contact/Level Inputs, 8 Digital OC Outputs	Included
ET-7060	6 Contact/Level Inputs, 6 Power form A relay contacts	Included
ET-7067	8 Power form A relay contacts	Included
ET-7065	6 Contact/Level Digital Inputs, 6 MOS form 'A' Outputs	Included
ET-7066	8 MOS form 'A' Outputs	Included

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ET-7015

The ET-7015 provides 7 RTD inputs with programmable input ranges on all analog channels (Pt100, Pt1000, Ni120, Cu100, Cu1000). Each channel is allowed to configure an individual range that supports 3-wire RTD lead resistance elimination.

ET-7017

The ET-7017 has 8 16-bit differential analog inputs and 4 open-collector digital outputs. The module provides programmable input range on all analog channels (+/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA, 0~20mA and 4~20mA) The digital outputs can be set as alarm outputs. Each analog channel has an individual range, high 240Vrms over voltage protection and is jumper selectable for voltage or current input.

ET-7017-10

The ET-7017-10 has 10 differential or 20 single-ended analog inputs and 4 open-collector digital outputs. Each analog channel has an individual ranges (+/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V, +/-20mA, 0~20mA and 4~20mA); 240Vrms high over-voltage protection and is jumper selectable for voltage or current input.

ET-7018Z

The ET-7018Z has 10 differential analog inputs and 6 open-collector digital outputs. The analog inputs have programmable input range on all analog channels (±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V, ±20 mA, 0 ~ 20 mA, 4 ~ 20 mA and thermocouples). The supported thermocouples are:

Type	Code	Temperature Range °C
J	0E	-210 to +760
K	0F	-270 to +1372
T	10	-270 to +400
E	11	-270 to +1000
R	12	0 to +1768
S	13	0 to +1768
B	14	0 to +1820
N	15	-270 to +1300
C	16	0 to +2320
L	17	-200 to +800
M	18	-200 to +100
L2	19	-200 to +900

Note: L2 is DIN 43710

The digital outputs can be set as alarm outputs. Each analog channel is has its own range setting and has high 240 Vac over voltage protection.

ET-7042

The ET-7042 provides 16 open-collector outputs that sink up to 100 mA with 5 to 30 Vdc loads.

ET-7044

The ET-7044 provides 8 isolated digital inputs with 32-bit counters for contact closures or pulse inputs and 8 isolated open-collector outputs that sink up to 300 mA.

ET-7051

The ET-7051 provides 16 isolated digital inputs with 32-bit counters for contact closures or pulse inputs.

ET-7050

The ET-7050 provides 12 isolated digital inputs with 32-bit counters and 6 isolated open-collector outputs for 5 to 30 Vdc loads that sink up to 100 mA.

ET-7052

The ET-7052 provides 8 isolated digital inputs with 32-bit counters for contact closures or pulse inputs and 8 isolated open-collector outputs for 5 to 30 Vdc loads that sink up to 650 mA.

ET-7060

The ET-7060 provides 6 form 'A' power contacts rated 5 A at 250 Vac/30 Vdc and 6 isolated digital inputs with 32-bit counters for contact closures or pulse inputs

ET-7067

The ET-7067 provides 8 form 'A' contacts rated for 5 A at 250 Vac/30 Vdc.

ET-7065

The ET-7065 provides 6 Photo-MOS form 'A' outputs rated at 60 Vdc/ac and 6 isolated digital inputs with 32-bit counters.

ET-7066

The ET-7066 provides 8 Photo-MOS form 'A' contacts rated at 60 Vdc/ac.

Common Features

The following features apply to all ET-7000 modules:

Ethernet Communication

Each ET-7000 module has a built-in web server that allows the users to easily configure, monitor and control the module from a remote location using a regular web browser. In addition, a Modbus/TCP slave function on the Ethernet port can be used to provide data to remote SCADA software.

An I/O Pair Function lets you create a DI to DO pair through the Ethernet. Once the configuration is completed, an ET-7000 module can poll the status of local DI channels and then use the Modbus/TCP protocol to continuously write to a remote DO device in the background.

Create your own Web page

The Web HMI function allows the users to create dynamic and attractive web pages to monitor and control the I/O points. Users can upload specific I/O layout pictures (bmp, jpg, gif format) and define a description for each I/O point. No HTML or Java skills are needed to create the web pages.

Communication Security

Account and password are needed when logging into the ET-7000 web server. An IP address filter is also included, which can be used to allow or deny connections with specific IP addresses.

Digital I/O Features

All Digital Output modules provide:
- Power on value (On boot up, the DO status is set to the Power-on value)
- Safe value (If Modbus/TCP communication is lost for a certain period, the DO status will be set to the user defined safe value)

All Digital Input modules provide :
- High/Low latched status
- DI channels can also be used as DI status and 32-bit low speed (500 Hz) counters.

ET-7000 SPECIFICATIONS

ET-7015 Specifications

Channels	7 RTD
Connection	2 or 3 wire
RTD Types	Pt100, Pt1000, Ni120, Cu100, Cu1000
Rate	12 samples/sec
Resolution	16-bit
Accuracy	± 0.05%
Zero drift	± 0.5μV/°C
Span drift	± 20μV/°C
3dB BW	15.7 Hz
CMR	150 dB
Normal MR	100 dB
Open wire det	Yes
ESD protection	4 KV/terminal 4 KV for power

ET-7017 Specifications

Analog Inputs	8 diff channels
Input Ranges	±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V and ±20 mA, 0-20 mA or 4-20 mA.
Resolution	16-bit @ 10 s/sec 12-bit @ 50 s/sec
Accuracy	± 0.1% normal ± 0.5% fast
Zero drift	± 20 μV/°C
Span drift	± 25ppm/°C
CMR	86 dB
Normal MR	100 dB
Over voltage	± 240 Vrms
Digital Outputs	4 open collector
Sink current	700 mA max
Load voltage	5-50 Vdc
ESD protection	4 KV/terminal 4 KV for power

ET-7017-10 Specifications

Analog Inputs	10 diff channels or 20 single-ended
Input Ranges	±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V and ±20 mA, 0-20 mA or 4-20 mA.
Resolution	16-bit @ 10 s/sec 12-bit @ 50 s/sec
Input Z	2 M ohms diff 1 Mohms single-ended
Accuracy	± 0.1% normal ± 0.5% fast
Zero drift	± 20 μV/°C
Span drift	± 25ppm/°C
CMR	86 dB
Normal MR	100 dB
Over voltage	± 240 Vrms
ESD protection	4 KV/terminal 4 KV for power

ET-7018Z Specifications

Analog Inputs	8 diff or 6 diff/2 SE
Input Ranges	±15 mV, ±50 mV, ±100 mV, ±1 V, ±2.5 V and ±20 mA
Rate	10 samples/sec
Accuracy	± 0.1%
Zero drift	± 0.5μV/°C
Span drift	25ppm/°C
Input Z	> 300 Kohms
CMR	150 dB @50/60 Hz
NMR	150 dB @50/60 Hz
Over voltage	± 35V
Thermocouples	J, K, T, E, R, S, B, N, C (L, M and LDIN43710
Digital Outputs	6 open collector
Sink current	700 mA max
Load voltage	5-50 Vdc
ESD protection	4 KV/terminal 4 KV for power

ET-7042 Specifications

Digital Outputs	16 open-collector
Sink current	100 mA max
Load voltage	5-30 Vdc
Isolation	3750 volts

ET-7044 Specifications

Digital Inputs	8
Voltage levels	On >= +10 to +50 Vdc Off <= +4 Vdc
Input Z	10 Kohms
Max count	32-bit counter
Max frequency	500 Hz
Pulse Width	> 1 ms
Over voltage	+70 Vdc
Isolation	3750 volts
Digital Outputs	8 open-collector
Sink current	300 mA max
Load voltage	5-30 Vdc
Isolation	3750 volts

ET-7051 Specifications

Digital Inputs	16
Voltage levels	On >= +10 to +50 Vdc Off <= +4 Vdc
Input Z	10 Kohms
Max count	32-bit counter
Max frequency	500 Hz
Pulse Width	> 1 ms
Over voltage	+70 Vdc
Isolation	3750 volts

ET-7050 Specifications

Digital Inputs	12
Voltage levels	On >= +10 to +50 Vdc Off <= +4 Vdc
Input Z	10 Kohms
Max count	32-bit counter
Max frequency	500 Hz
Pulse Width	> 1 ms
Over voltage	+70 Vdc
Isolation	3000 volts
Digital Outputs	6 open-collector
Sink current	100 mA max
Load voltage	5-30 Vdc
Isolation	3750 volts

ET-7052 Specifications

Digital Inputs	8
Voltage levels	On >= +10 to +50 Vdc Off <= +4 Vdc
Input Z	10 Kohms
Max count	32-bit counter
Max frequency	500 Hz
Pulse Width	> 1 ms
Over voltage	+70 Vdc
Isolation	3000 volts
Digital Outputs	8 open-collector
Sink current	100 mA max
Load voltage	5-30 Vdc
Isolation	3750 volts

ET-7060

Relays	6 form 'A'
Contacts	250VAC @ 5A 30VDC @ 5A
Relay On Time	6 ms typ
Relay Off Time	3 ms typ.
Life UL	6,000 ops at 250V, 5A 100,000 ops at 250V, 3A
Life Mech	20 Mops at no load.
Isolation	3000 volts
Digital Inputs	6
Voltage levels	On >= +10 to +50 Vdc Off <= +4 Vdc
Input Z	10 Kohms
Max count	32-bit counter
Max frequency	500 Hz
Pulse Width	> 1 ms
Over voltage	+70 Vdc
Isolation	3750 volts

ET-7000 SPECIFICATIONS

ET-7067

Relays	8 form 'A'
Contacts	250VAC @ 5A
	30VDC @ 5A
Relay On Time	6 ms typ
Relay Off Time	3 ms typ.
Life UL	6,000 ops at 250V, 5A
	100,000 ops at 250V, 3A
Life Mech	20 Mops at no load.
Isolation	3000 volts

ET-7065

PhotoMOS	6 form 'A'
Contacts	60VAC/VDC @ 1A
Relay On Time	1.3 ms typ.
Relay Off Time	0.1 ms typ.
Isolation	1500 volts
Digital Inputs	6
Voltage levels	On >= +10 to +50 Vdc
	Off <= +4 Vdc
Input Z	10 Kohms
Max count	32-bit counter
Max frequency	500 Hz
Pulse Width	> 1 ms
Over voltage	+70 Vdc
Isolation	3750 volts

ET-7066

PhotoMOS	8 form 'A'
Contacts	60VAC/VDC @ 1A
Relay On Time	1.3 ms typ.
Relay Off Time	0.1 ms typ.
Isolation	1500 volts

Physical

Size
123mm x 72mm x 33 mm
(without mounting bracket)

Mounting
DIN rail

Display   (Three LEDs)
Run, Link/Act, Speed

Connectors
Screw terminals for 16 to 26 AWG
wires, 0.15 in centers

Isolation
Ethernet 1,500 volts
Analog and Digital IO 2,500 volts min

ESD Protection
4 KV for each terminal
4 KV for power

Temperature
Operating -25 °C to 75 °C
Storage -40 °C to 85 °C

Relative humidity
5 to 95% (not condensing)

Power
Reverse protection standard
Voltage range 10 to 30 Vdc
Current 0.8 to 1.4 at 24 Vdc

Ethernet Port

10/100 Base TX
Auto MDI/MDI-X Crossover

CE Certification

EMC Directive 89/336/EMC
Emission EN 55022
Noise immunity EN 50082-2C

Included Items

Single unit DIN rail
Paper Manual
Back up manual on CD-ROM
UL/CSA/VDE approved AC power
    Adapters provided for:
    US - 115±10% Vac, 60 Hz (std)
    Europe - 230±10% Vac, 50/60 Hz
    UK - 230±10% Vac, 60 Hz

ET-7066 PhotoMOS Module

ORDERING INFORMATION

	Part Number
Input Module with 7 RTD Inputs	ET-7015
Input Module with 8 differential Analog Inputs, 4 - 700 mA open-collector Digital Outputs	ET-7017
Input Module with 8 differential Analog Inputs with over voltage protection, 4 - 700 mA OC Digital Outputs	ET-7017-10
Input Module with 10 differential Analog or Thermocouple Inputs.	ET-7018Z
Output Module with 16 - 100 mA open-collector Digital Outputs	ET-7042
Output Module with 8 contact/level Inputs and 8 - 300 mA open-collector Digital Outputs	ET-7044
Input Module with 16 contact/level Inputs	ET-7051
Control Module with 12 contact/level Inputs and 6 - 100 mA open-collector Digital Outputs	ET-7050
Control Module with 8 contact/level Inputs and 8 - 650 mA open-collector Digital Outputs	ET-7052
Control Module with 6 contact/level Inputs and 6 - 5A form A contacts	ET-7060
Control Module with 8 - 5A form A contacts	ET-7067
Control Module with 6 PhotoMOS contactoutputs and 6 contact/level inputs and	ET-7065
Control Module with 8 PhotoMOS contact outputs	ET-7066
For 230 VAC adapter, add suffix to specify country/plug style) -E(Europe), -B(UK), -A(Australia) i.e. I-7066-B	