



Smart 4 Analog (0~10VDC) Input Sensor/Output

SM4-(AI/AO)-010-1

Monitor and Control 4 Analog Inputs / Analog Outputs Over Copper or Fiber Ethernet with Real-Time Alerts

The Smart 4 Analog (0~10VDC) Input Sensor and Analog Output are programmable Ethernet I/O controllers that interface with building automation and equipment devices such as HVAC actuators, position sensors, transducers, and motor drives.

Each of the Analog Input and Output channels are configurable through a built-in web management portal, and can be integrated with network management systems, industrial control systems, Internet of Things (IoT) frameworks, and REST-integrated automation platforms.

The Smart 4 Analog Input Sensor and Output support TLS/SSL encryption, IEEE 802.1X via RADIUS authentication (AAA), role based access control (RBAC), and event logging. Their versatile 2-port (1xRJ45, 1xSFP) Ethernet interface offers network access redundancy and segmentation.

Each device can operate as a standalone unit, independently monitoring and controlling the value of their 4 analog inputs or 4 outputs, or pair together over a secure TLS/SSL-encrypted tunnel.

This System Pairing feature allows Input Sensors to transmit 0~10VDC signals across an Ethernet network to one or multiple remote locations.



Smart 4 Analog (0~10VDC) Input and Output

Features

System

- 4 independent channels for monitoring and controlling 4 Analog (0~10VDC) Inputs / Outputs
- 30kHz analog bandwidth ensures precise signal acquisition of high-frequency 0~10VDC signals
- Supports direct connection of 0~10VDC analog input signals from 3-wire and 4-wire voltage-output transmitters

Environment

- Hardened to operate in -40°C to +70°C (-40°F to +158°F)
- DIN rail or Wall Mount (Wall mount ears included)

Power

- 12-48VDC and 125VDC models available with redundant power terminals
- Self-limiting analog input signal overvoltage (± 30 VDC) protection

Quality

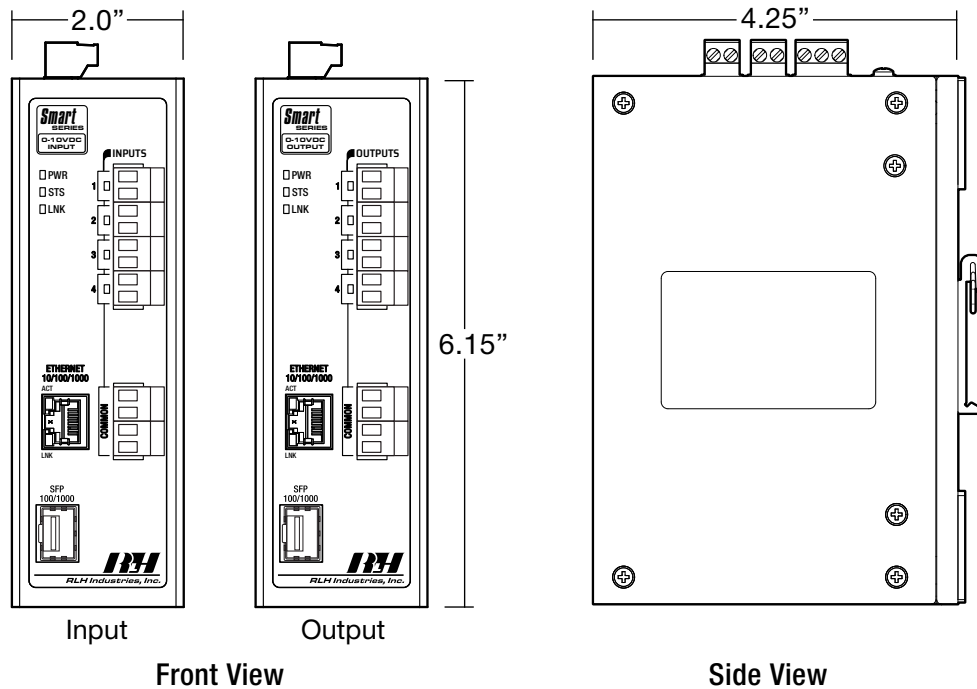
- Designed, Engineered, and Assembled in the USA
- Covered by our Lifetime Warranty



Ethernet IO

- 2-Port Gigabit Ethernet Interface featuring 1xRJ45 port (Copper) and 1xSFP port (Fiber Optics)
- User-friendly embedded web management portal
- Transport 0~10VDC between Smart Series units via System Pairing
- NMS and SCADA/DCS integration options include: SNMPv1/v2c/v3, Modbus TCP, and DNP3 TCP
- SNMP-driven 0~10VDC oversight with Trap Notifications and Receiver
- MQTT stack for Publish/Subscribe telemetry messaging
- RESTful API with GET/POST/PUT request support
- Encrypted, custom email alert generation
- Time-stamped Event Log tool with Export-to-CSV feature

Dimensions



Ethernet I/O Specifications

Analog Inputs 1~4 (Single-ended, Unipolar)	Operating Range	0~10VDC
	Impedance	200k Ohms
	Protection	±30V
Analog Outputs 1~4 (Single-ended, Unipolar)	Max. Loop Resistance	1000 Ohms
	Max. Output Signal	0~10VDC, ±32mA
Ethernet Interface	1x RJ45 Port (10/100/1G), 1x SFP Port (100/1G) *Data Transmission is auto-negotiated	
Compliant IEEE Standards	IEEE 802.3 10Base-T (Ethernet)	IEEE 802.3u 100Base-TX/FX (Fast Ethernet)
	IEEE 802.3ab/z 1000Base-T/X (Gigabit Ethernet)	IEEE 802.1X (Port-Based Network Access Control)
Network Protocols	HTTP/HTTPS, SMTP, DHCP, DNS, NTP, IEEE 802.1X/RADIUS, TLS/SSL Encryption	
	SNMPv1/v2c/v3, Modbus TCP, DNP3, MQTT, RESTful API	
System Pairing Topologies	One-to-One:	1x Smart 4 Analog (0~10VDC) Input Sensor to 1x Smart 4 Analog (0~10VDC) Output
	One-to-Many:	1x Smart 4 Analog (0~10VDC) Input Sensor to >1x Smart 4 Analog (0~10VDC) Output
	Many-to-One:	>1x Smart 4 Analog (0~10VDC) Input Sensor to 1x Smart 4 Analog (0~10VDC) Output
System Pairing Latency	One-to-One: (TCP)	Typical 8ms, Maximum 45ms
	One-to-Many: (TCP)	<250ms
	Many-to-One: (TCP)	<250ms
* Latency specification listed is based on direct connections between Input Sensors and Outputs		



General Specifications

LED Indicators	Power, CPU Status, System Pairing, Analog (0~10VDC) Inputs / Outputs 1~4, Ethernet Link/Activity			
Power	Power Input	12-48VDC (11-53VDC)		
	-A powering option	125VDC (42~160V)		
	Dual Redundant Power Inputs - Polarity insensitive			
	Power Consumption	8 Watts Maximum		
DC Input Isolation (In/Out)	1.5kV	*For -A power option models only		
Overcurrent Protection	1.0A	Automatic Recovery		
System Status Alarm	Relay Type:	Mechanical, SPDT Relay, Form C, Normally Open/NO or Normally Closed/NC		
	Operational Limits:	Max. Power	Max. Voltage	Max. Current
		60W / 125VA	220VDC / 250VAC	2A AC/DC
Operating Temperature	-40°C to +70°C (-40°F to +158°F)			
Storage Temperature	-40°C to +85°C (-40°F to +185°F)			
Humidity	95% non-condensing			
Dimensions	4.93”(H) x 2.0”W) x 3.93”(D) (125mm x 51mm x 100mm) - not including DIN clip			
Weight	1.6 lbs. (0.73kg)			
Mounting	Standard T-35 DIN rail clip and wall mount ears (Included)			
Compliance	RoHS and REACH			
Warranty	Lifetime - Visit www.fiber opticlink.com for warranty information and coverage details			

Ordering Information

Description	Part Number
Smart 4 Analog Input Sensor, 4x 0~10VDC Inputs, Powered by 12-48VDC	SM4-AI-010-1
Smart 4 Analog Output, 4x 4~10VDC Outputs, Powered by 12-48VDC	SM4-AO-010-1

- Add **-A** to the end of the part number for 125 VDC input power option

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