



16-Channel Universal Analog Input Module Quantum Automation Series 140 AUI 040 00sc



The 140 AUI 040 00sc provides Quantum Automation Series CPUs the capacity to handle a wide variety of analog input types. With 16 channels of input that can be configured in various combinations of RTD, thermocouple, current or voltage, this module is by far the most flexible analog input module available in the Quantum family of products.

The 16 channels are divided into four groups. Each group supports up to four voltage/current/thermocouple inputs or two RTD inputs.

This module resides in a standard Quantum backplane and offers:

- Outstanding versatility through the module's unique ability to interface to four different sensor types without any special connectors or signal conditioners.
- Over-voltage protection and over-current protection, plus active band pass filtering. Features 1000 Vdc channel-to-backplane isolation; 1000 Vdc channel-to-chassis ground isolation; 12.5 Vdc channel-to-channel isolation for voltage, thermocouple and current input types.
- Added value through reduction of processor resources used. One 16-channel module uses memory comparable to a standard 4-channel module.
- Precision with 16-bit resolution.
- Easy to use through automatic conversion of analog signals into integer data.
- Simple installation with support from Concept, Modsoft and ProWORKS NxT programming software; the module installs and operates exactly like other Quantum modules. The module is easily configured using ladder register settings.

This module is especially valuable in projects where a large variety of analog signal types need to be measured efficiently and economically.

Designed for data acquisition in process industries such as utility, water/wastewater, oil/gas, food/beverage or building automation, the 140 AUI 040 00sc is the ideal solution when acquiring signals from a large number of analog sources within an individual process or from throughout a facility.

Note: The field wiring terminal block (Modicon #140 XTS 002 00) or the 140 CFA040 00 40 pin Cablefast Terminal block must be ordered separately. The terminal block includes the removable door.

CJC 1 HI (+)	2	1	1 IN HI (+)
CJC 1 LO (-)	4	3	1 IN LO (-)
2 IN HI (+)	6	5	3 IN HI (+)
2 IN LO (-)	8	7	3 IN LO (-)
4 IN HI (+)	10	9	5 IN HI (+)
4 IN LO (-)	12	11	5 IN LO (-)
6 IN HI (+)	14	13	7 IN HI (+)
6 IN LO (-)	16	15	7 IN LO (-)
8 IN HI (+)	18	17	SHIELD 1
8 IN LO (-)	20	19	SHIELD 2
SHIELD 3	22	21	9 IN HI (+)
SHIELD 4	24	23	9 IN LO (-)
10 IN HI (+)	26	25	11 IN HI (+)
10 IN LO (-)	28	27	11 IN LO (-)
12 IN HI (+)	30	29	13 IN HI (+)
12 IN LO (-)	32	31	13 IN LO (-)
14 IN HI (+)	34	33	15 IN HI (+)
14 IN LO (-)	36	35	15 IN LO (-)
16 IN HI (+)	38	37	CJC 2 HI (+)
16 IN LO (-)	40	39	CJC 2 LO (-)

140 AUI 040 00sc Wiring Diagram

16-Channel Universal Analog Input Module

Quantum Automation Series

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Specifications	
Number of Channels	16 Voltage/Current/Thermocouple or 8 RTD
Input Registers Required	9
Output Registers Required	1
Input Configuration	16 inputs configured in groups of four or 8 RTDs in groups of 2
LEDs	18 - One each for Ready (Green), Active (Green), Fault (Red),
RTD / Thermocouple Types	Platinum, copper, nickel, nickel-iron / J, K, T, B, E, R, S, N
Voltage Range	± 50 mV, ± 500 mV, ± 2.0 Vdc, ± 5 Vdc, ± 10 Vdc, 0 to 10Vdc, 0 to 5Vdc, 1 to 5Vdc
Current Range	4 to 20mA, 0 to 20mA, ± 20 mA
Impedance, input	Voltage/TC Mode: 10 Mega Ohms, Current Mode: 250 Ohms
Fault Detection	over & under range, Open/Short RTD, Open thermocouple
CMRR	100 dB @ 50/60 Hz
Power Requirements	550 mA @ 5 V maximum
Max Input Current	± 28 mA continuous
Max Input Voltage	± 20 Vdc continuous
Agency Approvals	UL, CUL Class I Div 2, CE, ABS
Accuracy	Note: Accuracy is dependent on the filter frequency selection, range selection, data format, and input noise. Specifications listed below apply to bipolar ranges. RTD/TC/Resistance range accuracies are listed in the manual.
Voltage Typ	.025% of full scale typical @ 25°C.
Voltage Max	.05% of full scale Maximum @ 0 to 60°C.
Current Typ	.05% of full scale typical @ 25°C
Current Max	.1% of full scale maximum @ 0 to 60°C
Miscellaneous	
Display format	12 bit integer, 16 bit integer, 15 bit + sign integer, DVM
Engineering units	mV, mA, degrees C, degrees F
Resolution	12 bits to 16 bits, 0.1°C/0.1°F, 0.1 Ohms
Input Filter	28Hz, 50/60Hz, 800Hz, 6.4KHz Programmable Digital Filter
Channel Update Time	See Installation Guide for Channel Update Time chart vs filter selection
Single Channel	5 ms to 125 ms (frequency dependent)
16 Channel	80 ms to 2.0 sec. (frequency dependent)
Isolation	
Channel to Rack	1000 Vdc Continuous Optical & magnetic
Channel to Chassis Ground	1000 Vdc Continuous Optical & magnetic
Channel to Channel	± 12.5 Vdc



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