

ASCO™ Signaling Box IO-Link Communication

With or without integrated pilot option, for series 290 and 390 valves

Series
890

Features and Benefits

- Valve position status & diagnostics is communicated through the I/O link communication
- IO-Link communication protocol allow easy electrical installation using M12 connector
- Ability to add an optional integrated pilot controlled through the I/O link communication
- The signaling box is supplied pre-installed and pre-adjusted on the valve
- Specifications are laser marked to make them resistant to the cleaning process
- Integrated LED gives an immediate visual status of the valve position with high light intensity
- Non condensing system option avoids moisture

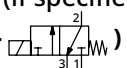
Operation

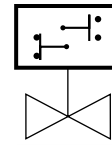
The signaling box IO-Link series 890 allows precise monitoring of the 2 valve stem positions (open and close) thanks to its integrated linear potentiometer. Its embeded pressure sensor allow also monitoring of the internal pressure of the actuator. A variant exists with an internal pilot to directly control the valve. It has LED status indication for visualization of valve position and control. The IO-Link® class A communication protocol allows controlling the setpoint, feedback and parameters data.

General

Ambient temperature range	+0°C to 50°C (32°F to 122°F)
Max. pilot pressure	10 bar
Degree of protection	IP66 (EN 60529) or IP69K (option)
Vibration	Max. 1 g (EN 60068-2-6)
LED status indication	LED yellow = Valve open position LED green = Valve close position LED white = status LED red = error LEDs orange and blue = data feedback
Fluid	Air or inert gas, filtered at 25 µm, lubricated or not

Construction

Body	Glass fiber filled PA
Cover (with LED)	
Top cover	PA (transparent)
Side cover	Glass fiber filled PA or stainless steel
Cover (without LED)	Aluminium
Valve adaptor	Brass or stainless steel
Guiding and bearing	POM
Seals	NBR
Interface gasket	NBR
Internal pilot (if specified)	ASCO™ 302 series
(NC function - )	High pressure version (orifice 1.1 mm): 10 bar (150 psi)



Electrical characteristics

Nominal supply voltage	24 V DC \pm 10%, max. ripple 10% w/ IO-Link® cable
Power	5.7 W (internal 302 pilot version) / 3W (No pilot version)
IO-Link®	Communication for setpoint and feedback and parameters Protocol specification V1.1
Process data	Port Class A device with COM3 (230.4 kBaud) 1 Byte IN 8 Byte OUT: Status bytes for errors/maintenance/auto initialization/fully closed or open
Electrical connection	M12 male code A per IEC 61076-2-101

Certifications and Approvals

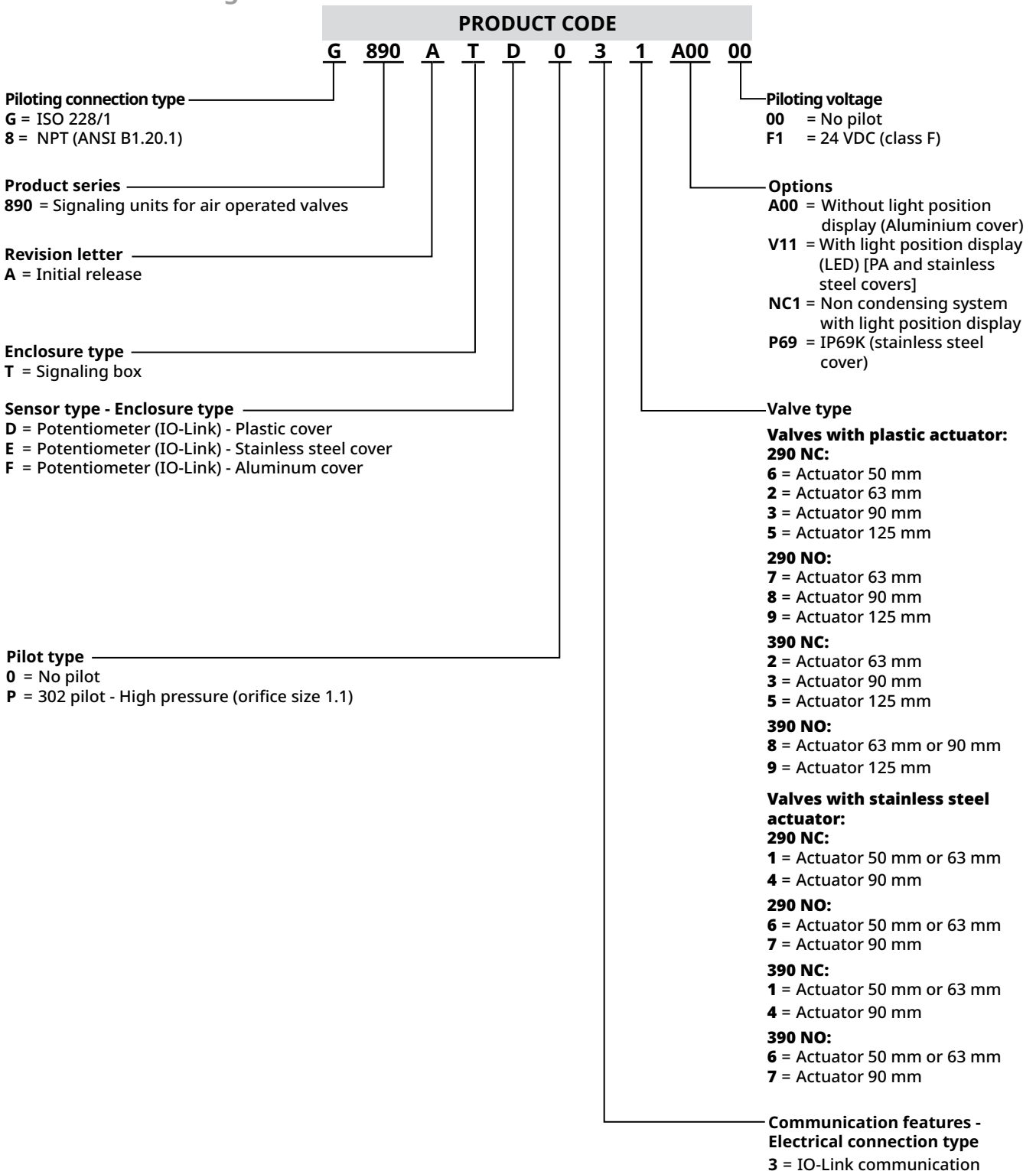
- RoHS compliance
- Reach compliant

Options

- IP69K according to the standard ISO 20653 with stainless steel cover available for cleaning requirement using hot and high-pressure water jet
- NCS (Non condensing system): Gives a permanent internal air leakage to avoid moisture inside the enclosure

ASCO™ Signaling Box

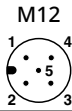
Product selection guide



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Installation

- The signaling box can be installed in any position
- Adjustable signaling box enables 360° access to cable gland
- Installation/maintenance instructions are included with each signaling box
- Electrical connection: **IO-Link® Class A**



+24 V DC, power supply, L+	1
Digital OUT	2
0 V DC, power supply, L-	3
IO-Link® communication CQ	4
Not connected	5
EMC shield	Body

• **LED Status:**

Status mode	Description	LED 1	LED 2	LED 3	LED 4	LED 7
		Position status				
	Valve OPEN	✱				
	Valve CLOSED		✱			
Initialization	Initialization mode	⊙	⊙			
	Manual mode			⊙		
Error	3 Signaling box not initialized	⊙	⊙	●		
	4 Component error			●		

- ✱ LED on
- ⊙ LED slow flashing
- LED quick flashing

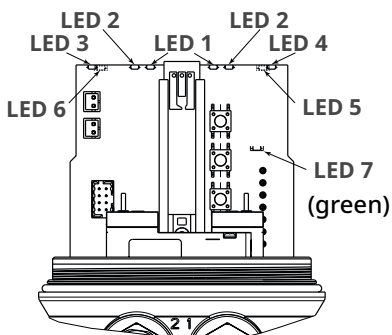
IO-Link® Diagnostic mode	Description	LED 1	LED 2	LED 3	LED 4	LED 5	LED 6	LED 7
		Connection to IO-Link® master						
Valid set point for IO-Link®								⊙
No connection to IO-Link® master								●
IO-Link® identification				⊙				
Status signal			✱					
Maintenance required			⊙				⊙	
Still valid output signal								
Out of specification		●						
Signal out of the specified range								
Function check							●	
Temporary non-valid output signal								
Failure (= Component ERROR)					●			
Non-valid output signal								



LED 1, yellow: Valve open position





































LED 2, green: Valve close position



LED Status indication		
	LED 3, white	= status (hold position / intermediate position)
	LED 4, red	= error
	LED 5, orange	= check function
	LED 6, blue	= maintenance required

IO-Link® diagnostic data

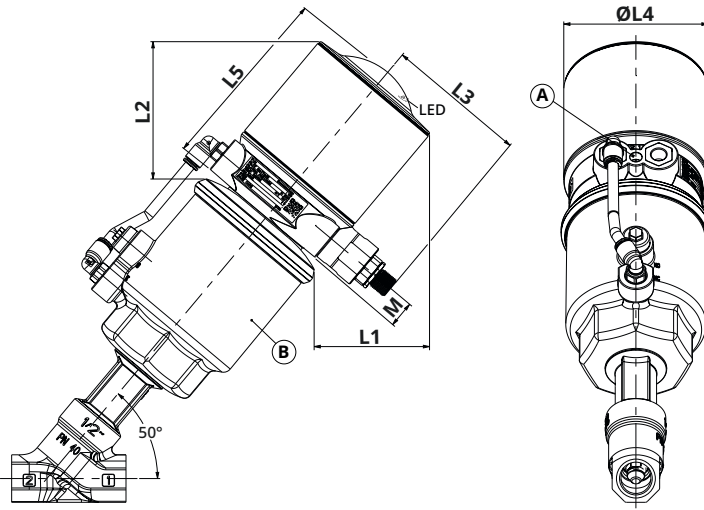
Type	Functions	
Position status	Valve open	 / 
	Valve close	 / 
Initialization	Valve in initialization mode	 / 
	Valve in manual mode	 / 
	Valve not initialized	 / 
Warning	Component ERROR	 / 
NAMUR diagnostic mode	IO-Link® identification	 / 
	Status signal	 / 
	Maintenance required (Still valid output signal)	 / 
	Out of specification (Signal out of the specified range)	
	Piloting pressure is out of range	 / 
	Temperature of piloting fluid is out of range	
	Temperature of PCB is out of range	
	Function check (Temporary non-valid output signal)	 / 
	Failure (= component ERROR ; non-valid output signal)	 / 
	Pilot defect	
Valve process data	Cycle counter	
	Distance (km)	
	Response time	
	Dead time	
	Position (open / close)	
	Position (% stroke)	
	Piloting pressure	
	Temperature inside	

 = information provided by LED visualization
 = information provided by Field bus

Dimensions mm (inches), Weight kg (Lbs)

Configurator - CAD Files

Angle seat valve - Plastic actuator



Actuator diameter		L1	L2	L3 max.		ØL4	L5	M
				IP 66	IP69K ⁽¹⁾ + NCS ⁽²⁾			
50 mm	mm	69	80	81	84	82	108.5	15.2
63 mm		66	78					
90 mm		55	70					
125 mm		41	58.5					
50 mm	(in)	2.717	3.150	3.189	3.307	3.228	4.272	0.6
63 mm		2.598	3.071					
90 mm		2.165	2.756					
125 mm		1.614	2.303					

⁽¹⁾ IP69K version (63 mm to 125 mm actuators only).

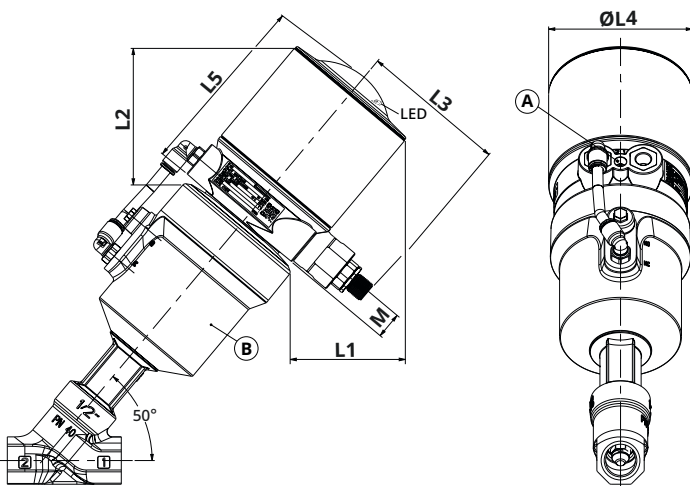
⁽²⁾ Stainless steel tube only.

(A) Unit rotation lock set screw
(orientable through 360°)

(B) For plastic actuators 50 mm, 63 mm to 125 mm

Weight (Signaling box alone)			
PA	Stainless steel	Aluminium	
0.550	0.750	0.610	kg
1.21	1.65	1.36	(Lbs)

Angle seat valve - Stainless steel actuator



Actuator diameter		L1	L2	L3 max.		ØL4	L5	M
				IP 66	IP69K + NCS			
50 mm	mm	70.5	81.5	81	84	82	108.5	15.2
63 mm		66	78.5					
90 mm		56.5	70.5					
50 mm	(in)	2.776	3.209	3.189	3.307	3.228	4.272	0.6
63 mm		2.598	3.091					
90 mm		2.224	2.776					

(A) Unit rotation lock set screw
(orientable through 360°)

(B) For stainless steel actuators 50 mm to 90 mm