

ASCO™ Food & Process Solenoid Valves

single/dual solenoid (mono/bistable function) - pilot operated
aluminium body -40°C - "NAMUR" style - 1/4" tapped

3/2 NC - 5/2
SERIES
551

Features & Benefits

- The monostable spool valves in conformity with IEC 61508 Standard (2010 route 2_H version) have TÜV (551 series) certified with integrity levels: SIL 2 for HFT = 0 / SIL 3 for HFT = 1
- The NAMUR version has all ports on the same side and with the same threads for a better resistance to water, dust and better fitting connection
- The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)
- Can be externally piloted (external air pilot supply) to convert valve to zero minimum operation by flipping a gasket
- The solenoid valves exist with all protection mode: Ex db, Ex eb mb, Ex mb and Ex ia
- The screw of valve assembly in stainless steel is integrate on the 551



General

Differential pressure 2 - 10.4 bar [1 bar = 100 kPa]
Flow (Qv at 6 bar) 1/4 = 700 l/min (ANR)

Fluids (*)	Temperature range (TS)	Seal materials (*)
air, inert gas, filtered	-40°C to +80°C	NBR (nitrile) + PUR (polyurethane)

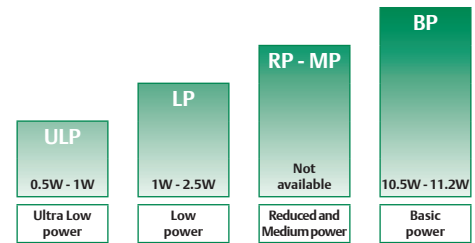
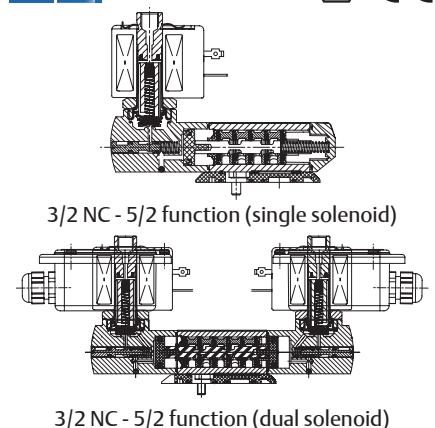
Materials in contact with fluid

(*) Ensure that compatibility of materials in contact with fluids is verified.
Body, end cover Aluminium, black anodized with PBT spring return Glass fibre filled PA

End cover (spring return)	Glass fibre filled PA
Interface plates	Glass fibre filled PA
Spool valve internal parts	Zamak, stainless steel, POM, aluminium
Pilot internal parts	Refer to specific solenoid catalogue pages
Pilot end covers	Aluminium
Core tube	Stainless steel
Core spring	Stainless steel
Seals	NBR + PUR
Top disc	PA
Disc holder	POM
Cartridge (low power)	Welded, packless AISI 430
Seat	Brass
Seat insert	POM
Shading coil	Copper
Rider rings (low power)	PTFE (NF/WSNF solenoids only)

Electrical characteristics

Standard voltages DC (=) 24V - 48V
AC (~) 24V - 48V - 115V - 230V/50Hz
(Other voltages and 60 Hz on request)



POWER LEVELS - cold electrical holding values (watt)

Specifications

Pipe size	Orifice size	Flow coefficient Kv	Operating pressure differential (bar)			Power level	Prefix optional solenoids						Basic catalogue number				
			Min. ⁽¹⁾	Max. (PS)	Air (*)		NEMA	ATEX / IECEx			IP65						
(*)	(mm)	(m ³ /h) (l/min)	~	=	~/=	7 & 9	Ex db	Ex eb mb	Ex mb	Ex ia	IP65	SC					
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)																	
1/4	6	0.6	10	0/2	10	10	10.5W/11.2W	-	-	●	●	●	-	-	●	❖551A482 ⁽³⁾	
							10.5W/11.2W	●	-	-	-	-	-	-	-	-	❖551G482 ⁽³⁾
							1W/2.5W	-	●	●	●	○	-	-	-	-	❖551A382 ⁽³⁾
							1.8W	○	-	-	-	-	-	-	-	-	❖551G382 ⁽³⁾
							0.5W	-	○	-	-	-	○	-	-	-	❖551A382 ⁽³⁾
							0.55W	○	-	-	-	-	-	-	-	-	-
2	10	10	0.5W	-	-	-	-	-	-	-	○	-	❖551B282 ⁽³⁾⁽⁴⁾				
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)																	
1/4	6	0.6	10	0/2	10	10	10.5W/11.2W	-	-	●	●	●	-	-	●	❖551A484	
							10.5W/11.2W	●	-	-	-	-	-	-	-	-	❖551G484
							1W/2.5W	-	●	●	●	○	-	-	-	-	❖551A384
							1.8W	○	-	-	-	-	-	-	-	-	❖551G384
							0.5W	-	○	-	-	-	○	-	-	-	❖551A384
							0.55W	○	-	-	-	-	-	-	-	-	-
2	10	10	0.5W	-	-	-	-	-	-	-	○	-	❖551B284 ⁽⁴⁾				

❖ Select 8 for NPT ANSI 1.20.3 or select G for ISO G (228/1) ● Available feature ○ Available feature in DC only. - Not available
(1) Zero minimum is only achieved if external pressure is applied. (2) UL CSA
(3) Certified IEC 61508 Functional Safety data, use suffix "SL". (4) External power supply with CNOMO pilot not possible.

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- The spool valve exists in 3/2 NC, 5/2, threaded ports
- The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)
- Can be externally piloted (external air pilot supply) to convert valve to zero minimum operation by flipping a gasket
- The solenoid valves exist with all protection mode: Ex db, Ex eb mb, Ex mb and Ex ia
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Differential pressure 2 - 10.4 bar [1 bar = 100 kPa]
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Materials in contact with fluid

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Body	Aluminium, black anodized with PBT spring return
End cover (spring return)	Glass-filled PA
Spool valve internal parts	Zamak, stainless steel, POM, aluminium
Pilot internal parts	Refer to specific solenoid catalogue pages
Pilot end covers	Aluminium
Core tube	Stainless steel
Core spring	Stainless steel
Seals	NBR + PUR
Top disc	PA
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Seat	Brass
Seat insert	POM
Shading coil	Copper
Rider rings (low power)	PTFE

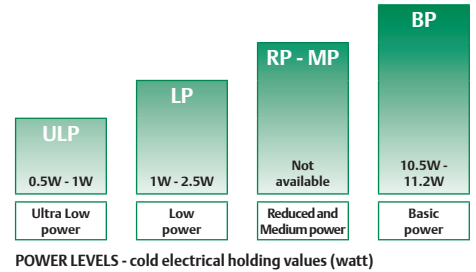
Electrical characteristics

Standard voltages DC (=) 24V - 48V
(Other voltages and 60 Hz on request) AC (~) 24V - 48V - 115V - 230V/50Hz

Specifications

Pipe size	Orifice size	Flow coefficient Kv	Operating pressure differential (bar)			Power level	Prefix optional solenoids								Basic catalogue number				
			Min. ⁽¹⁾	Max. (PS)			NEMA	ATEX / IECEx				IP65							
				Air (*)	~			=	7 & 9	Ex db	Ex eb mb		Ex mb	Ex ia		SC			
⊕	(mm)	(m³/h) (l/min)				~/=	EF ⁽²⁾	LPKF	NF	EM	PV	LI	LISC						
3/2 NC - Solenoid air pilot operated - spring return (monostable)																			
1/4	6	0.6	10	0/2	10	10	10.5W/11.2W	-	-	●	●	●	-	-	●	⊕551A491 ⁽³⁾			
							10.5W/11.2W	●	-	-	-	-	-	-	-	●	⊕551G491 ⁽³⁾		
							1W/2.5W	-	●	●	●	○	-	-	-	●	⊕551A391 ⁽³⁾		
							1.8W	○	-	-	-	-	-	-	-	-	●	⊕551G391 ⁽³⁾	
							0.5W	-	○	-	-	-	-	○	-	-	-	⊕551A391 ⁽³⁾	
							0.55W	○	-	-	-	-	-	-	-	-	-	-	⊕551H391 ⁽³⁾
2	10	10	0.5W	-	-	-	-	-	-	-	-	○	-	⊕551B291 ^(3/4)					
3/2 NC - Solenoid air pilot operated and return (bistable)																			
1/4	6	0.6	10	0/2	10	10	10.5W/11.2W	-	-	●	●	●	-	-	●	⊕551A493			
							10.5W/11.2W	●	-	-	-	-	-	-	-	-	●	⊕551G493	
							1W/2.5W	-	●	●	●	○	-	-	-	-	●	⊕551A393	
							1.8W	○	-	-	-	-	-	-	-	-	-	●	⊕551G393
							0.5W	-	○	-	-	-	-	○	-	-	-	-	⊕551A393
							0.55W	○	-	-	-	-	-	-	-	-	-	-	-
2	10	10	0.5W	-	-	-	-	-	-	-	-	○	-	⊕551B293 ⁽⁴⁾					
5/2 - Solenoid air pilot operated - spring return (monostable)																			
1/4	6	0.6	10	0/2	10	10	10.5W/11.2W	-	-	●	●	●	-	-	●	⊕551A497 ⁽³⁾			
							10.5W/11.2W	●	-	-	-	-	-	-	-	-	●	⊕551G497 ⁽³⁾	
							1W/2.5W	-	●	●	●	○	-	-	-	-	●	⊕551A397 ⁽³⁾	
							1.8W	○	-	-	-	-	-	-	-	-	-	●	⊕551G397 ⁽³⁾
							0.5W	-	○	-	-	-	-	-	○	-	-	-	⊕551A397 ⁽³⁾
							0.55W	○	-	-	-	-	-	-	-	-	-	-	-
2	10	10	0.5W	-	-	-	-	-	-	-	-	○	-	⊕551B297 ^(3/4)					
5/2 - Solenoid air pilot operated and return (bistable)																			
1/4	6	0.6	10	0/2	10	10	10.5W/11.2W	-	-	●	●	●	-	-	●	⊕551A498			
							10.5W/11.2W	●	-	-	-	-	-	-	-	-	●	⊕551G498	
							1W/2.5W	-	●	●	●	○	-	-	-	-	●	⊕551A398	
							1.8W	○	-	-	-	-	-	-	-	-	-	●	⊕551G398
							0.5W	-	○	-	-	-	-	-	○	-	-	-	⊕551A398
							0.55W	○	-	-	-	-	-	-	-	-	-	-	-
2	10	0	0.5W	-	-	-	-	-	-	-	-	○	-	⊕551B298 ⁽⁴⁾					

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**3/2 NC - 5/2
SERIES
551**

prefix							description	power level			
1	2	3	4	5	6	7		ULP	LP	MP	BP
E	F						Explosionproof - NEMA 7, 9 - Zinc plated steel conduit (18" continuous leads)	○	○	-	●
E	F	H	T				EF (18" continuous leads) + high temperature	○	○	-	●
E	F	H	T	L			EF + high temperature + 72" continuous leads	○	○	-	●
E	F	L					EF + 72" continuous leads	○	○	-	●
J	B	E	F				EF + Junction box (conduit in 1/2" NPT)	○	○	-	●
J	B	E	F	M	F		EF + Junction box (conduit in 1/2" NPT) + surge suppression coils	○	○	-	●
J	C	E	F				EF + Junction box (conduit in 3/4" NPT)	○	○	-	●
J	C	E	F	H	T		EF + Junction box (conduit in 3/4" NPT) + high temperature	○	○	-	●
E	M						Waterproof IP66/67 - Metal enclosure (EN/IEC 60079-7,-18 and -31)*	-	●	-	●
P	V						Encapsulated epoxy moulded (EN/IEC 60079-18)*	-	○	-	●
L	I						I.S. with Aluminium IP66/IP67 enclosure (EN/IEC 60079-11+31)*	○	-	-	-
P	V						Encapsulated epoxy moulded (EN/IEC 60079-18)*	-	○	-	●
S	C						Solenoid with spade plug connector (EN/IEC 60730)	-	●	-	●
L	P	K	F				Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*	○	●	-	-
N	F						Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*	-	●	-	●

* ATEX/IECEx valves using these solenoids are approved according to EN ISO 80079-36 (2016) and EN ISO 80079-37 (2016) [non electrical]

Prefix	Connection
SC	Spade plug connector with cable gland EN175301-803A (ISO 4400) for cables with an outer diameter from 6 to 10 mm
EM	M20 plastics cable gland for cables with an outer diameter from 7 to 12 mm.
PV	Moulded-in cable, standard length 2 m
LI	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
LPKF	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
EF	1/2" NPT conduits
JBEF	EF + Junction box
NF	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland

Prefix option	Power ratings				Operator ambient temperature range (TS) (°C)	Safety code	Electrical enclosure protection (EN 60529)	Replacement coil / kit	
	Inrush	Holding	Hot/cold	=				~	=
	(VA)	(VA)	(W)						
Basic power (BP)									
SC	55	23	10.5	9/11.2	-40 to +75	EN 60730	IP65, moulded	400425-117	400425-142
EM	55	23	10.5	9/11.2	-40 to +40	I12G Ex eb mb IIC Gb T3, I12D Ex tb IIIC Db	IP66/67, steel /SS	400909-117	400913-142
PV	55	23	10.5	9/11.2	-40 to +65	I12G Ex mb IIC Gb T3(~)/T4(=), I12D Ex mb IIIC Db	IP67, moulded	-	-
EF	55	23	10.5	9/11.2	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
EFHT	55	23	10.5	9/11.2	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
JBEF	55	23	10.5	9/11.2	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
JBEFHT	55	23	10.5	9/11.2	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
NF	55	23	10.5	-	-60 to +25/40/60	I12G Ex db IIC Gb T6/T5/T4, I12D Ex tb IIIC Db	IP66/67, alu./SS	400405-117	-
NF	-	-	-	9/11.2	-60 to +40/60/75	I12G Ex db IIC Gb T6/T5/T4, I12D Ex tb IIIC Db	IP66/67, alu./SS	-	400405-142
Low Power (LP)									
SC	1.5	1.5	1.5	1.7/1.7	-40 to +60	EN 60730	IP65, moulded	400925-097	400925-042
EM	1.5	1.5	1.5	1.7/1.7	-40 to +40/55	I12G Ex eb mb IIC Gb T6/T5, I12D Ex tb IIIC Db	IP66/67, steel /SS	-	-
PV	-	-	-	1.7/1.7	-40 to +65	I12G Ex mb IIC Gb T6, I12D Ex mb IIIC Db	IP67, moulded	-	-
EF	-	-	-	1.8/1.8	-40 to +60	NEMA type 7 and 9	NEMA 4X	-	-
EFHT	-	-	-	1.8/1.8	-40 to +60	NEMA type 7 and 9	NEMA 4X	-	-
JBEF	-	-	-	1.8/1.8	-40 to +60	NEMA type 7 and 9	NEMA 4X	-	-
JBEFHT	-	-	-	1.8/1.8	-40 to +60	NEMA type 7 and 9	NEMA 4X	-	-
LPKF	2.4	2.4	2.4	-	-40 to +40/65/80	I12G Ex db IIB+H2 Gb T6/T5/T4, I12D Ex tb IIIC Db	IP66/67, alu./SS	-	-
NF	1.85	1.85	1.85	1.5/1.8	-60 to +75/80	I12G Ex db IIC Gb T6/T5, I12D Ex tb IIIC Db	IP66/67, alu./SS	-	-
Ultra Low Power (ULP)									
EF	-	-	-	0.55/0.7	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
EFHT	-	-	-	0.55/0.7	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
JBEF	-	-	-	0.55/0.7	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
JBEFHT	-	-	-	0.55/0.7	-40 to +52/40	NEMA type 7 and 9	NEMA 4X	-	-
LI	-	-	-	0.5/0.5	-40 to +60	I11G Ex ia IIC T6 Ga, I12D Ex tb IIIC Db	IP66/67, alu.	-	-
LPKF	-	-	-	0.5/0.5 ⁽¹⁾	-40 to +60	I12G Ex db IIB+H2 Gb T6, I12D Ex tb IIIC Db	IP66/67, alu./SS	-	-

⁽¹⁾ Limited to 24 VDC.

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