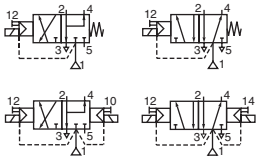
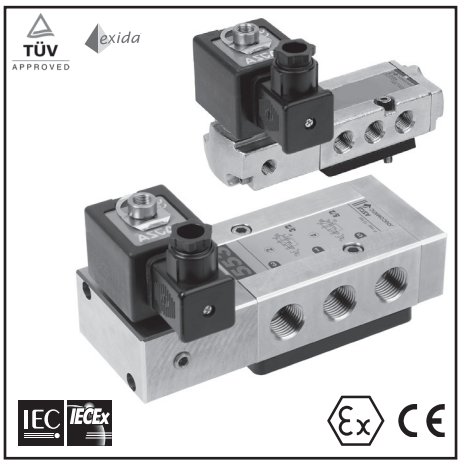
SOLENOID VALVES

pilot operated, spool type
single/dual solenoid (mono/bistable function)
stainless steel body, NAMUR, 1/4 - 1/2

3/2 NC 5/2



3/2-5/2
Series
551
553



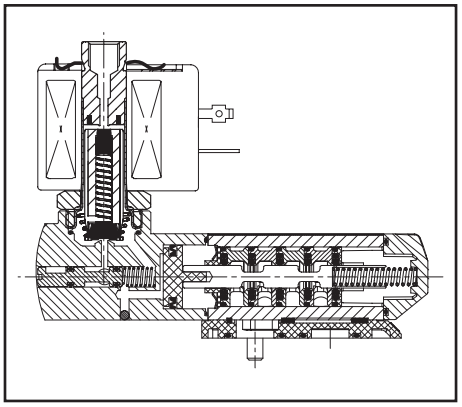
FEATURES

- *The monostable spool valves have TÜV-EXIDA certified IEC 61508 Functional Safety data and can be used up to SIL 4 (551/TÜV)-SIL 3 (553/EXIDA)*
- *The solenoid operated spool valves have threaded port connections and "NAMUR" interface*
- *The same spool valve can be adapted for 3/2 NC or 5/2 functions for controlling double-acting and single-acting actuators*
- *All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas such as clean rooms, and applications in the pharmaceutical and food processing sectors*
- *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 satisfy all relevant EC Directives*

GENERAL

Differential pressure 2 - 10 bar [1 bar =100 kPa]
Flow (Qv at 6 bar) 1/4 = 700 l/min (ANR)
1/2 = 3000 l/min

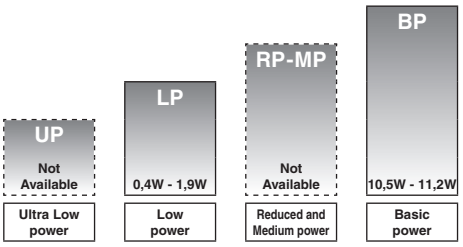
fluids (✶)	temperature range (TS)	seal materials (✶)
air, inert gas, filtered	551 : - 40°C to + 80°C 553 : - 40°C to + 60°C	VMQ (silicone) + PUR (polyurethane)



MATERIALS IN CONTACT WITH FLUID

(✶) Ensure that the compatibility of the fluids in contact with the materials is verified

Body, end covers	Stainless steel, AISI 316L
Interface plates	Glass-filled PA
Spool valve internal parts	Stainless steel, POM
Core tube	Stainless steel
Core and plugnut	Stainless steel
Core spring	Stainless steel
Seals & discs	NBR
Top disc	FPM
Disc holder	POM
Cartridge (Low power)	Welded, packless AISI 430
Seat	Stainless steel
Seat insert	POM
Shading coil	Copper
Rider ring (Low power)	PTFE



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.(2)	max. (PS) air (✶)			NEMA	ATEX / IECEx								IP65	
								7 & 9	Ex d			Ex e mb	Ex mb	Ex ia		EEx nA		
(❖)	(mm)	(m^3/h)	(l/min)		~	=	~/=	EF	LPKF	NF		EM	PV	LI	IS	ZN	SC	
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)																		
1/4	6	0,60	10	0 / 2	10	10	BP	-	-	●	-	●	●	-	-	●	●	❖551A409 (1)
1/4	6	0,60	10	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	-	❖551G409 (1)
1/4	6	0,60	10	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	❍	●	❖551A309 (1)
1/4	6	0,60	10	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	-	❖551G309 (1)
1/2	13	3,15	52,5	0 / 2	10	10	BP	-	-	●	-	●	●	-	-	●	●	❖553A409
1/2	13	3,15	52,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	-	❖553G409
1/2	13	3,15	52,5	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	❍	●	❖553A309
1/2	13	3,15	52,5	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	-	❖553G309
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)																		
1/4	6	0,60	10	0 / 2	10	10	BP	-	-	●	-	●	●	-	-	●	●	❖551A410
1/4	6	0,60	10	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	-	❖551G410
1/4	6	0,60	10	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	❍	●	❖551A310
1/4	6	0,60	10	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	-	❖551G310
1/2	13	3,15	52,5	0 / 2	10	10	BP	-	-	●	-	●	●	-	-	●	●	❖553A410
1/2	13	3,15	52,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	-	❖553G410
1/2	13	3,15	52,5	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	❍	●	❖553A310
1/2	13	3,15	52,5	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	-	❖553G310

❖ Select **8** for NPT ANSI 1.20.3 or select **G** for ISO G (228/1) ● Available feature ❍ Available feature in DC only
(1) Certified IEC 61508 Functional Safety data, use suffix "SL".
(2) Zero minimum is only achieved if external pressure is applied

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All leaflets are available on: **www.asco-process-scope.com**

PREFIX TABLE

prefix							description	power level			
1	2	3	4	5	6	7		LP	RP	MP	BP
S	C			D	U		Dustproof ATEX (EN 50281-1-1) *	-	-	-	●
E	F						Explosionproof - NEMA 3, 4, 6, 7, 9	❍	-	-	●
E	V						Explosionproof - NEMA 3, 4, 6, 7, 9 - 316 SS	❍	-	-	●
E	M						Encapsulated ATEX + IECEx (EN/IEC 60079 / 61241)*	●	-	-	●
		E	T				Threaded conduit/hole (M20 x 1.5)	●	-	-	●
I	S			S	C		Intrinsically safe ATEX + IECEx (EN/IEC 60079 / 61241) *	❍	-	-	-
L	P	K	F				Flameproof - Alum. ATEX (IEC/ISA/EN: 60079 / 61241) *	❍	-	-	-
N	F						Flameproof - Alum. ATEX + IECEx (EN/IEC 60079 / 61241)*	●	-	-	●
P	V						Encapsulated ATEX + IECEx (EN/IEC 60079 / 61241)*	❍	-	-	●
S	C						Solenoid with spade plug connector (EN 60730)	●	-	-	●
W	P						Waterproof IP67 - Metal enclosure (EN 60730)	●	-	-	●
W	P			D	U		Dustproof ATEX (EN 50281-1-1) - Metal enclosure *	-	-	-	●
L	I						I.S., alu. enclosure IP67 ATEX-IECEx (EN/IEC 60079 / 64241) *	❍	-	-	-
W	P			I	S		Intrinsically safe ATEX + IECEx (EN/IEC 60079 / 61241) *	❍	-	-	-
W	P			Z	N		N.S. metal enclosure ATEX (EN 50021)*	●	-	-	●
W	S						Waterproof IP67 - 316 SS enclosure (EN 60730)	●	-	-	●
W	S			D	U		Dustproof ATEX (EN 50281-1-1) - 316 SS enclosure *	-	-	-	●
W	S	L	P	K	F		Flameproof - St. steel ATEX (IEC/ISA/EN: 60079 / 61241)	❍	-	-	-
W	S	E	M				316 SS "EM" encl. ATEX + IECEx (EN/IEC 60079/61241)*	●	-	-	●
W	S			L	I		I.S., 316L SS, IP67 ATEX-IECEx (EN/IEC 60079 / 64241) *	❍	-	-	-
W	S			I	S		Intrinsically safe ATEX + IECEx (EN/IEC 60079 / 61241) *	❍	-	-	-
W	S	N	F				Flameproof - St. steel 316 ATEX + IECEx (EN/IEC 60079 / 61241)*	●	-	-	●
W	S	Z	N				N.S. 316 SS enclosure ATEX (EN 50021)*	●	-	-	●
Z	N						Encapsulated Non Sparking ATEX (EN 50021) *	❍	-	-	●
		T					Threaded conduit (1/2" NPT)	●	-	-	●
				H	T		Class H - High temperature, **+80°C ambient temp.**	-	-	-	●
						X	Other special constructions	●	-	-	●

SUFFIX TABLE

suffix							description	power level			
1	2	3	4	5	6	7		LP	RP	MP	BP
			M	O			Push type or screw type manual operator	❍/●	-	-	●
	S	L					Certified IEC 61508 Functional Safety data (2)	❍/●	-	-	●

PRODUCT SELECTION GUIDE

STEP 1
Select the fluid temperature range and seal material from the general table on page 7. Select basic catalogue number, including pipe thread identification letter. Refer to the specifications table above.
Example: G551A409

STEP 2
Select prefix (combination). Select the appropriate operator from the specifications table on page 1 and the prefix table on page 2. Select for this operator in the electrical characteristics table on page 3: the power level (LP, BP), the type of electrical enclosure protection and the desired temperature class.
Warning: The ambient temperature range of your application may not exceed the temperature range of your operator.
Example: EM

STEP 3
Select suffix (combination) if required.
Example: MO

STEP 4
Select voltage. Refer to standard voltages on page 9.
Example: 230V / 50Hz

STEP 5
Final catalogue / ordering number.
Example:
EM G551A409MO 230 V / 50 Hz

OPTIONS & ACCESSORIES

series	pipe size	stainless steel exhaust protector		
		G	NPT	(M)
551-553	1/8	**34600418** (1)	**34600482** (1)	-
551	1/4	**34600419** (1)	**34600483** (1)	-
553	1/2	**34600479** (1)	**34600479** (1)	-
551	M5	-	-	**34600484** (1)

● Available feature
❍ Available feature in DC only
- Not available
* ATEX solenoids are also approved according to EN/IEC 61241 (Dust) and EN 13463-1 (non electrical valves)
(1) Provided with "SL" suffix
(2) Not to use with MO suffix

ORDERING EXAMPLES:

SC	G	551 **A** 409			230V / 50 Hz
SC	G	553 **A** 409			230V / 50 Hz
SC	G	551 **A** 409	**SL**		230V / 50 Hz
SC	G	551 **A** 410	**MO**		230V / 50 Hz
SCHT	8	551 **A** 410	**MO**		230V / 50 Hz
ISSC	G	551 **A** 410	**MO**		24V / DC
SC	8	551 **A** 409			230V / 50 Hz
WSLPKF	G	551 **A** 309	**MO**		24V / DC
LPKF	G	551 **A** 309	**MO**		24V / DC
WSLI	G	551 **A** 309			24V / DC
WPIS	G	551 **A** 310			24V / DC
EM	8	551 **A** 409	**MO**		230V / 50 Hz
EF	G	551 **G** 409	**MO**		240V / 60 Hz

prefix (3)
pipe thread
basic number (3)
voltage
suffix

(3) Prefixes EF and EV should always be used with the letter G in the basic number.

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EXPLANATION OF TEMPERATURE RANGES OF SOLENOID VALVES

Valve temperature range	The valve temperature range (TS) is determined by the selected seal material, the temperature range for proper operation of the valve and sometimes by the fluid (e.g. steam)
Operator ambient temperature range	The operator ambient temperature range is determined by the selected power level (LP, RP, MP or BP) and the safety code
Total temperature range	The temperature range of the complete solenoid valve is determined by the limitations of both temperature ranges above

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC (=) 24V - 48V
AC (~) 24V - 48V - 115V - 230V(5)/50Hz; other voltages and 60Hz are available on request

prefix option	power ratings inrush ~ (VA)	holding ~ (VA)	holding ~ (W)	hot/cold = (W)	operator ambient temperature range (TS) (C°)(1)	safety code	electrical enclosure protection (EN 60529)	replacement coil / kit ~ 230 V/50 Hz	replacement coil / kit = 24V/DC	type (2)
Basic power (BP)										
SC	55	23	10,5	9/11,2	-40 to +75	EN 60730	IP65 moulded	400425-117	400425-142	01
SCDU	55	23	10,5	9/11,2	-40 to +75	II3D IP65 T 200°C(~)/135°C(=)	IP65 moulded	- (4)	- (4)	01
WP/WS	55	23	10,5	9/11,2	-40 to +75	EN 60730	IP67 steel/SS	400405-117	400405-142	04
WPDU/WSDU	55	23	10,5	9/11,2	-40 to +75	II3D IP67 T 200°C	IP67 steel/SS	- (4)	- (4)	04
NF/WSNF	55	23	10,5	-	(-60)(7) -40 to +25/40/60	II2G Ex d IIC T6/T5/T4, II2D Ex tD	IP67 alum./SS	400405-117	-	02
NF/WSNF	-	-	-	9/11,2	(-60)(7) -40 to +40/60/75	II2G Ex d IIC T6/T5/T4, II2D Ex tD	IP67 alum./SS	-	400405-142	02
EM/WSEM	55	23	10,5	9/11,2	-40 to +40	II2G Ex e mb II T3, II2D Ex tD	IP67 steel/SS	400909-117	400913-142	04
PV	55	23	10,5	9/11,2	-40 to +65	II2G Ex mb II T3(~)/T4(=),II2D Ex mD 21	IP67 moulded	-(4)	-(4)	05
EF/EV	55	23	10,5	9/11,2	-40 to +54/40	NEMA type 7 and 9	4X moulded	238614-058	238714-006	06
ZN	55	23	10,5	9/11,2	-20 to +50	II3GD EEx nA II T3	IP65 moulded	- (4)	-(4)	01
WPZN/WSZN	55	23	10,5	9/11,2	-40 to +50/60	II3GD EEx nA II T3(~)/T4(=)	IP67 steel/SS	- (4)	- (4)	04
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	07
WP/WS	1,5	1,5	1,5	1,7/1,7	-40 to +60	EN 60730	IP67 steel/SS	400926-097	400926-042	09
LPKF/WSLPKF (6)	-	-	-	0,5/0,5	-40 to +60	II2G Ex d IIB+H2 T6, II2D Ex tD A21	IP67 alum./SS	-	- (4)	13
NF/WSNF	-	-	1,9	- /1,9	(-60)(7) -40 to +75/80	II2G Ex d IIC T6/T5, II2D Ex tD	IP67 alum./SS	- (4)	- (4)	08
EM/WSEM	1,5	1,5	1,5	1,7/1,7	-40 to +40/55	II2G Ex e mb II T6/T5, II2D Ex tD	IP67 steel/SS	- (4)	- (4)	09
PV	-	-	-	1,7/1,7	-40 to +65	II2G Ex mb II T6 / II2D Ex mD 21	IP67 moulded	-	- (4)	10
EF/EV	-	-	-	1,7/1,7	-40 to +60	NEMA type 7 and 9	4X moulded	-	- (4)	11
ISSC (3)	-	-	-	0,4/04	-40 to +60	II1G Ex ia IIC T6, II2D Ex iaD 21	IP65 moulded	-	268976-001	12
LI (6)	-	-	-	0,5/0,5	-40 to +60	II2G Ex ia IIC Gb T6, II2D Ex t IIIC Db	IP67 alum.,	-	- (4)	14
WSLI (6)	-	-	-	0,5/0,5	-40 to +60	II1G Ex ia IIC Ga T6, II2D Ex t IIIC Db	IP67 SS	-	- (4)	14
WPIS/WSIS (3)	-	-	-	0,4/04	-40 to +60	II1G Ex ia IIC T6, II2D Ex iaD 21	IP67 steel	-	268900-001	09
ZN	-	-	-	1,7/1,7	-20 to +50	II3GD EEx nA II T3	IP65 moulded	-	- (4)	07
WPZN/WSZN	1,5	1,5	1,5	1,7/1,7	-40 to +60	II3GD EEx nA II T6	IP67 steel/SS	- (4)	- (4)	09

prefix option	safety parameters U_i = (DC) (V)	I_i (mA)	P_i (W)	L_i (H)	C_i (µF)
Low power (LP)					
ISSC	32	500	1,5	0	0
WPIS/WSIS	32	500	1,5	0	0
LI/WSLI	32	500	1,5	0	0

(1) Temperature range can be limited by sealings
(2) Refer to the dimensional drawings on pages: 4 to 7
(3) ISSC/WPIS/WSIS/LI/WSLI: Check the electrical characteristics in the corresponding catalogue pages
(4) Multiple coil kits are available under ATEX/IECEx, contact us
(5) Low Power, 230 V AC does not exist. Maximum voltage in AC is 115 V
(6) LPKF/WSLPKF/LI/WSLI: Low Power, 24 V DC only
(7) The certified minimum temperature of this operator
- Not available

ELECTRICAL CONNECTIONS

prefix	connection
SC, SCDU, ZN, ISSC	Spade plug connector with cable gland EN175301-803A (ISO 4400) for cables with an outer diameter from 6 to 10 mm
WP, WS, EM, WSEM, WPDU, WSDU, WPZN,WSZN, WPIS, WSIS	M20 cable gland for cables with an outer diameter from 7 to 12 mm. With an internal and external facility for an earthing or bonding conductor
NF, WSNF, LPKF, WSLPKF	1/2" NPT threaded cable entry. Enclosures are supplied without cable gland
PV	Moulded-in cable, standard length 2 m
LI, WSLI	1/2 cable gland for cables with an outer diameter from 6 to 12 mm. With an internal and external facility for an earthing or bonding conductor
EF, EV	1/2" NPT conduits, standard length 35 cm

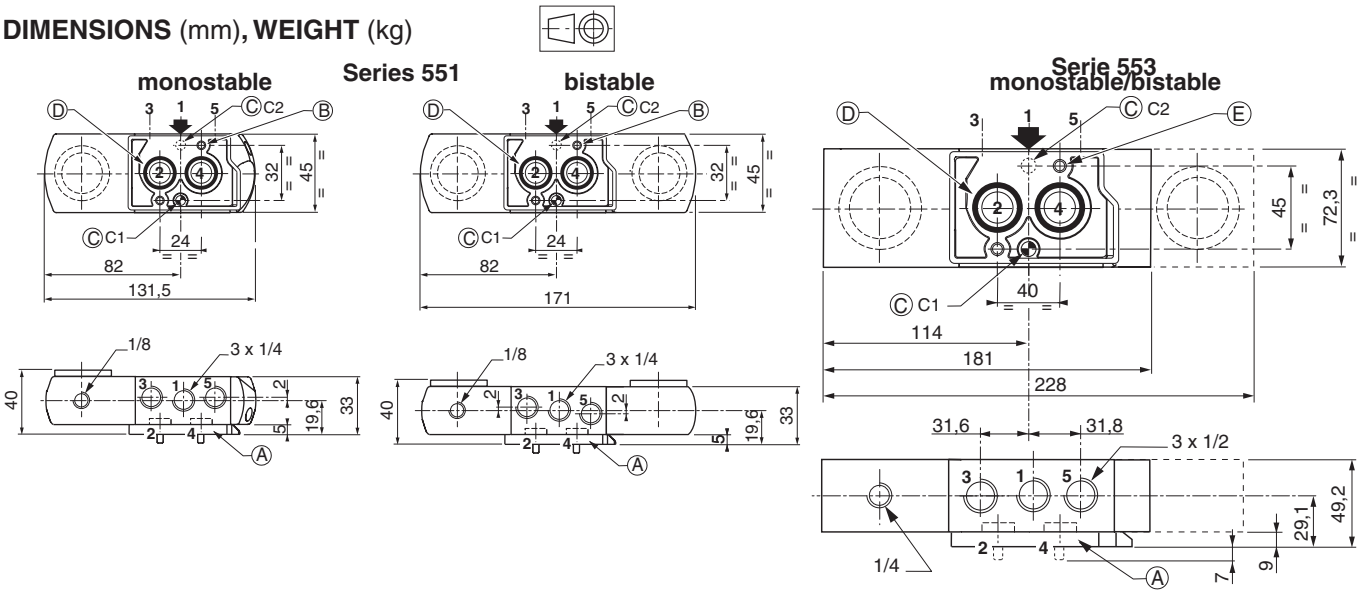
ADDITIONAL OPTIONS

- Valves configured for external pilot air supply, TPL 20547
- Other pipe threads are available on request
- Ex mb/mD (prefix "PV") solenoid can be supplied with various cable lengths
- Compliance with "UL", "CSA" and other local approvals available on request
- 1/2" NPT (prefix "T") and M20 x 1.5 (prefix "ET") conduits (aluminium or 316 SS) available for steel solenoid housing
- Set of stainless steel mounting screws, catalogue number: **97802212** (series 551)
- Set of two exhaust reducers, G1/8, catalogue number: **88100344** (series 551)

INSTALLATION

- Multi language installation/maintenance instructions are included with each valve
- The solenoid valves can be mounted in any position without affecting operation
- 3/2 NC-5/2 spool valve supplied with two interface plates with NAMUR mating surfaces. Depending on function (3/2 NC or 5/2), position one of the two plates on the spool valve body before installing on actuator
- Do not connect the pressure supply to the exhaust port 3. The “environmentally-protected” construction is not adapted for NO function. Contact us for function available in specific version
- Dowel pin (if necessary), bolts and gaskets are standard supplied
- IEC 61508 Functional Safety (suffix SL), allowable temperature range: -40°C to +60°C. For probability of failure, contact us
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- Threaded pipe connection identifier is: 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)
- Prefix "NF/WSNF" enclosure is provided with a 1/2" NPT threaded entry hole, M20 x 1,5 (prefix "ET") is optional. Both are supplied without cable gland
- To comply with IEC 61508 (SIL) the valves must be provided with a specific exhaust protector (see following pages)

DIMENSIONS (mm), WEIGHT (kg)



(A) Interface plates

(B) 2 mounting holes: 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm); 2 screws (CHc M5 x 35), engaged length: 7 mm

(C) One 5 mm dia. hole for dowel pin:
- in position C1: 3/2 NC function plate
- in position C2: 5/2 function plate

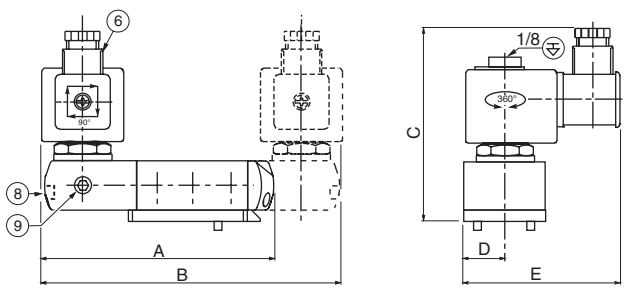
(D) 2 O-ring seals (supplied)

(E) 2 mounting holes: 6,5 mm dia.(Spotfacing: 11 mm dia., depth 6 mm); 2 screws (CHc M6 x 50), engaged length: 7



TYPE 01:
SC, SCDU and ZN
Epoxy moulded
IEC 335 / ISO 4400 (SC, SCDU)
EN 50021 (ZN)

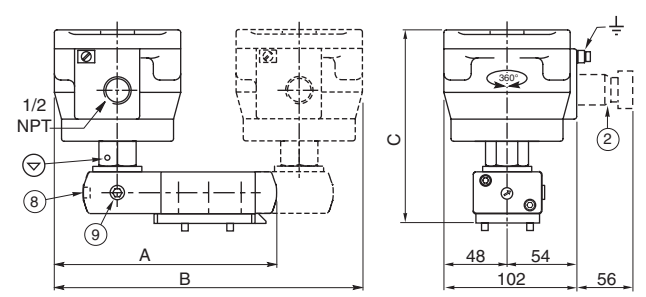
551A409 / 551A410 / 553A409 / 553A410





TYPE 02:
NF / WSNF
Aluminium; epoxy coated / AISI 316 SS
EN/IEC 60079-1 and EN/IEC 61241-1

551A409 / 551A410 / 553A409 / 553A410

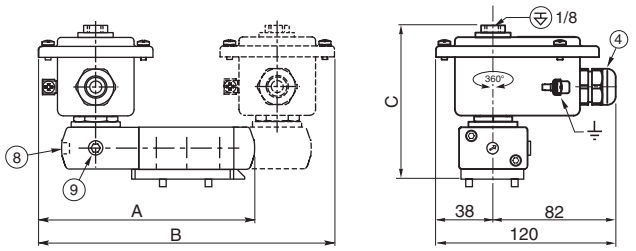


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DIMENSIONS (mm), **WEIGHT** (kg)

TYPE 04:
WP / WS
EM / WSEM
WPDU / WSDU
WPZN / WSZN
Steel; epoxy coated / AISI 316 SS
IEC 335/EN 60079-7,50021 and EN 60079-7, 50281-1-1

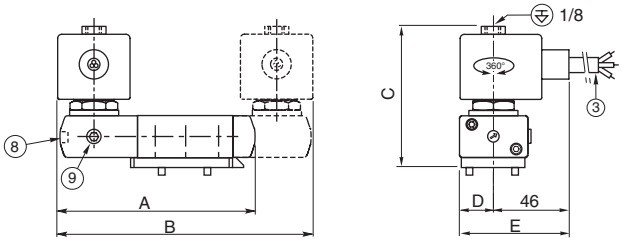
551A409 / 551A410 / 553A409 / 553A410

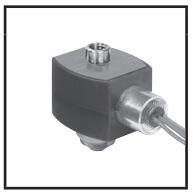




TYPE 05:
PV
Epoxy encapsulated
EN/IEC 60079-18 and EN/IEC 61241-18

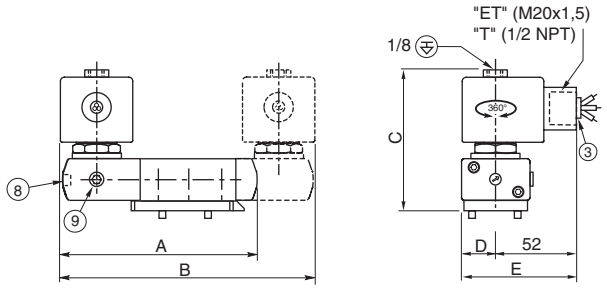
551A409 / 551A410 / 553A409 / 553A410





TYPE 06:
EF and EV: NEMA type 7 and 9
Epoxy encapsulated
ICS-6 ANSI
NOTE: applicable to solenoid only

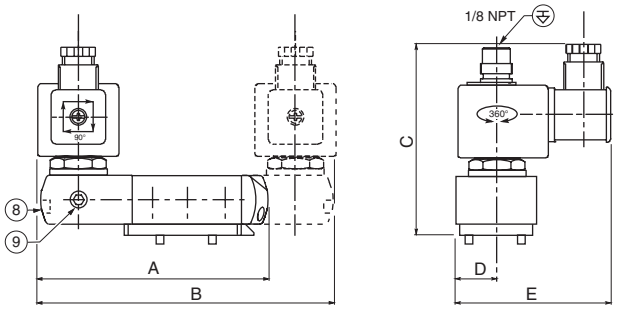
551G409 / 551G410 / 553G409 / 553G410





TYPE 07:
SC and ZN
Epoxy moulded
IEC 335 / ISO 4400
EN 50021

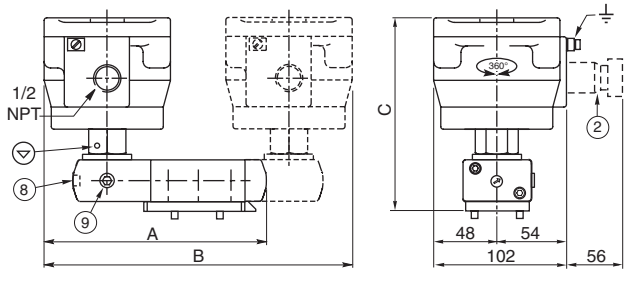
551A309 / 551A310 / 553A309 / 553A310





TYPE 08:
NF / WSNF
Aluminium; epoxy coated / AISI 316 SS
EN/IEC 60079-1 and EN/IEC 61241-1

551A309 / 551A310 / 553A309 / 553A310



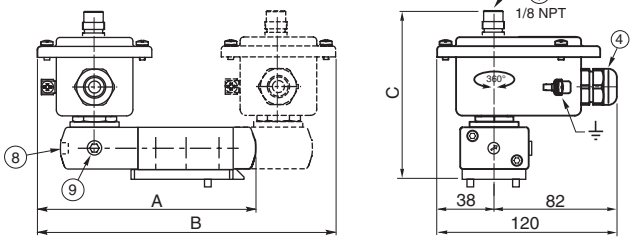
2010/R01

DIMENSIONS (mm), **WEIGHT** (kg)



TYPE 09:
WP / WS
EM / WSEM
WPZN / WSZN
WPIS / WSIS
Steel; epoxy coated / AISI 316 SS
IEC 335 / EN 60079-7/11/18/26 and EN 61241-1/11

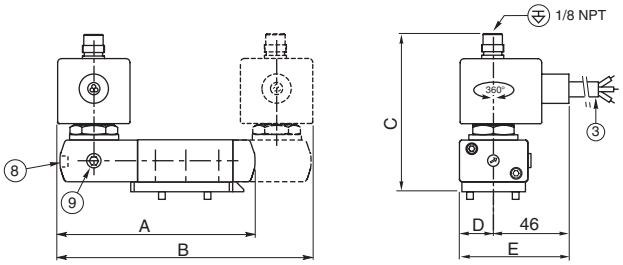
551A309 / 551A310 / 553A309 / 553A310

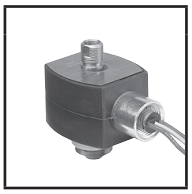




TYPE 10:
PV
Epoxy encapsulated
EN/IEC 60079-18 and EN/IEC 61241-18

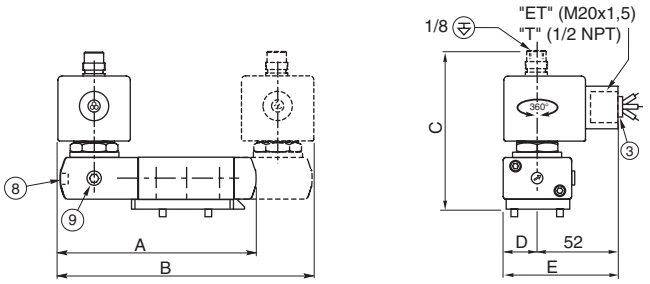
551A309 / 551A310 / 553A309 / 553A310





TYPE 11:
EF and EV: NEMA type 7 and 9
Epoxy encapsulated
ICS-6 ANSI
NOTE: applicable to solenoid only

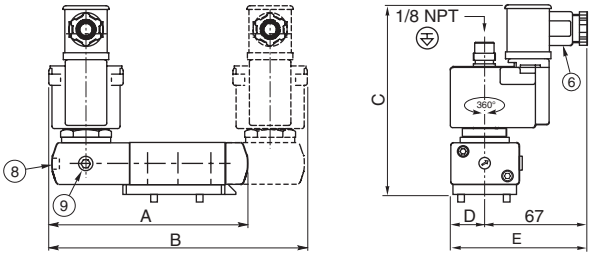
551G309 / 551G310 / 553G309 / 553G310





TYPE 12:
ISSC
Polypropylene moulded
Epoxy moulded
IEC 335 / EN 60079-11/26 and EN/IEC 61241-11

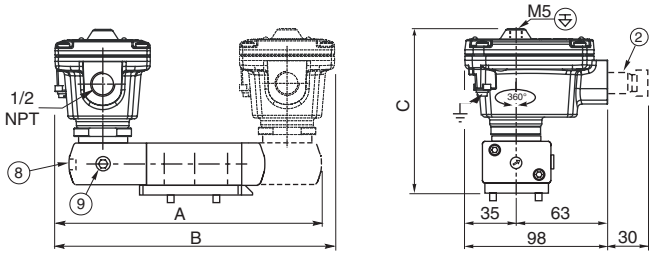
551A309 / 551A310 / 553A309 / 553A310





TYPE 13:
LPKF / WSLPKF
Aluminium, cataphorese black painting / AISI 316L SS
EN/IEC/ISA 60079-1 and EN/IEC/ISA 61241-1

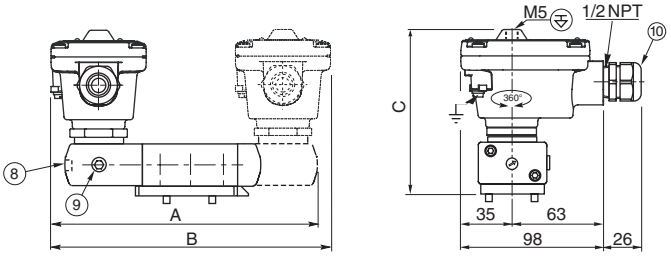
551A309 / 551A310 / 553A309 / 553A310





TYPE 14:
LI: II 2G Ex ia IIC Gb T6, II 2D Ex t IIIC IP67 Db
WSLI: II 1G Ex ia IIC Ga T6, II 2D Ex t IIIC IP67 Db
Aluminium, cataphorese black painting, AISI 316L SS
IEC and EN: 60079-11, 61241-1

551A309 / 551A310 / 553A309 / 553A310



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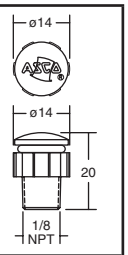
DIMENSIONS (mm), WEIGHT (kg)

type	prefixe option	power level	Serie 551					Serie 553					weight (1)			
													monostable		bistable	
			A	B	C	D	E	A	B	C	D	E	551	553	551	553
01	SC / SCDU / ZN	basic power	132	172	108	22,5	87	182	229	117	36,5	101	1,54	1,69	2,30	4,51
02	NF	basic power	159	225	148	-	-	209	282	157	-	-	2,69	2,84	4,40	6,61
02	WSNF	basic power	159	225	148	-	-	209	282	157	-	-	3,99	4,14	7,00	9,21
04	WP/WPDU/WS/WSDU/EM/WSEM	basic power	148	205	108	-	-	198	262	117	-	-	1,97	2,12	2,90	5,16
05	PV	basic power	132	172	93	22,5	69	182	229	102	36,5	83	1,64	1,79	2,30	4,51
06	EF / EV	basic power	132	172	90,5	22,5	75	182	229	100	36,5	89	1,64	1,79	2,30	4,51
07	SC / ZN	low power	132	172	107	22,5	88	182	229	116	36,5	102	1,54	1,69	2,30	4,51
08	NF	low power	158	225	148	-	-	209	282	157	-	-	2,69	2,84	4,40	6,61
08	WSNF	low power	158	225	148	-	-	209	282	157	-	-	3,99	4,14	7,00	9,21
09	WP / WS / EM / WSEM / WPIS / WSIS	low power	148	205	108	-	-	198	262	117	-	-	1,97	2,12	2,96	5,16
10	PV	low power	132	172	106	22,5	69	182	229	115	36,5	83	1,64	1,79	2,30	4,51
11	EF / EV	low power	132	172	106	22,5	75	182	229	115	36,5	89	1,64	1,79	2,30	4,51
12	ISSC	low power	132	172	130	22,5	90	182	229	139	36,5	104	1,64	1,79	2,50	4,51
13	LPKF	low power	141	192	118	-	-	193	252	131,5	-	-	1,68	5,09	2,58	4,81
13	WSLPKF	low power	141	192	118	-	-	193	252	131,5	-	-	2,29	3,76	3,78	5,88
14	LI	low power	141	192	118	-	-	193	252	131,5	-	-	1,69	5,10	2,59	4,82
14	WSLI	low power	141	192	118	-	-	193	252	131,5	-	-	2,30	3,77	3,79	5,89

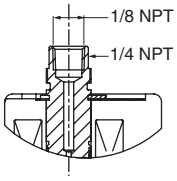
(1) Incl. coil(s) and connector(s)

(2) Ex d certified cable gland (on request)
(3) Three-core cable, length 2 m
(4) Cable gland for unarmoured cable with 7 to 12 mm dia. sheath
(6) Connector rotatable by 90° increments (cable Ø 6 - 10 mm)
(8) Manual operator location, suffix MO
(9) External pilot air supply, 1/8 pipe size
(10) Cable gland for unarmoured cable with 6 to 12 mm dia. sheath
Connectable pilot exhaust port
Non-connectable pilot exhaust port

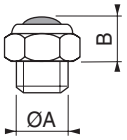
ACCESSORIES



pilot exhaust protector part number 276-405-001



pilot top exhaust low power (ASCO solenoid interface)



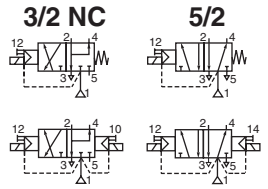


ØA	M5	1/8	1/4	1/2
B	4,5	10	11	14

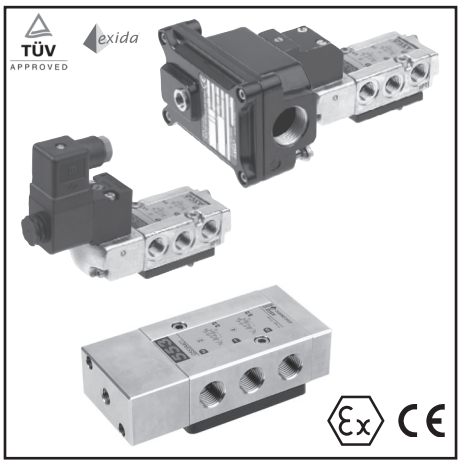
exhaust protector (stainless steel)

SPOOL VALVES

pilot or air operated, spool type
single/dual solenoid (mono/bistable function)
stainless steel body, NAMUR, 1/4 - 1/2



3/2-5/2
Series
551
553



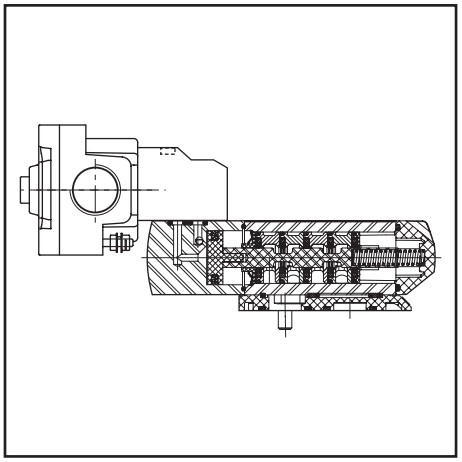
FEATURES

- *The monostable spool valves have TÜV-EXIDA certified IEC 61508 Functional Safety data and can be used up to SIL 4 (551/TÜV)-SIL 3 (553/EXIDA)*
- *Series 551 versions according to ATEX 94/9/EC, for zones 0, 1 and 2 and series 553 air-operated versions for zones 1 and 2*
- *The solenoid operated spool valves have threaded port connections and "NAMUR" interface*
- *The same spool valve can be adapted for 3/2 NC or 5/2 functions for controlling double-acting and single-acting actuators*
- *All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas such as clean rooms, and applications in the pharmaceutical and food processing sectors*
- *The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)*
- *The solenoid valves satisfy all relevant EC Directives*

GENERAL

Differential pressure 2 - 10 bar [1 bar =100 kPa]
Flow (Qv at 6 bar) 1/4 = 700 l/min (ANR)
1/2 = 3000 l/min

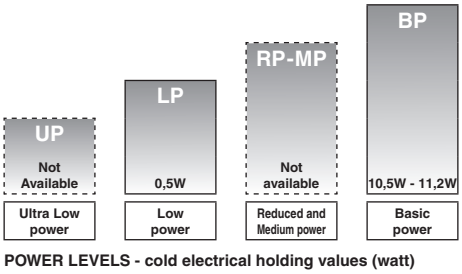
fluids (✶)	temperature range (TS)	seal materials (✶)
air, inert gas, filtered	551 : - 40°C to + 80°C 553 : - 40°C to + 60°C	VMQ (silicone) + PUR (polyurethane)



MATERIALS IN CONTACT WITH FLUID

(✶) Ensure that the compatibility of the fluids in contact with the materials is verified

	Air operated (Series 551-553)	CNOMO solenoid (pilot) interface (Series 551)
Body, end covers	Stainless steel, AISI 316L	Stainless steel, AISI 316L
Interface plates	Glass-filled PA	Glass-filled PA
Spool valve internal parts	Stainless steel, POM	Stainless steel, POM
Seals	NBR	NBR
Pilot internal parts	-	Size 30 (E06.05.80N), refer to catalogue pages: 374 pilot (CTNK) and 195 pilot (ISSC)



POWER LEVELS - cold electrical holding values (watt)

AIR OPERATED SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar) min.	max. (PS) air (✶)		prefix optional	basic catalogue number
(❖)	(mm)	(m^3/h)	(l/min)		~	=		
3/2 NC - 5/2 - Pilot air operated - spring return (monostable)								
1/4	6	0,6	10	2	10	10	-	❖**551A109** (1)
1/2	13	3,15	52,5	2	10	10	-	❖**553A109** (1)
3/2 NC - 5/2 - Pilot air operated and return (bistable)								
1/4	6	0,6	10	2	10	10	-	❖**551A110**
1/2	13	3,15	52,5	2	10	10	-	❖**553A110**

CNOMO SOLENOID (PILOT) INTERFACE SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar) min.	max. (PS) air (✶)		power level	prefix optional solenoids ATEX / IECEx Ex **d**	Ex **ia**	basic catalogue number
(❖)	(mm)	(m^3/h)	(l/min)		~	=	~/=	**CTNK**	**ISSC**	
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)										
1/4	6	0,6	10	2	10	10	BP	●	-	❖**551A209** (1)
1/4	6	0,6	10	2	-	8	LP	-	❍	❖**551B209** (1)
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)										
1/4	6	0,6	10	2	10	10	BP	●	-	❖**551A210**
1/4	6	0,6	10	2	-	8	LP	-	❍	❖**551B210**

❖ Select **8** for NPT ANSI 1.20.3 or select **G** for ISO G (228/1) ● Available feature ❍ Available feature in DC only.
(1) Certified IEC 61508 Functional Safety data, use suffix "SL".

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PREFIX TABLE

prefix							description	power level			
1	2	3	4	5	6	7		UP	LP	RP	BP
C	T	N	K				Flameproof with pilot 374, ATEX (EN 60079 / 61241) *	-	-	-	●
I	S	S	C				Intrinsically safe, pilot 195, ATEX (EN 60079 / 50281-1-1)	-	❍	-	-

SUFFIX TABLE

suffix							description	power level			
1	2	3	4	5	6	7		UP	LP	RP	BP
	G	D					Non-electrical, 1 GD c (551)/ 2 GD c (553), ATEX (EN 13463-5)	-	-	-	-
			M	S			Screw type manual operator	-	-	-	●
			M	O			Push type or screw type manual operator	-	❍	-	-
	S	L					Certified IEC 61508 Functional Safety data (1)	-	❍	-	●

OPTIONS & ACCESSORIES

series	pipe size	stainless steel exhaust protector	
		G	NPT
551	1/8	**34600418** (2)	**34600482** (2)
551	1/4	**34600419** (2)	**34600483** (2)
553	1/2	**34600479** (2)	**34600479** (2)

● Available feature
❍ Available feature in DC only
\- Not available
* ATEX solenoids are also approved according to EN/IEC 61241 (Dust) and EN 13463-1 (non electrical valves)
(1) Not to use with MS or MO suffix
(2) Provided with "SL" suffix

PRODUCT SELECTION GUIDE

STEP 1
Select the fluid temperature range and seal material from the general table on page 7. Select basic catalogue number, including pipe thread identification letter. Refer to the specifications tables on page 7.
Example: G551A209

STEP 2
Select prefix (combination). Select the appropriate operator from the tables on page 7. Select for this operator in the electrical characteristics table on page 9: the power level (LP, BP), the type of electrical enclosure protection and the desired temperature class.
Warning: The ambient temperature range of your application may not exceed the temperature range of your operator.
Air operated version, does not use prefix.
Example : CTNK

STEP 3
Select suffix (combination) if required. Refer to the suffix table, respect the indicated power level.
GD suffix available for air operated version only (do not use manual operator suffix).
Example : MS

STEP 4
Select voltage.
Refer to standard voltages on page 15.
9ample : 230V / 50Hz

STEP 5
Final catalogue / ordering number.
Example :
CTNK G551A209MS 230 V / 50 Hz

ORDERING EXAMPLES:

CTNK	G	551 **A** 209		230V / 50 Hz
CTNK	G	551 **A** 209	**SL**	24V / DC
CTNK	G	551 **A** 209	**MS**	115V / 50 Hz
CTNK	G	551 **A** 209		230V / 50 Hz
CTNK	G	551 **A** 209	**MS**	48V / DC
CTNK	8	551 **A** 209		230V / 50 Hz
ISSC	G	551 **B** 209		24V / DC
ISSC	G	551 **B** 209	**SL**	24V / DC
ISSC	G	551 **B** 209	**MO**	24V / DC
ISSC	G	551 **B** 209		24V / DC
ISSC	G	551 **B** 209	**MO**	24V / DC
	G	551 **A** 109		
	G	551 **A** 109	**GD**	
	G	551 **A** 109	**GDSL**	
	G	551 **A** 110		
	G	553 **A** 109		
	G	551 **A** 110	**GD**	

prefix
pipe thread
basic number
suffix
voltage

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EXPLANATION OF TEMPERATURE RANGES OF SOLENOID VALVES

Valve temperature range	The valve temperature range is determined by the selected seal material, the temperature range for proper operation of the valve and sometimes by the fluid (e.g. steam)
Operator ambient temperature range	The operator ambient temperature range is determined by the selected power level (LP or BP) and the ATEX safety code
Total temperature range	The temperature range of the complete solenoid valve is determined by the limitations of both temperature ranges above

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Electrical safety IEC 335
Standard voltages DC (=) CTNK : 24V - 48V ; ISSC : 24V
CA (~) CTNK : 24V - 48V - 115V - 230V/50Hz - other voltages and 60Hz are available on request

prefix option	power ratings inrush ~ (VA)	holding ~ (VA)	holding ~ (W)	hot/cold = (W)	operator ambient temperature ranges (TS) (C°)	safety code	electrical enclosure protection (EN 60529)	replacement coil ~ -	replacement coil = -	type (1)
Basic power (BP)										
CTNK	55	23	10,5	9/11,2	-20 to +60	II 2G/D Ex d IIB+H_2 T4/Ex tD	moulded IP65	-	-	01
Low power (LP)										
ISSC(3)(4)	-	-	-	0,5	-40 to +50	II 2G Ex ia IIC T6/ II 2G Ex ia IIB T6	moulded IP65	-	-	02

- Not available
(1) Refer to the dimensional drawings on page 12.

prefix option	safety parameters U_i= (DC) (V)	I_i (mA)	P_i (W)	L_i (H)	C_i (µF)
Low power (LP)					
ISSC (II 2G Ex ia IIC T6)	28	115	1,6	0	0
ISSC (II 2G Ex ia IIB T6)	32	195	1,6	0	0

(3) Min. operating current ($I_{min.}$): 0,037 A
(4) Intrinsically safe pilots: Check the electrical characteristics in the corresponding catalogue pages (ISSC: 195 pilot).

ELECTRICAL CONNECTIONS

prefix	connection
CTNK	3/4" NPT threaded cable entry. Enclosures are supplied without cable gland
ISSC	Spade plug connector with cable gland EN175301-803A (ISO 4400) for cables with an outer diameter from 6 to 8 mm

ADDITIONAL OPTIONS

- TPL **20819**: ISSC (195 pilot), temperature class T4
- Other pipe threads are available on request

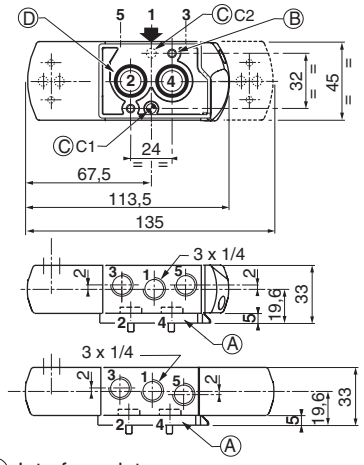
INSTALLATION

- Installation/maintenance instructions are included with each valve
- The spool valves can be mounted in any position without affecting operation
- IEC 61508 Functional Safety (suffix SL), allowable temperature range: -40°C to +60°C. Probability of failure on demand, contact us
- Spool valve supplied with two interface plates with NAMUR mating surfaces**.** Depending on function (3/2 NC or 5/2), position one of the two plates on the spool valve body before installing on actuator
- Dowel pin (if necessary), bolts and gaskets are standard supplied
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- Ex d (prefix "CTNK") enclosure is provided with a 3/4" NPT threaded entry hole [optionally, 1/2" NPT (prefix "T") or M20 x 1,5 (prefix "ET")] and is supplied without cable gland
- Threaded pipe connection identifier is: 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)
- Valves with suffix "SL" are provided with a specific exhaust protector

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DIMENSIONS (mm), WEIGHT (kg)

Type 01-02: CNOMO (Series 551) size 30 (E06.05.80)

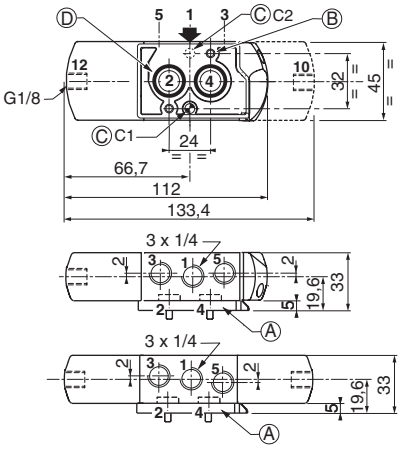


Ⓐ Interface plates

Ⓑ 2 mounting holes 5.3 mm dia.;
Spotfacing: 9 mm dia., depth 5 mm;
2 screws (CHc M5 x 35), engaged length: 7 mm

Type 03: Air operated

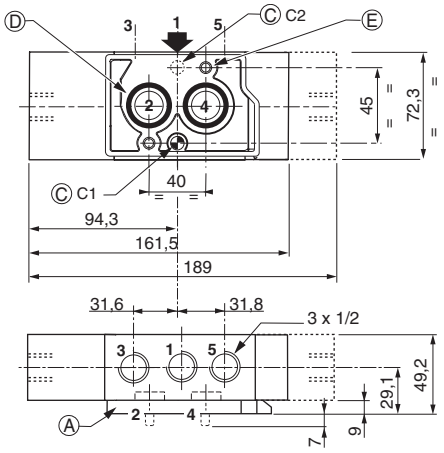
Series 551



Ⓒ One 5 mm dia. hole for dowel pin
- in position C1: 3/2 NC function plate
- in position C2: 5/2 function plate

Ⓓ 2 O-ring seals (supplied)

Series 553

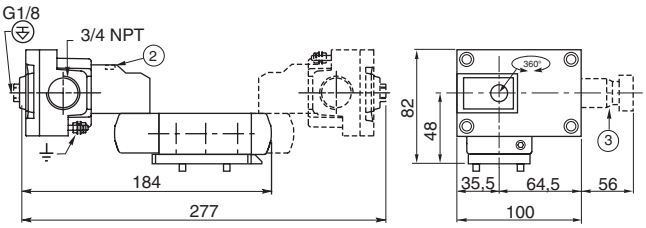


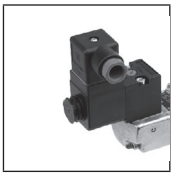
Ⓔ 2 mounting holes 6,5 mm dia.;
Spotfacing: 11 mm dia., depth 6 mm;
2 screws (CHc M6 x 50), engaged length: 7 mm



TYPE 01:
CTNK
Light alloy, cataphorese black painting
EN 60079-1 and EN 61241-1

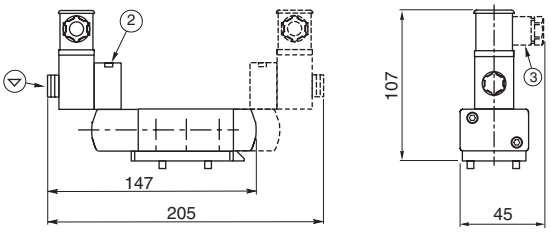
551A209 / 551A210
551A209MS / 551A210MS

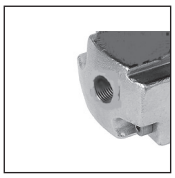




TYPE 02:
ISSC
PA, thermoplastic resin
EN 60079-11/26 and EN 50281-1-1

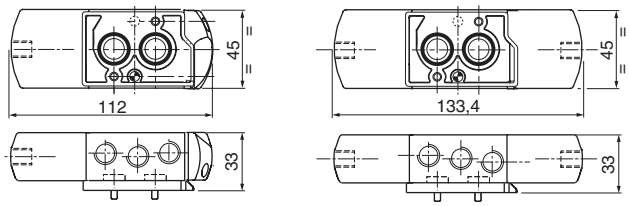
551B209 / 551B210
551B209MO / 551B210MO



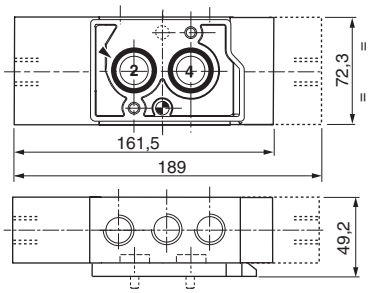


TYPE 03:
No prefix, IP65
[suffixes 551: GD (II 1 GD c) ; SL (SIL) ; GDSL (SIL, II 1 GD c)
suffixe 553: GD (II 2 GD c) ; SL (SIL) ; GDSL (SIL, II 2 GD c)]
Air operated version

551A109 / 551A110



553A109 / 553A110



① Connector rotatable by 90° increments (cable 6 - 10 mm)
② Manual operator location
③ Ex d certified cable gland (on request)
Ⓣ Connectable pilot exhaust port
Ⓥ Non-connectable pilot exhaust port

type	prefix option	power level	weight (1) monostable 551	weight (1) monostable 553	weight (1) bistable 551	weight (1) bistable 553
01	CTNK	basic power	1,93	-	2,88	-
02	ISSC	low power	1,33	-	1,58	-
03	-	-	1,13	2,64	1,27	2,51

(1) Incl. connector(s), except CFVT.

ACCESSORIES



ØA	-	1/8	1/4	1/2
B	-	10	11	14
exhaust protector (stainless steel)				

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2010/R01