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OMRON

Analog Input Module

DRT1-AD04□

I/O Interface Converts Analog Input Data into Binary Data



- Four inputs available.
- High resolution of 1/30,000. (DRT1-AD04H)
- Conversion is possible within a range of −5% to 105% full scale.
- High conversion speed of 2 ms/point. (DRT1-AD04)
- Inputs are insulated from one another. (DRT1-AD04H)
- Wide range of inputs including 1 to 5 V, 0 to 5 V, 0 to 10 V, −10 to 10 V, (DRT1-AD04) 4 to 20 mA, and 0 to 20 mA.
- DRT1-AD04: Bears the CE marking.
- Incorporates a variety of functions including average processing and wire burnout detecting functions.

Ordering Information

Classification	I/O points	Model
Analog input Module	Either 4 points or 2 points (Set with the DIP switch) (Occupies 4 or 2 input words of the Master.)	DRT1-AD04
	4 inputs (Occupies 4 input words of the Master.)	DRT1-AD04H

Specifications

■ Ratings

Input

Item	DRT1-AD04		DRT1-AD04H	
	Voltage input	Current input	Voltage input	Current input
Input points	4 points			
Input type	0 to 5 V 1 to 5 V 0 to 10 V −10 to 10 V	0 to 20 mA 4 to 20 mA	0 to 5 V 1 to 5 V 0 to 10 V	0 to 20 mA 4 to 20 mA
Max. signal input	±15 V	±30 mA	±15 V	±30 mA
Input impedance	1 MΩ min.	Approx. 250 Ω	1 MΩ min.	Approx. 250 Ω
Resolution	1/6,000 (full scale)		1/30,000 (full scale)	
Overall accuracy	25°C : ±0.3% FS 0°C to 55°C: ±0.6% FS	25°C : ±0.4% FS 0°C to 55°C: ±0.8% FS	25°C : ±0.3% FS 0°C to 55°C: ±0.6% FS	25°C : ±0.4% FS 0°C to 55°C: ±0.8% FS
Conversion time	2 ms/point (8 ms/4 points, 4 ms/2 points)		250 ms/4 points	
Converted output data	Binary data −10- to 10-V range: 8BB8 to 0BB8 full scale Other signal ranges:0000 to 1770 full scale		Binary data 0000 to 7530 full scale	
Insulation resistance	20 MΩ min. at 250 VDC (between insulated circuits)			
Insulation method	Photocoupler insulation between inputs and communications lines (There is no insulation between input signals.)		Photocoupler insulation (between input and communications lines and each analog input signal)	

■ Characteristics

Communications power supply voltage	11 to 25 VDC (supplied from the communications connector)
Internal power supply voltage	20.4 to 26.4 VDC (24 VDC $^{+10\%}/_{-15\%}$)
Current consumption	Communications: 30 mA max. at 24 VDC Internal circuit: 80 mA max. (DRT1-AD04) at 24 VDC 130 mA max. (DRT1-AD04H) at 24 VDC
Dielectric strength	500 VAC for 1 min (1-mA sensing current between insulated circuits)
Noise immunity	Power supply normal: ±600 V for 10 minutes with a pulse width of 100 ns, 1 μs Power supply common: ±1,500 V for 10 minutes with a pulse width of 100 ns, 1 μs
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction: 200 m/s^2 (approx. 20G) Destruction: 300 m/s^2 (approx. 30G)
Mounting method	M4 screw mounting or 35-mm DIN track mounting
Mounting strength	No damage when 50 N (approx. 5 kgf) pull load was applied for 10 s in all directions (10 N min. (approx. 1 kgf) in the DIN track direction)
Terminal strength	No damage when 50 N (approx. 5 kgf) pull load was applied for 10 s in all directions
Ambient temperature	Operating: 0°C to 55°C (with no icing or condensation) Storage: −25°C to 65°C (with no icing or condensation)
Ambient humidity	Operating: 35% to 85% (with no condensation)
Weight	160 g max.

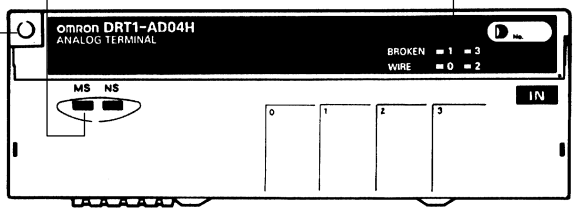
Nomenclature

DRT1-AD04□

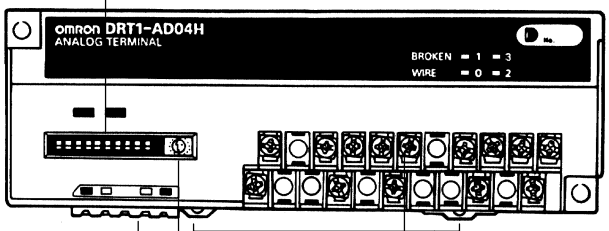
Mounting Hole
Used for panel mounting.

Indicators
Indicates the status of the Slave and the network.

Broken Wire Indicator (DRT1-AD04H)
If an input wire is disconnected or broken, the corresponding indicator is lit.



The DIP switch pins are used for node address and baud rate settings.
Pins 1 to 6: Node number
Pins 7 and 8: Baud rate
Pin 9: Number of inputs setting (4 points or 2 points)
Pin 10: Averaging function setting



Rotary Switch
Sets the input ranges.

Terminal Block
Connects the input power supply and analog inputs.

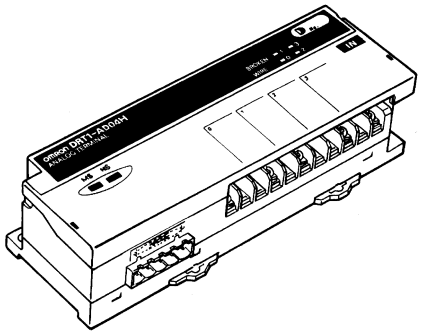
DIN-track Mounting Hook
Used for DIN-track mounting.

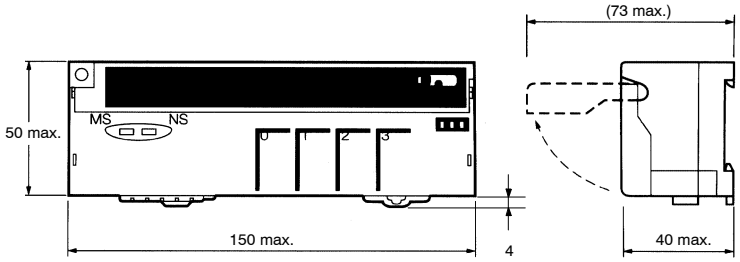
Communications Connector
Connects the network communications cable. The communications power is also supplied through this connector.

Dimensions

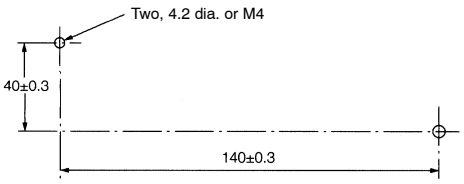
Note: All units are in millimeters unless otherwise indicated.

DRT1-AD04□



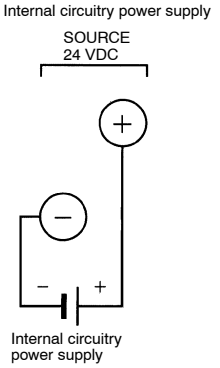


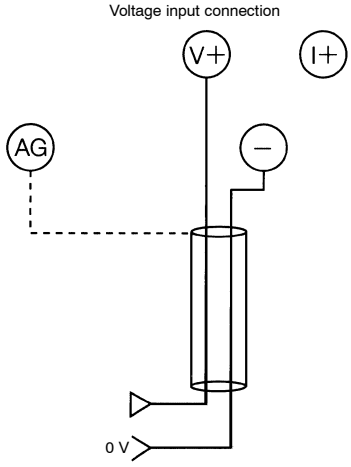
Mounting Holes

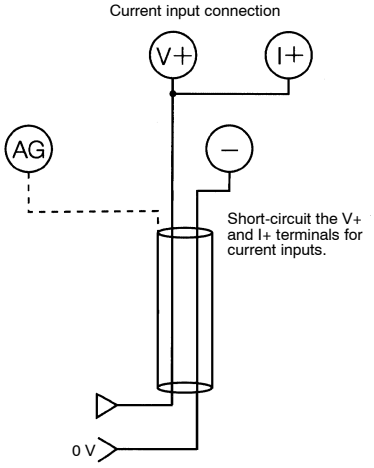


■ Wiring

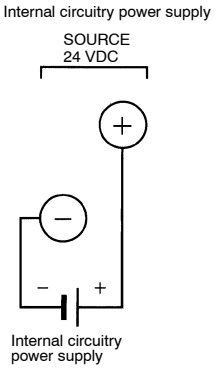
DRT1-AD04

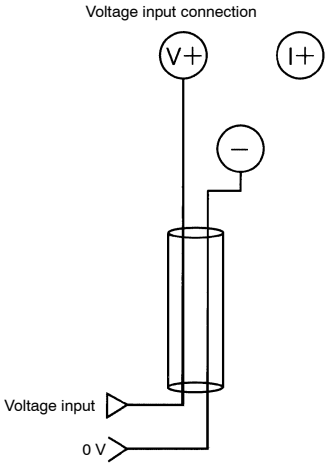


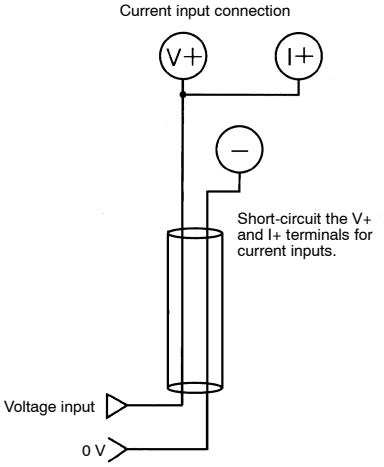




DRT1-AD04H

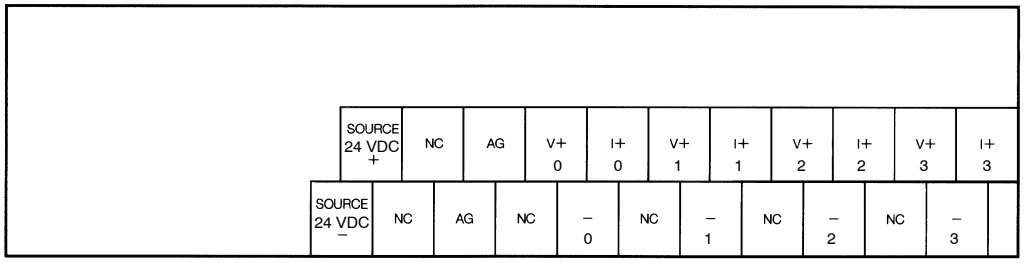




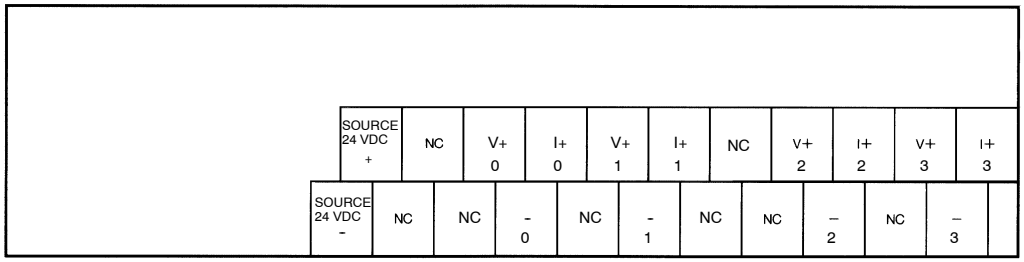


■ Terminal Arrangement

DRT1-AD04



DRT1-AD04H



Precautions

Refer to the *DeviceNet Operation Manual (W267)* before using the Module.

- To prevent inductive noise, do not wire power lines or high-tension lines along with or near the cables. Other noise-prevention techniques, such as using shielding or separate conduit/ducting, are also effective.
- Install the Module as far as possible from equipment that generates strong high-frequency signals (such as high-frequency welders) and equipment that generates surges. Such equipment can cause the Module to malfunction.
- Install surge absorbers or noise filters on nearby equipment that generates noise, particularly equipment that has inductive components such as motors, transformers, solenoids, or magnetic coils.
- When using a noise filter in the power supply, check the voltage and current and install the noise filter as close as possible to the Module.

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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