

DESCRIPTION

The APS & APIS200-600 switch boxes are suitable for rotary actuators and are the industry leader in versatility, quality and approvals gained. Models include APS standard range with a variety of outputs and protection degrees and the APIS which have an integral solenoid valve lowering cost of installation as only one cable is required. Each have Namur mount and comes complete with stainless steel mounting brackets and quick set switches for setting without tools.

FACTORY ACCREDITED:



FEATURES

- Certified for Hazardous areas with Ex, ATEX, Exd, IEC & NEMA4 approvals.
- Polyester powder coated or stainless steel housing.
- Integral solenoid on APIS models.
- Mechanical, proximity, magnetic switches in various brands.
- Multi-view top position indicator for 2 way or 3 way valves.
- High-level weatherproof rating of IP66/67.
- Multi-point 8 terminal strip with option of 14.
- Captive stainless steel cover bolts.
- Adjustable Namur stainless steel brackets included.
- ASi and DeviceNet interface available.
- Personalized color and labelling available.
- Wireless version also available.

ORDERING GUIDE

CODE OF AIRPOWER SWITCH BOXES	SERIES NO.	BUS AND SENSOR	VISUAL INDICATOR	COIL AND PILOT	TYPE OF SPOOL VALVE/ BODY
<i>Example: AP</i>	<i>300</i>	<i>M2</i>	<i>Y90</i>	<i>C0</i>	<i>S0</i>
AP	200	Mechanical Switches: M2. 2SPDT M3. 3SPDT M4. 4SPDT M5. 2DPDT Honeywell CROUZET H15A 125-250VAC (2SPST)	Y90. 90° Yellow open, red closed.	C0. No coil. C1. 15mm pilot, orifice 1.1mm, 12, 24VDC, <2.3W 110, 220VAC <2.8VA. C2. 15mm pilot, orifice 1mm, 24VDC 1W C3. 15mm pilot orifice 0.5mm 24VDC(<1W) Ex ia II C T6	S0. No spool valve. S1. 5/2 Spool valve. Aluminum anodized coated, single pilot actuated with manual operator, Cv=1.4.
	300		Y60. 60° Yellow open, red closed.		
	400		Y45. 45° Yellow open, red closed.		
	500				
	600				
		Proximity Sensors: PP2. P&F Inductive Sensors (2 wire) PA2. ALPS Inductive Sensors (2 wire) PA3. ALPS Inductive Sensors (3 wire)	G90. 90° Green open, red closed. G60. 60° Green open, red closed. G45. 45° Green open, red closed.		
		Magnetic Sensors: QA2. ALMS Magnetic Sensors (2 wire) QA3. ALMS Magnetic Sensors (3 wire)	P90. 90° P180. 180°		
		Interface Protocol/ Sensor Communication Card (SCC) AS2. ASi Interface protocol/ Sensor Communication Card (2 hall sensors for APS300/400).	L. Three way "L", yellow base, red bar. T. Three way "T", yellow base, red bar.		
		Position Transmitter: PT. 4-20mA Feedback Module			

ENCLOSURE/ AREA CLASSIFICATION

MODEL NO.	APS200	APS300	APS400	APS500	APS600	AP-200D
						
MODEL NO.		APIS300 (with integral solenoid)	APIS400 (with integral solenoid hazardous)	APIS500 (with integral solenoid hazardous)		
						
BODY/ FLUID CONTACT MATERIALS	Die-cast aluminum, O-ring sealed. Dichromate conversion with polyester power coating. Sealing: Buna N O-ring	Die-cast aluminum, O-ring sealed. Dichromate conversion with polyester power coating. Sealing: Buna N O-ring	Die-cast aluminum, O-ring sealed. Dichromate conversion with polyester power coating. Sealing: Buna N O-ring	Die-cast aluminum, O-ring sealed. Dichromate conversion with polyester power coating. Sealing: Buna N O-ring	SS304 or SS316. Resistance to corrosion of chemicals and salty fog: O-ring sealed. Sealing: Buna N O-ring	ABS Plastic. Sealing: permanently sealed.
DOUBLE CABLE ENTRY	2x M20x1.5, 2x 1/2" BSPP or 2x 1/2" NPT.	2x M20x1.5, 2x 1/2" BSPP or 2x 1/2" NPT.	M20 x 1.5, 2x 1/2" or 3/4" BSPP, 2x 1/2" or 3/4" NPT.	M20 x 1.5, 2x 1/2" or 3/4" BSPP, 2x 1/2" or 3/4" NPT.	M20 x 1.5, 2x 1/2" or 3/4" BSPP, 2x 1/2" or 3/4" NPT.	N/A
SWITCHES AVAILABLE	Mechanical, proximity or magnetic.	Mechanical, proximity, magnetic or feedback module.	Mechanical, proximity, magnetic, interface protocol/ SCC or feedback module.	Mechanical, proximity, magnetic, interface protocol/ SCC or feedback module.	Mechanical, proximity, magnetic or feedback module.	Magnetic
WORKING TEMPERATURE	-25°C to 85°C	-25°C to 85°C	-25°C to 85°C	-25°C to 85°C	-25°C to 85°C	-25°C to 85°C
APPROVALS	CSA, CE, NEMA 4.4X & IP67.	CE, NEMA 4.4X, IP67 & ASi Interface.	CE, NEMA 4.4X, IP67 & ASi Interface.	CE, Ex, ATEX, NEMA 4.4X & IP66.	CE, Ex, ATEX, NEMA 4.4X & IP66.	CE & IP67

APS DIMENSIONS (MM)

FIGURE 1. APS200

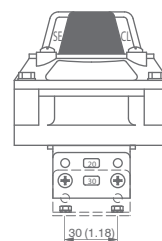
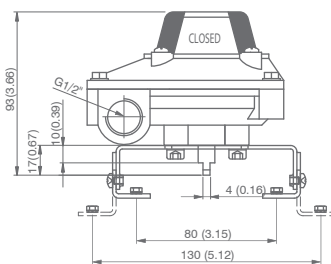
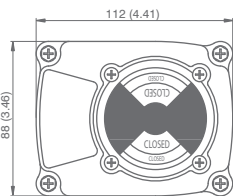


FIGURE 2. APS300

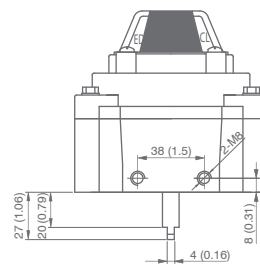
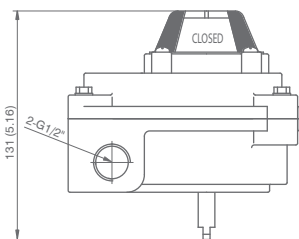
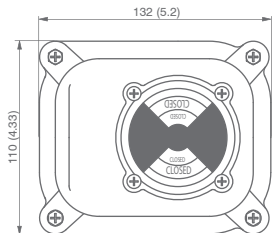


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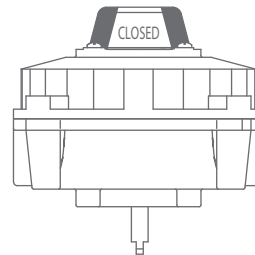
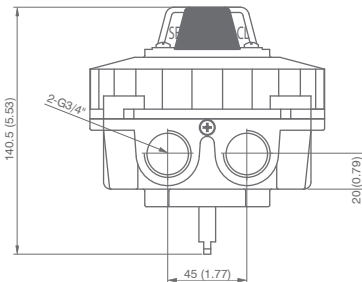
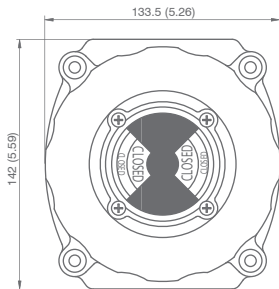
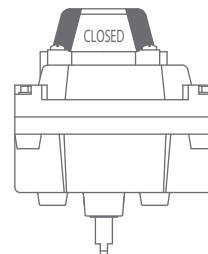
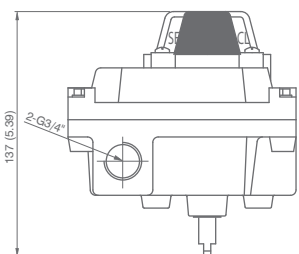
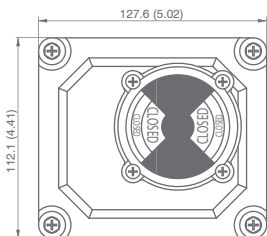
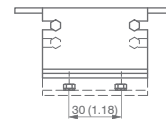
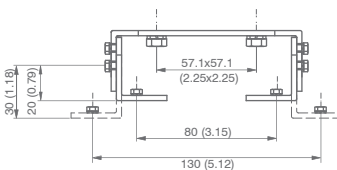


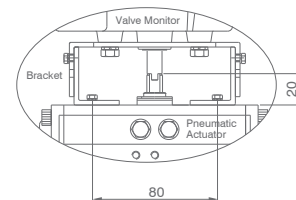
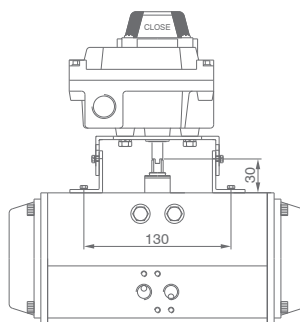
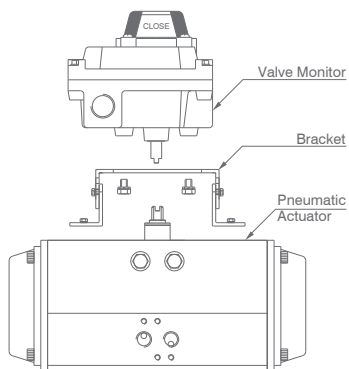
FIGURE 4. APS500/600



Bracket for mounting APS300-600



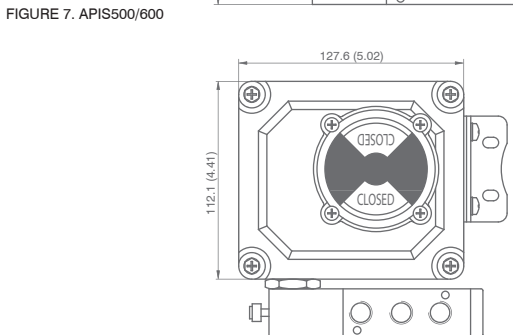
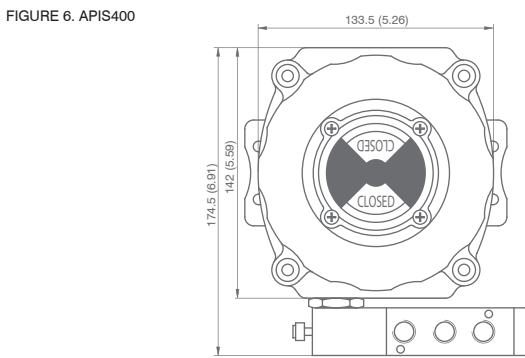
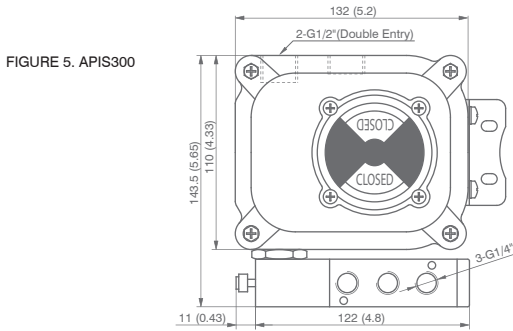
ASSEMBLY DRAWING



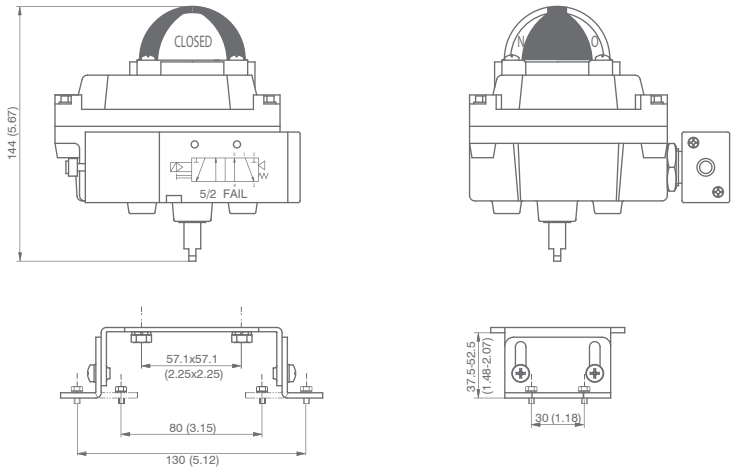
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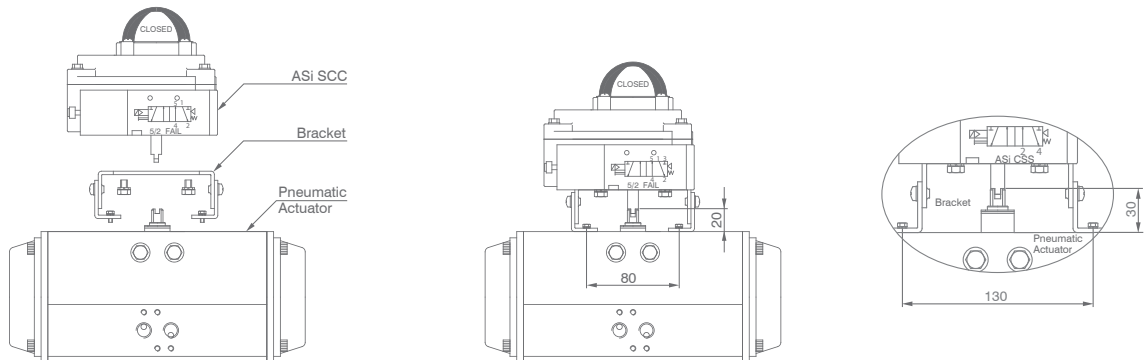
APIS WITH INTEGRAL SOLENOID DIMENSIONS (MM)



Bracket for mounting APIS300-600



ASSEMBLY DRAWING



APIS “SMART” SWITCH BOX CONTROLLERS

The APIS range has an integral pilot solenoid valve. The coil is wired within the switch box thus requiring only one cable for the box and valve. This substantially reduces wiring costs when compared to wiring of separate valves and switch boxes which require two cables. Add the option of 4-20mA feedback and either DeviceNet or ASi communication card and the APIS becomes a true “smart switch box” in one compact unit.

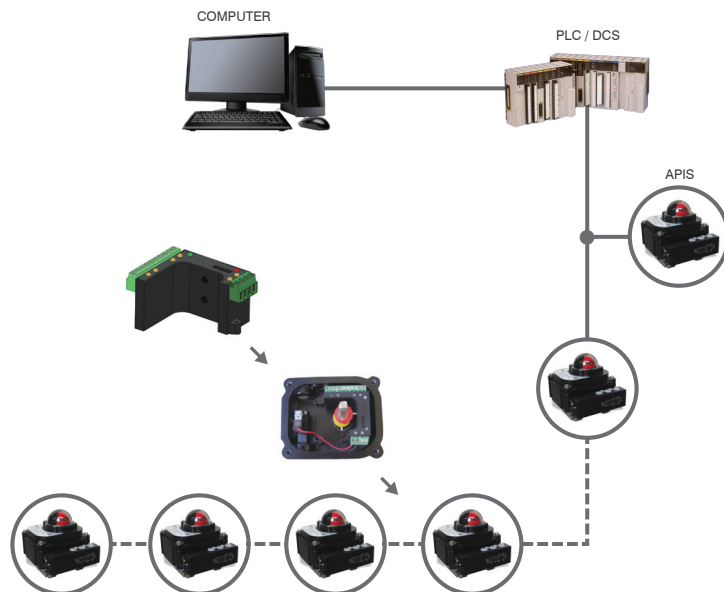
Main Features:

- Suitable for use on rotary and linear applications.
- Certified for use in all hazardous areas (Class I, Div.1&2, Groups A,B,C and D, Ex d IIC T6).
- Integrated solutions (bus+sensors+pilot+spool valve).
- Available for any bus networks such as ASi, DeviceNet, Profibus DP, Modbus and Ethernet TCP/IP.

SCC Main Features:

- Resistant to impact, moisture, shock & vibration contamination.
- LED's indicate valve position and facilitate sensor set-up.

FIGURE 8. SENSOR-COMMUNICATION CARD (SCC)



DeviceNet SCC SPECIFICATIONS

	With No Inputs/Outputs Active	One Input Active	Two Input Active	Three Input Active	Four Input Active	One Output Active	Two Output Active
CONSUMPTION CURRENT	25mA	29mA	33mA	37mA	41mA	Add the coil current (max. 0.5w)	Add the coil current (max. 0.5w)
OPERATION VOLTAGE	20-28VDC (check voltage range of the solenoid valve used)						
TEMPERATURE RANGE	-40°C to 85°C						
INPUT	TYPE	REFERENCE	DATA "BITMAP" CLASS #4 INSTANCE #4 ATTRIBUTE #3 (DATA)				
0	Hall effect sensor	Internal sensor	Byte 0, Bit 0 (closed valve), upper sensor				
1	Hall effect sensor	Internal sensor	Byte 0, Bit 1 (opened valve), lower sensor				
2	Active in High	Connector 1 - pin7 (+24) and 8 (GND)	Byte 0, Bit 2				
3	Active in High	Connector 1 - pin9 (+24) and 10 (GND)	Byte 0, Bit 3				
OUTPUT	TYPE	REFERENCE	DATA "BITMAP" CLASS #4 INSTANCE #32 (STATIC OUTPUT) ATTRIBUTE #3 (DATA)				
0	Active in Low	Connector 2 - pin 1 (+24) e2 (out)	Byte 0, Bit 0				
1	Active in Low	Connector 2 - pin 3 (+24) e4 (out)	Byte 0, Bit 1				

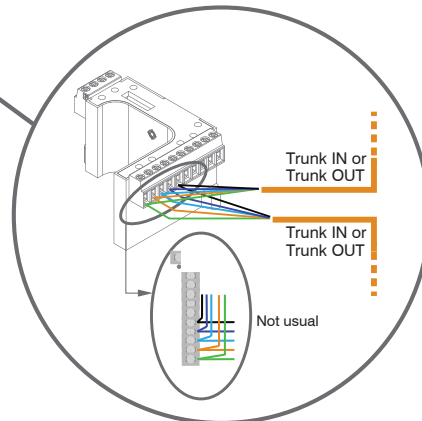
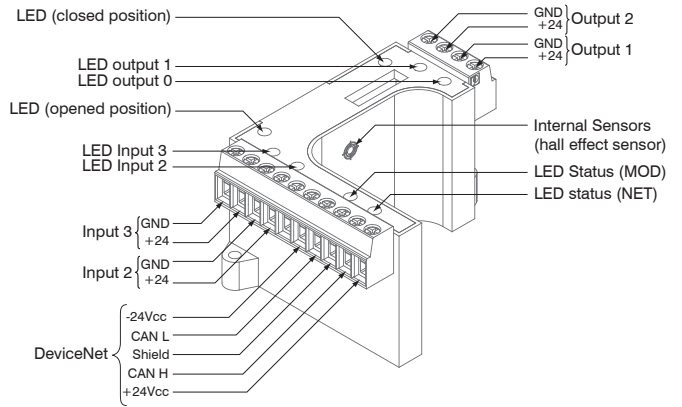
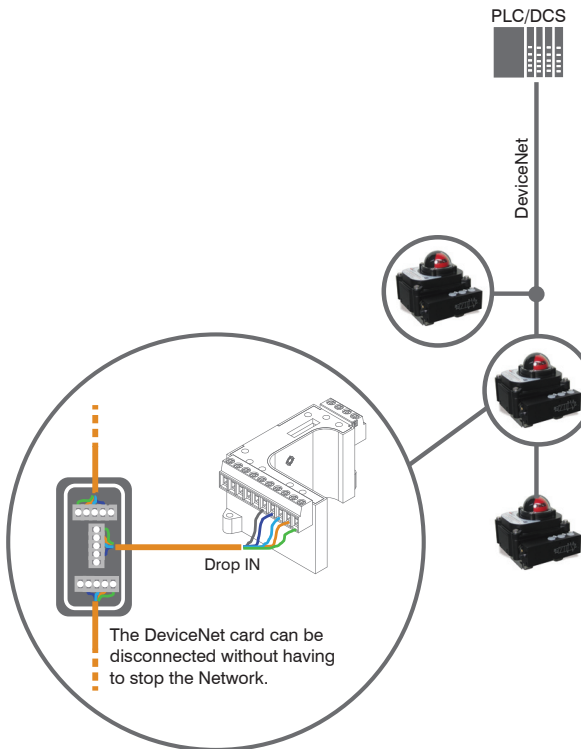
ASi SCC SPECIFICATIONS

	With No Inputs/Outputs Active	One Input Active	Two Input Active	Three Input Active	Four Input Active	One Output Active	Two Output Active
CONSUMPTION CURRENT	11.0mA ±3%	11.4mA ±3%	11.8mA ±3%	13.97 mA ±3%	16.1 mA ±3%	Increase the coil current (max. 1.5w)	Increase the coil current (max.2x 1.5w)
OPERATION VOLTAGE	20-28VDC (check voltage range of the solenoid valve used)						
TEMPERATURE RANGE	-40°C to 85°C						
SLAVE PROFILE	I/O Code ID Code Ext. I/O Code Ext. ID Code	7 A 0 F	DO=I/O, D1=I/O, D3=I/O Remote I/O Port				
INPUT	TYPE	REFERENCE	DATA "BITMAP" CLASS #4 INSTANCE #4 ATTRIBUTE #3 (DATA)				
0	Hall effect sensor (closed), upper sensor	Internal sensor	Bit 0				
1	Hall effect sensor (opened), lower sensor	Internal sensor	Bit 1				
2	Active in High	Connector 1 - pin 7(+24) and 8(GND)	Bit 2				
3	Active in High	Connector 1 - pin 9(+24) and 10 (GND)	Bit 3				
OUTPUT	TYPE	REFERENCE	DATA "BITMAP" CLASS #4 INSTANCE #32 (STATIC OUTPUT) ATTRIBUTE #3 (DATA)				
0	Active in Low	Conn 2 - pin 1(+24) e2 (out)	Bit 0				
1	Active in Low	Conn 2 - pin 3(+24) e4 (out)	Bit 1				

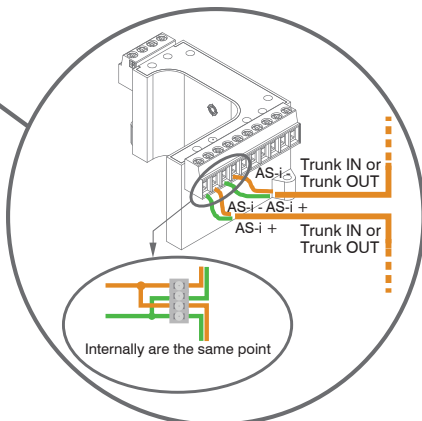
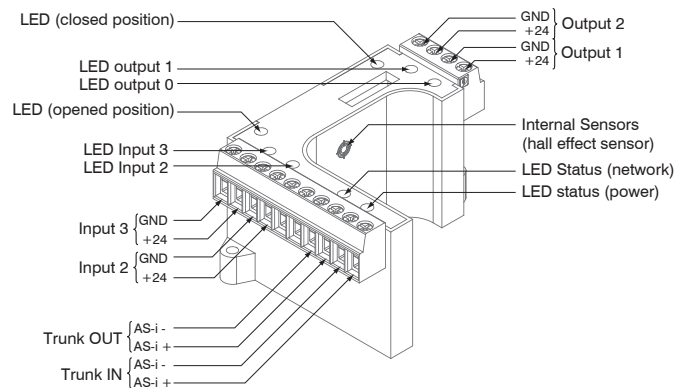
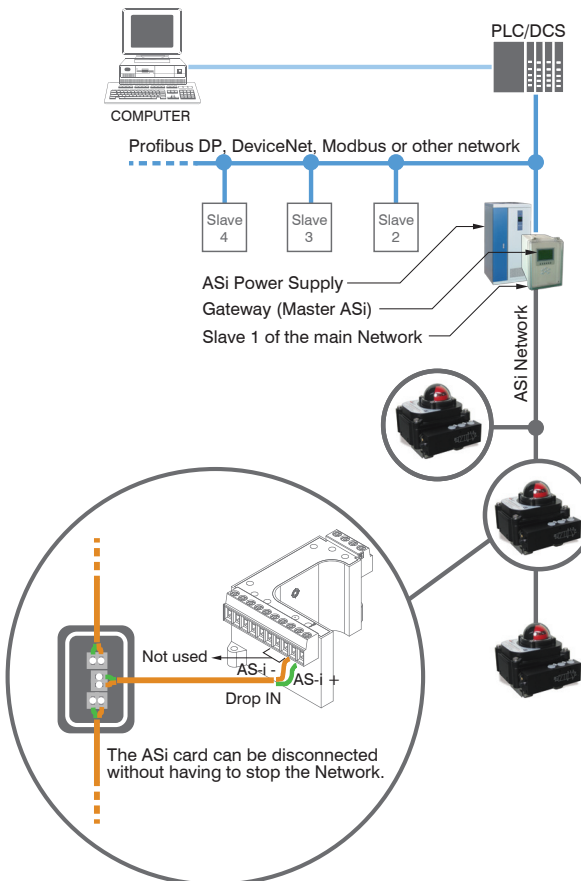
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DeviceNet WIRING



ASi WIRING



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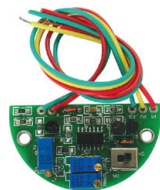
POSITION TRANSMITTER (PT)

Armed with Airpower position transmitter, the APIS Series valve controller can feedback the valve position to PLC accurately through the output signal of 4-20mA.

Main Features:




- Feedback the rotary valve position through analog signal (4-20mA) directly to PLC.
- Position transmitter together with dual pilot actuated 5/2 spool valve. It is able to control the valve position accurately via PLC.

4-20MA FEEDBACK MODULE



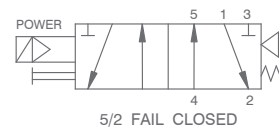
INPUT TYPE	2 wire
INPUT SIGNAL	0°C to 90°C
OUTPUT SIGNAL	4-20mA DC
LOAD RESISTANCE	0-600 Ohm
NOISE RANGE	50mVp.p
ADJUSTABLE RANGE	Zero: ± 10% Span: 60-110%
LINEARITY	± 1%
SENSITIVITY	± 0.2%
HYSTERESIS	0.002
SUPPLY VOLTAGE	15-30VDC
EXPLOSION PROOF	Non-explosive

COILS AND PILOT

MODEL NO.	C1	C2	C3
			
PRESSURE RATING	0-10 bar (NC)	0-7 bar (NC)	0-7 bar (NC)
THE ORIFICE SIZE	Ø1.1mm	Ø0.7mm	Ø0.5mm
POWER CONSUMPTION	<2.3W	<1.3W	<0.7W
VOLTAGES	12/24VDC, 24/110/220VAC	6/12/24VDC	12/24VDC
AVAILABILITY	Not available for ASi & DeviceNet.	Available for ASi & DeviceNet.	Available for ASi & DeviceNet.

SPOOL VALVE

MODEL NO. S1



POWER	Off/ on
VALVE POSITION	Closed/ open
PRESSURE RATING	1-8 bar (15-100psi)
AIR FLOW	CV= 1.4
WORKING TEMPERATURE	-20°C to 85°C (standard) -40°C to 60°C (low temp.)