S-EC120P-F-E

EXPANSION I/O™

APPLICATIONS

- Air Handling Units
- Fan Coil Units
- Roof Top Units
- Heat Pumps
- VAVs
- Chillers
- Boilers
- Lighting
- Energy Management
- Refrigeration
- Custom Applications

FEATURES

- LonTalk Protocol
- Free Topology Communication (FTT-10)
- 6 universal inputs with 0-5V, 0-10V, 0-20mA, thermistor or dry contact
- 4 universal outputs with Triac or 0-10V
- 2 digital outputs with Triac
- DIN-rail mounting
- Compact Size for Minimal Panel Space
- 2 Year Limited Warranty

DESCRIPTION

The EXPANSION I/O™ EC120 controller incorporates 12 channels of the most cost effective I/O offered in the industry. The unprecedented I/O flexibility of the controller and its unbeatable cost per point, make the EC120 EXPANSION I/O a perfect fit for every project. The EXPANSION I/O profile, as defined in the functional profile section, allows this controller to be easily set up by any network management software without sacrificing I/O flexibility. The EXPANSION I/O EC120 is the answer to the integrators' field issues of how to pick up miscellaneous I/O points without sacrificing job profits.

SELECTION GUIDE

S-EC120P-F- ☐

└ E - Fixed Expansion I/O Application

SPECIFICATIONS

General

Communication:	*LONTALK™ Protocol*
Transceiver:	*FTT-10, Free Topology*
Processor:	*Neuron 3150 @ 20 MHz*
Memory:	*ROM*
Application:	*Fixed, non-programmable*

Power

Nominal Input Voltage:	*24 VAC*
Input Voltage Range:	*21-28 VAC or 21-39 VDC*
Maximum Consumption:	*8 VA, does not include Triac loading*
On Board DC Power:	*+20V Output auto-reset fuse*

Environmental

Operating Temperature:	*-20 ℃ to +70 ℃, -4 ℉ to 158 ℉*
Storage Temperature:	*-40 ℃ to +70 ℃, -40 ℉ to 158 ℉*
Relative Humidity:	*5% to 95% (non-condensing)*

Warranty

Period:	*2 Years (Limited)*

Inputs

Number:	*6*
Voltage:	*0-5 Volts 0-10 Volts*
Current:	*0-20 mA*
Thermistor:	*Type 2, 3: 10Kohms (25℃, 77℉)*
Digital:	*Dry Contact*
Resolution:	*12 bits*
Accuracy:	*±1% FS (25℃, 77℉)*
Protection Circuitry:	*Transient Over voltage, ESD*

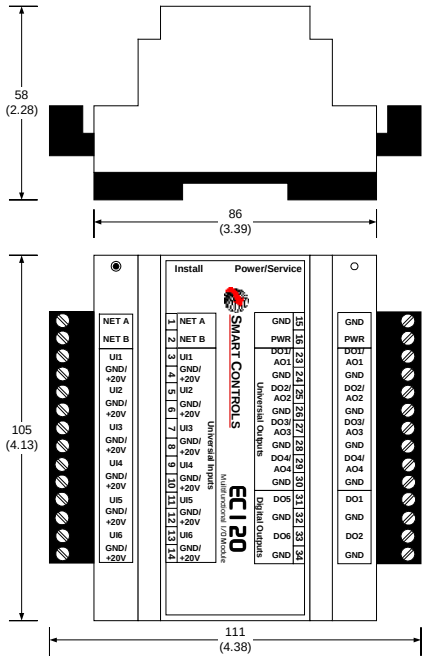
Outputs

Number:	*6*
6 - Digital:	*Triac 1.0 A @ 24 VAC Voltage Sourcing*
4 - Voltage:	*0-10 Volts*
Analog Resolution:	*10 bit*
Accuracy:	*±1% FS (25℃, 77℉)*
Protection Circuitry:	*ESD*

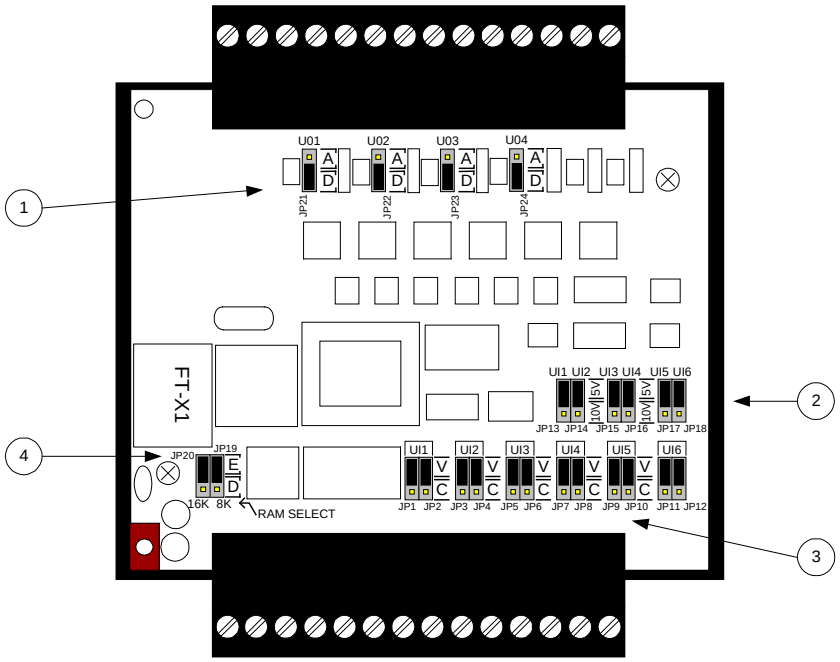
Enclosure

Dimensions:	*L 105 x W 86 x H 58 mm (4.13" x 3.39" x 2.28")*
Cover:	*Lexan 940, UL94-V0 rated*
Base:	*Noryl VO1550, UL94-V0*

DIMENSIONS



OPTION JUMPER SELCETIONS



1- Output Selection
A – Analog Output (Voltage 0-10V)
D – Digital Output (Triac, 24Vac, 1A)

2- 5V/10V Selection
5V – Input Sensing for 5V Signals
10V – Input Sensing for 10V Signals

3- Input Selection
V – Voltage Input (0-5V,0-10V, Dry Contact, Resistive)
C – Current Input (4-20 mA)

4- RAM Memory Selection
N/A

CONTACT

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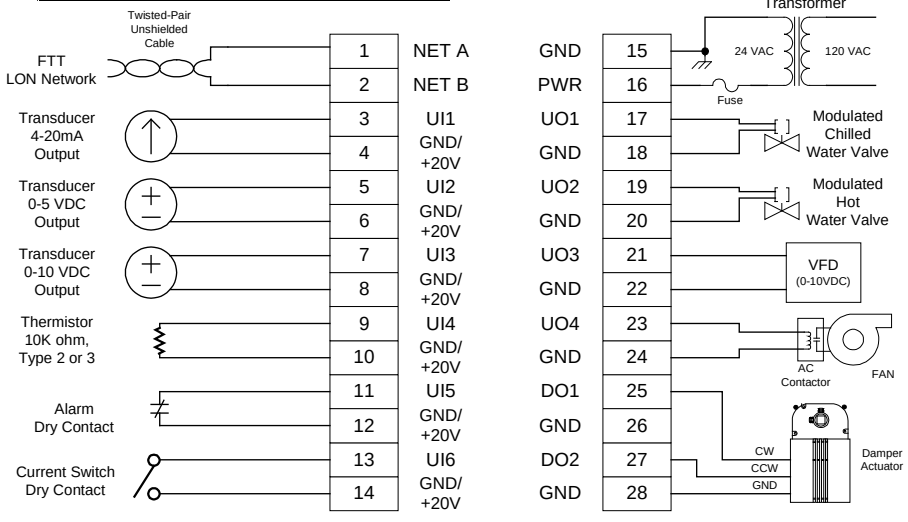
AGENCY

Example Wiring Diagram

Inputs			
Description		Jumper	Setting
Transducer 4-20mA Output	UI1	JP1	C
		JP2	C
		JP13	5V
Transducer 0-5 VDC Output	UI2	JP3	V
		JP4	V
		JP14	5V
Transducer 0-10 VDC Output	UI3	JP5	V
		JP6	V
		JP15	10V
Thermistor 10K, Type 2 or 3	UI4	JP7	V
		JP8	V
		JP16	5V
Alarm, Dry Contact	UI5	JP9	V
		JP10	V
		JP17	5V
Currrent Switch, Dry Contact	UI6	JP11	V
		JP12	V
		JP18	5V

Outputs			
Description		Jumper	Setting
Modulated Chilled Water Valve	UO1	JP21	A
Modulated Hot Water Valve	UO2	JP22	A
VFD (1-10Vdc)	UO3	JP23	A
AC Contactor, Fan	UO4	JP24	D
Damper Actuactor, CW	DO1	na	na
Damper Actuactor, CCW	DO2	na	na



NETWORK VARIABLES

nvoUI1 is the output network variable (nvo) for UI1 input. UI2-UI6 have corresponding output network variables (nvoUI). Only nvoUI1 is described below. nvoUI2 through nvoUI6 have equivalent descriptions.

nviUO1 is the input network variable (nvi) for UO1 output. UO2-UO4 have corresponding input network variables (nviUO). Only nviUO1 is described below. NviUO2 though nviUO4 have equivalent descriptions.

nvoUI1_AI_V: Analog voltage input level for UI1. 0V = 0%, 5V = 100% (10V = 100% for 10V option jumper).

nvoUI1_AI_I: Analog current input level for UI1. 4mA = 0%, 20mA = 100%.

nviUO1_AO_V: Analog voltage output level for UO1. 0% = 0V, 100% = 10V.

nvoUI1_DI: Digital input value for UI1. On (1) = Closed (0V).

nvoUI1_DI_Inv: Inverse digital input value for UI1. Off (0) = Closed (0V).

nviDO1 & nviDO2: Digital (Triac) output value for DO1 & DO2, respectively. On (1) activates the output (closed).

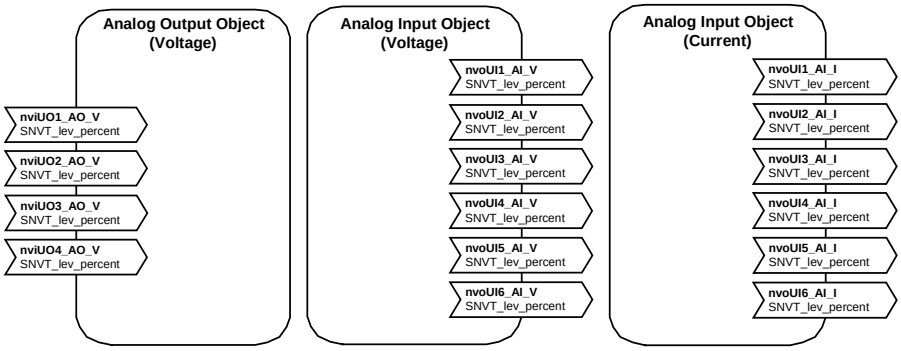
nviUO1_DO: Digital (Triac) output value for UO1. On (1) activates the output (closed).

nvoUI1_AI_TH2: Analog 10 Kohm, type II thermistor input for sensing temperature for UI1.

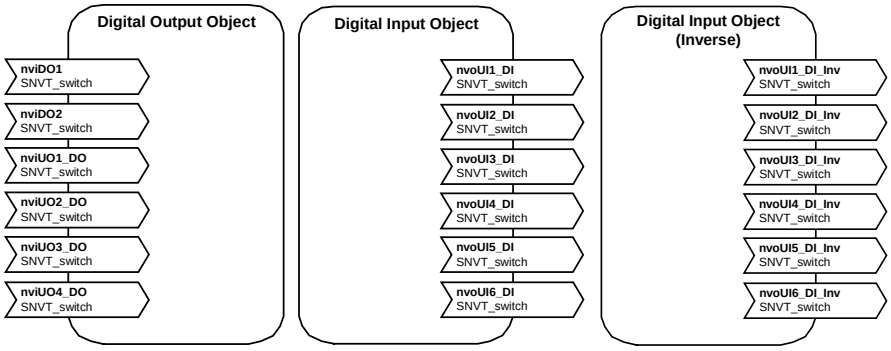
nvoUI1_AI_TH3: Analog 10 Kohm, type III thermistor input for sensing temperature for UI1.

FUNCTIONAL PROFILE

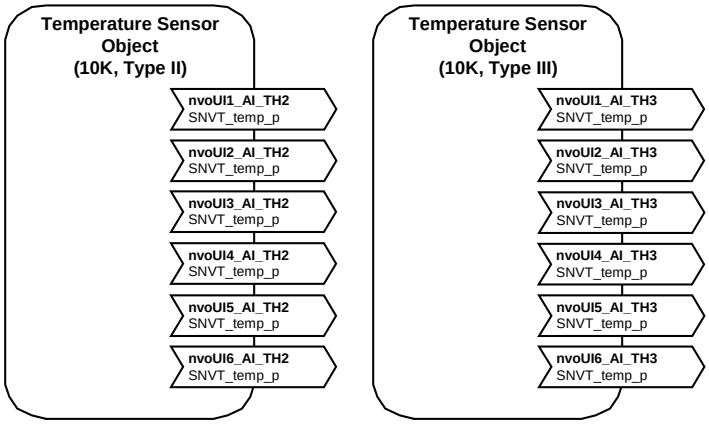
Analog Objects



Digital Objects



Temperature Objects



Note: *All network variables are continuously available and readable from the LON network. Variables not in use or required based on input/output connections and hardware option jumper configurations may provide values that are not representative of actual input or output conditions. Correct I/O connections and option jumper settings are required for proper network variable values and operation.*