

DeviceNet Remote I/O

Analog, Terminal Block Type



ARD-A Series

CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Features

- Adopts DeviceNet, standard open Network
 - : Communicates other DeviceNet devices without additional installations
 - : Configurable power and communication system only with communication cables
 - : Connectable max. 63 units per 1 master unit
- Strong against noise and high accuracy (0.3%) measurement with differential input method (measuring difference between +, - input signal)
- Various I/O range
 - : 0-5 VDC \rightleftharpoons , 1-5 VDC \rightleftharpoons , 0-10 VDC \rightleftharpoons , -5-5 VDC \rightleftharpoons , -10-10 VDC \rightleftharpoons , DC 4-20 mA, DC 0-20 mA
- Scale function
 - : Settable high/low limit scale value for analog I/O range (setting range: -28,000 to 28,000)
- Various functions
 - : Automatic communication speed recognition, Network voltage monitoring, Input digital filter, Peak/Bottom Hold, hysteresis, reading model name and number of units, I/O and status flag monitoring
- Built-in surge, ESD protection, reverse polarity protection circuit
- Mounting DIN rail and panel method

Ordering Information

This is only for reference, the actual product does not support all combinations. For selecting the specified model, follow the Autonics website.

ARD - A ① 04

① I/O

I: Input
O: Output

Product Components

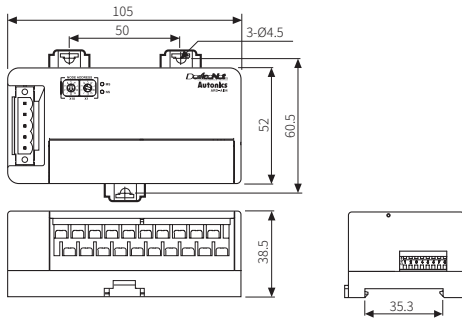
- Product \times 1
- Network connector \times 1
- Instruction manual \times 1
- Terminating resistance \times 2

Specifications

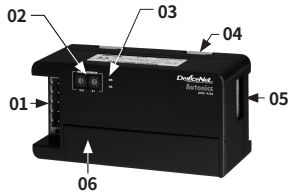
Model	ARD-AI04	ARD-AO04	
Power supply	Rated voltage: 24 VDC \rightleftharpoons , voltage range: 12-28 VDC \rightleftharpoons		
Power consumption	\leq 3 W		
Output points	Input 4-point (switchable voltage/current)	Output 4-point (voltage 2 CH, current 2 CH)	
Control I/O	Voltage	0-10 VDC \rightleftharpoons , -10-10 VDC \rightleftharpoons , 0-5 VDC \rightleftharpoons , 1-5 VDC \rightleftharpoons , -5-5 VDC \rightleftharpoons (input impedance: \geq 1 M Ω)	0-10 VDC \rightleftharpoons , -10-10 VDC \rightleftharpoons , 0-5 VDC \rightleftharpoons , 1-5 VDC \rightleftharpoons , -5-5 VDC \rightleftharpoons (load resistance: \geq 1 k Ω)
	Current	DC 4-20 mA, DC 0-20 mA (input impedance: 250 Ω)	DC 4-20 mA, DC 0-20 mA (load resistance: \leq 600 Ω)
	Max. allowable I/O	\pm 5% F.S. of I/O range	
	Resolution	14 bits, 1/16,000	
Accuracy	At room temperature (25 $^{\circ}$ C \pm 5 $^{\circ}$ C) range: \pm 0.3% F.S. Out of room temperature range: \pm 0.6% F.S.		
Communication spec.	I/O Slave messaging (group 2 only slave) : supporting Poll command, Bit_strobe command, Cyclic command, COS command		
Communication speed (comm. distance)	125 kbps (\leq 500 m), 250 kbps (\leq 250 m), 500 kbps (\leq 100 m)		
Protocol	DeviceNet		
Insulation method	I/O and internal circuit: non-insulation, DeviceNet and internal circuit: insulation, DeviceNet power: insulation		
Insulation resistance	\geq 200 M Ω (500 VDC \rightleftharpoons megger)		
Noise immunity	\pm 500 VDC \rightleftharpoons the square wave noise (pulse width: 1 μ s) by the noise simulator		
Dielectric strength	500 VAC \sim at 50/60 Hz for 1 min (between external terminals and case, between output terminals and power terminals)		
Vibration	1.5 mm amplitude at frequency 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours		
Shock	500 m/s 2 (\approx 50 G) in each X, Y, Z direction for 3 times		
Ambient temperature	-10 to 50 $^{\circ}$ C, storage: -25 to 75 $^{\circ}$ C (no freezing or condensation)		
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)		
Protection rating	IP20 (IEC standard)		
Protection circuit	Surge and ESD protection, reverse power protection circuit		
Indicator	Network status (NS) and unit status (MS) indicator (green, red LED)		
Material	Front and body case: PC		
Mounting method	DIN rail or panel mounting		
Approval	CE ENEC DeviceNet	CE ENEC DeviceNet compatible	
Unit weight (packaged)	\approx 145 g (\approx 210 g)	\approx 145 g (\approx 210 g)	

Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.



Unit Descriptions



- 01. Network connector**
- 02. Rotary switch**
For setting NODE ADDRESS
- 03. Status indicator**
For unit status (MS) and network status (NS)
- 04. Rail lock**
For the DIN rail and panel mount
- 05. DIP switch**
For setting the I/O range
- 06. I/O terminal block**
For I/O with the external device

■ Network connector

No.	Color	Function	Pinout
5	Red	24 VDC≐ (+)	
4	White	CAN_H	
3	None	SHIELD	
2	Blue	CAN_L	
1	Black	24 VDC≐ (-)	

■ Status indicator

Status indicator		Description	Troubleshooting
Unit (MS)	Network (NS)		
Green LED ON	Green LED ON	Normal operation	-
Green LED ON	OFF	Standby of checking duplicated NODE ADDRESS	-
Green LED ON	Green LED Flashing	Standby of normal operation	-
Red LED ON	OFF	Watchdog timer error	Replace the Slave unit.
Red LED Flashing	OFF	Switch setting error	Change the switch setting to valid value and supply the power again.
Red LED Flashing	Green LED ON	Changed NODE ADDRESS during normal operation	Change to the initial NODE ADDRESS when the power was supplied at first.
Green LED ON	Red LED ON	Invalid NODE ADDRESS	Change to the valid NODE ADDRESS and supply the power again.
Red LED ON	Red LED ON	Duplicated NODE ADDRESS	Change NODE ADDRESS not to be duplicated.
		Bus-Off error	Power on the Slave unit again. Check the Master unit, communication cable, terminating resistance and noise of network.
Green LED ON	Red LED Flashing	I/O Connection time out	Check the setting of Master and the user program.