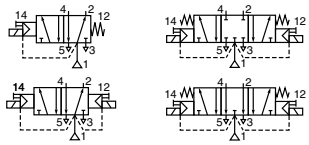
SOLENOID VALVES

pilot operated, spool type
single/dual solenoid (mono/bistable function, W1/W3)
stainless steel body, 1/4 - 1/2



5/2
5/3
Series
551-553

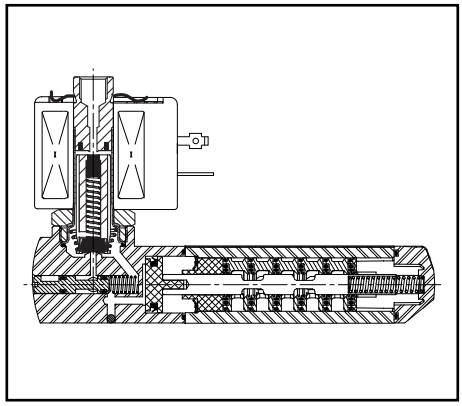
FEATURES

- *Series 551 monostable spool valves 1/4 have TÜV certified IEC 61508 Functional Safety data and can be used up to SIL 4/AK 7*
- *The 5/2 and 5/3 solenoid operated spool valves have threaded port connections*
- *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 = 860 l/min (5/2) ; 760 l/min (5/3) (ANR)
1/2 = 3000 l/min

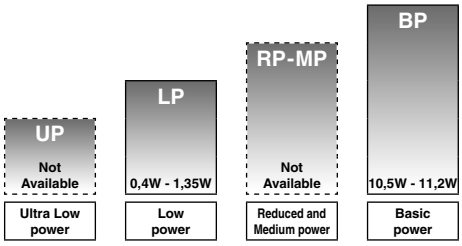
fluids (✶)	temperature range (TS)	seal materials (✶)
air, inert gas, filtered	551 : - 40°C to + 80°C	VMQ (silicone) + PUR (polyurethane)
	553 : - 40°C to + 60°C	



MATERIALS IN CONTACT WITH FLUID

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

Body	Stainless steel, AISI 316L
End cover (spring)	Stainless steel
Spool valve internal parts	Stainless steel, POM
Pilot end-cover	Stainless steel
Core tube	Stainless steel
Core and plugnut	Stainless steel
Core spring	Stainless steel
Sealings & 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/CENELEC (gas/dust)							IP65	
								7 & 9	Ex **d**			Ex **emb**	Ex **mb**	EEx **i**	EEx **n**		
(❖)	(mm)	(m^3/h)	(l/min)		~	=	~/=	**EF**	**LPKF**	**NF**	**NK**	**EM**	**PV**	**IS**	**ZN**	**SC**	
5/2 - Solenoid air pilot operated - spring return (monostable)																	
1/4	6	0,75	12,5	0 / 2	10	10	BP	-	-	●	●	●	●	-	●	●	❖551A421 (1)
1/4	6	0,75	12,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551G421 (1)
1/4	6	0,75	12,5	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	●	❖551A321 (1)
1/4	6	0,75	12,5	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	❖551G321 (1)
1/2	13	3,15	52,5	0 / 2	10	10	BP	-	-	●	●	●	●	-	●	●	❖553A421
1/2	13	3,15	52,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖553G421
1/2	13	3,15	52,5	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	●	❖553A321
1/2	13	3,15	52,5	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	❖553G321
5/2 - Solenoid air pilot operated and return (bistable)																	
1/4	6	0,75	12,5	0 / 2	10	10	BP	-	-	●	●	●	●	-	●	●	❖551A422
1/4	6	0,75	12,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551G422
1/4	6	0,75	12,5	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	●	❖551A322
1/4	6	0,75	12,5	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	❖551G322
1/2	13	3,15	52,5	0 / 2	10	10	BP	-	-	●	●	●	●	-	●	●	❖553A422
1/2	13	3,15	52,5	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖553G422
1/2	13	3,15	52,5	0 / 2	10	10	LP	-	❍	●	-	●	❍	❍	❍	●	❖553A322
1/2	13	3,15	52,5	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	-	❖553G322

❖ 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**" (Not to use with LPKF suffix).
(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**

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/CENELEC (gas/dust)						IP65	
								7 & 9	Ex **d**		Ex **emb**	Ex **mb**	EEx **i**	EEx **n**		
(❖)	(mm)	(m^3/h)	(l/min)		~	=	~/=	**EF**	**NF**	**NK**	**EM**	**PV**	**IS**	**ZN**	**SC**	
5/3 - W1 - pressure held, solenoid air pilot operated and return																
1/4	6	0,66	11	0 / 2	10	10	BP	-	●	●	●	●	-	●	●	❖**551A438** (1)
1/4	6	0,66	11	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	❖**551G438** (1)
1/4	6	0,66	11	0 / 2	10	10	LP	-	●	-	●	❍	❍	❍	●	❖**551A338** (1)
1/4	6	0,66	11	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	❖**551G338** (1)
5/3 - W3 - pressure release, solenoid air pilot operated and return																
1/4	6	0,66	11	0 / 2	10	10	BP	-	●	●	●	●	-	●	●	❖**551A439**
1/4	6	0,66	11	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	❖**551G439**
1/4	6	0,66	11	0 / 2	10	10	LP	-	●	-	●	❍	❍	❍	●	❖**551A339**
1/4	6	0,66	11	0 / 2	10	10	LP	❍	-	-	-	-	-	-	-	❖**551G339**

❖ 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

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 with SC coil ATEX (EN 50020) *	❍	-	-	-
L	P	K	F				Flameproof - Alum. ATEX (IEC/ISA/EN: 60079 / 61241) *	❍	-	-	-
N	F						Flameproof - Alum. ATEX + IECEx (EN/IEC 60079 / 61241)*	●	-	-	●
N	K						Flameproof - Alum. ATEX (EN 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 *	-	-	-	●
W	P			I	S		I.S. with Metal IP67 enclosure ATEX (EN 50020) *	❍	-	-	-
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			I	S		I.S. with Metal IP67- 316 SS enclosure ATEX (EN 50020) *	❍	-	-	-
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 (Series 551) (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: G551A421

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 G551A421MO 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**	**34600479**	-
551	M5	-	-	**34600484**

● 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 and LPKF/WSLPKF prefixes

ORDERING EXAMPLES:

SC	G	551 **A** 421		230V / 50 Hz
SC	G	553 **A** 421		230V / 50 Hz
SC	G	551 **A** 421	**SL**	230V / 50 Hz
SC	G	551 **A** 422	**MO**	230V / 50 Hz
SCHT	8	551 **A** 422	**MO**	230V / 50 Hz
ISSC	G	551 **A** 422	**MO**	24V / DC
WSLPKF	G	551 **A** 321	**MO**	24V / DC
WPIS	G	551 **A** 321		24V / DC
EM	8	551 **A** 421	**MO**	230V / 50 Hz
EF	G	551 **G** 421	**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 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 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 (=) 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°)	safety code	electrical enclosure protection (EN 60529)	replacement coil ~ 230 V / 50 Hz	replacement coil = 24 V DC	type (2)
Basic power (BP)										
SC	55	23	10,5	9/11,2	-40 to +75	EN 60730	moulded IP65	400-425-117	400-425-142	01
SCDU	55	23	10,5	9/11,2	-40 to +75	II 3D IP65 T 200°C(~)/135°C(=)	moulded IP65	- (4)	- (4)	01
WP/WS	55	23	10,5	9/11,2	-40 to +75	EN 60730	steel/SS IP67	400-405-117	400-405-142	04
WPDU/WSDU	55	23	10,5	9/11,2	-40 to +75	II 3D IP67 T 200°C	steel/SS IP67	- (4)	- (4)	04
(WS)NF	55	23	10,5	-	[-60](1) -40 to +25/40/60	II 2G/D Ex d IIC T6/T5/T4/Ex tD	alu./SS IP67	400-405-117	-	02
(WS)NF	-	-	-	9/11,2	[-60](1) -40 to +40/60/75	II 2G/D Ex d IIC T6/T5/T4/Ex tD	alu./SS IP67	-	400-405-142	02
NK	55	23	10,5	9/11,2	-40 to +50/60	II 2G/D Ex d IIB+H_2 T4/Ex tD	aluminium IP65	400-405-117	400-405-142	03
EM/WSEM	55	23	10,5	9/11,2	-40 to +40	II 2G/D Ex emb II T3/Ex tD	steel/SS IP67	400-909-117	400-913-142	04
PV	55	23	10,5	9/11,2	-40 to +65	II 2G/D Ex mb II T3(~)/T4(=)/Ex mD	moulded IP65	-(4)	-(4)	05
EF/EV	55	23	10,5	9/11,2	-40 to +54/40	NEMA type 7 and 9	mould.NEMA 4X	238-610-058	238-710-006	06
ZN	55	23	10,5	9/11,2	-20 to +50	II 3G/D EEx nA II T3	moulded IP65	- (4)	-(4)	01
WP(WS)ZN	55	23	10,5	9/11,2	-40 to +50/60	II 3G/D EEx nA II T3(~)/T4(=)	steel/SS IP67	- (4)	- (4)	04
Low power (LP)										
SC	1,5	1,5	1,5	1,7/1,7	-40 to +60	EN 60730	moulded IP65	400-925-097	400-925-042	07
WP/WS	1,5	1,5	1,5	1,7/1,7	-40 to +60	EN 60730	steel/SS IP67	400-926-097	400-926-042	09
(WS)LPKF (6)	-	-	-	0,5 /0,5	-40 to +60	II2G Ex d IIB+H_2 T6, II2D Ex tD A21	SS/alum. IP67	-	- (4)	13
(WS)NF	-	-	1,9	- /1,9	[-60](1) -40 to +75/80	II 2G/D Ex d IIC T6-T5/Ex tD	alu./SS IP67	- (4)	- (4)	08
EM/WSEM	1,5	1,5	1,5	1,7/1,7	-40 à +40/55	II 2G/D Ex emb II T6-T5/Ex tD	steel/SS IP67	- (4)	- (4)	09
PV	-	-	-	1,7/1,7	-40 to +65	II 2 G/D Ex mb II T6 / Ex mD	moulded IP65	-	- (4)	10
EF/EV	-	-	-	1,7/1,7	-40 to +60	NEMA type 7 and 9	mould.NEMA 4X	-	- (4)	11
LP/WSLP(6)	-	-	-	0,5 /0,5	-40 to +75	Ex d IIB +H_2 Gb T6, Ex t IIC Db	alum./SS IP67	-	- (4)	14
ISSC (3)	-	-	-	0,4/04	-40 to +60	II 1G/2D EEx ia IIC T6(2G/D=553)	moulded IP65	-	268-976-001	12
WPIS (3)	-	-	-	0,4/04	-40 to +60	II 1G/2D EEx ia IIC T6(2G/D=553)	acier IP67	-	268-900-001	09
WSIS (2)	-	-	-	0,4/0,4	-40 to +60	II 1G/2D EEx ia IIC T6(2G/D=553)	St steel IP67	-	268900-001	09
ZN	-	-	-	1,7/1,7	-20 to +50	II 3G/D EEx nA II T3	moulded IP65	-	- (4)	07
WP(WS)ZN	1,5	1,5	1,5	1,7/1,7	-40 to +60	II 3G/D EEx nA II T6	steel/SS IP67	- (4)	- (4)	09

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

(1) The certified minimum temperature of this operator
(2) Refer to the dimensional drawings on pages 4 to 6.
(3) Intrinsically safe pilots: Check the electrical characteristics in the corresponding catalogue pages (ISSC/WPIS operators).
(4) Multiple coil kits available under ATEX, contact us
(5) Low Power, 230 V AC does not exist. Maximum voltage in AC is 115 V.
(6) LPKF/WSLPKF: Low Power, 24 V DC only.
- Not available

ELECTRICAL CONNECTIONS

prefix	connection
SC, SCDU, ZN	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
NK	3/4" NPT threaded cable entry. Enclosures are supplied without cable gland
PV	Moulded-in cable, standard length 2 m
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 (prefix "PV") execution can be supplied in 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

INSTALLATION

- Installation/maintenance instructions are included with each valve
- The solenoid 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
- 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 "(WS)NF" enclosure is provided with a 1/2" NPT threaded entry hole [optionally, M20 x 1,5 (prefix "ET")] and is supplied without cable gland
- Prefix "NK" 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

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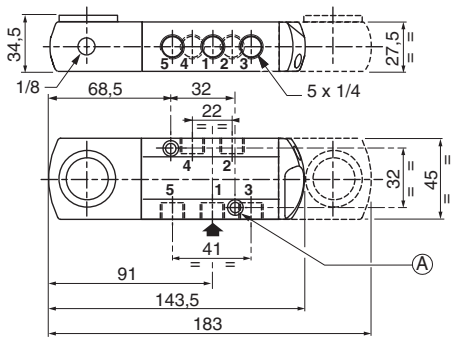
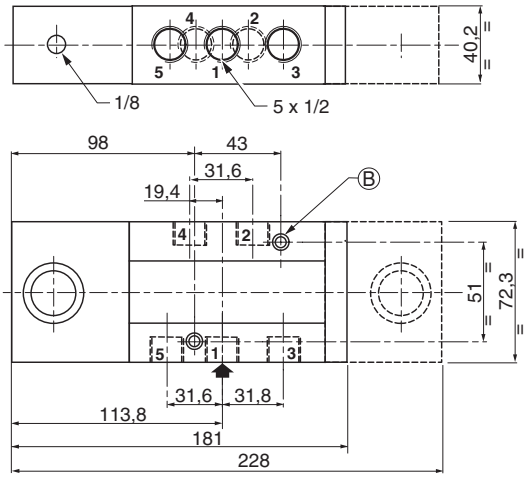
DIMENSIONS (mm), **WEIGHT** (kg)

Series 551



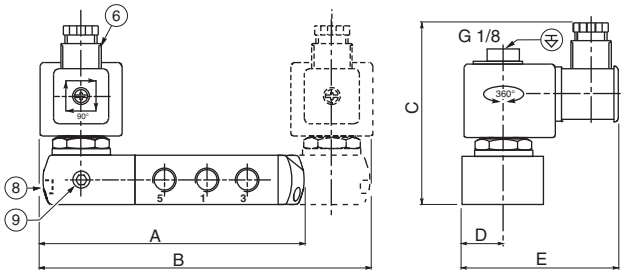
Series 553



2 mounting holes
(A) 5.3 mm dia.;Spotfacing: 9 mm dia., depth 5 mm
(B) 6.5 mm dia.;Spotfacing: 11 mm dia., depth 6 mm

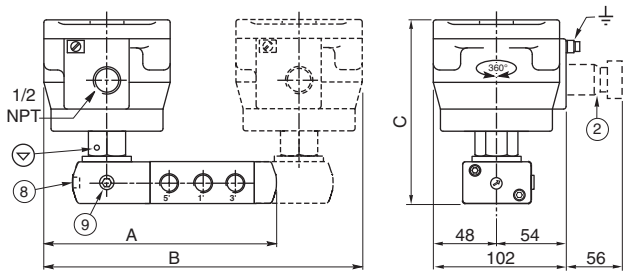
TYPE 01: Prefixes SC: IP65, ZN: II 3 G/D, IP65, EEx nA II, SCDU: II 3 D, IP65, T100°C to 200°C
Basic power
Epoxy moulded
IEC 335 / ISO 4400

551A421 / 551A422 / 551A438 / 551A439 / 553A421 / 553A422



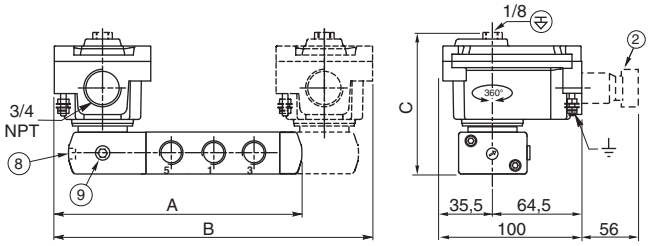
TYPE 02: Prefixes NF/WSNF: II 2 G/D, IP67, Ex d IIC
Basic power
Aluminium, epoxy coated (NF)
AISI 316 SS (WSNF)
EN/IEC 60079-1 and EN/IEC 61241-1

551A421 / 551A422 / 551A438 / 551A439 / 553A421 / 553A422



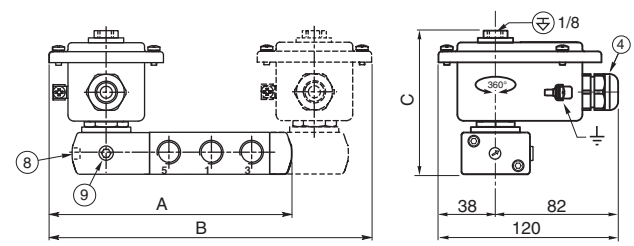
TYPE 03: Prefix NK: II 2 GD, IP65, Ex d IIB + H_2
Basic power
Aluminium, epoxy coated
EN 60079-1 and EN 61241-1

551A421 / 551A422 / 551A438 / 551A439 / 553A421 / 553A422



TYPE 04: Prefixes WP/WS: IP67, EM/WSEM: II 2 G/D, IP67, Ex emb II, WPDU/WSDU: II 3 D, IP67, T85°C to 200°C, WPZN/WSZN: II 3 G/D, IP67, EEx nA II
Basic power
Steel, epoxy coated (EM, WP, WPDU, WPZN)
AISI 316 SS (WS, WSDU, WSEM, and WSZN)
IEC 335 / EN 60079-7/18 and EN 61241-1

551A421 / 551A422 / 551A438 / 551A439 / 553A421 / 553A422



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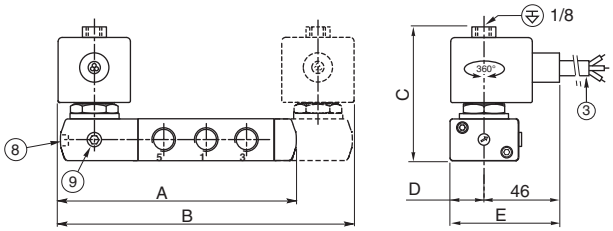
DIMENSIONS (mm)**, WEIGHT** (kg)

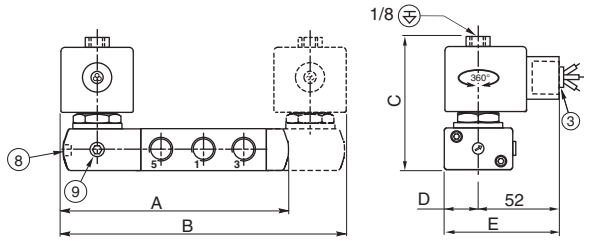
TYPE 05: Prefix PV: II 2 G/D, IP67, Ex mb II, Ex mD
Basic power
Epoxy encapsulated
EN/IEC 60079-18 and EN/IEC 61241-18

551A421 / 551A422 / 551A438 / 551A439 / 553A421 / 553A422



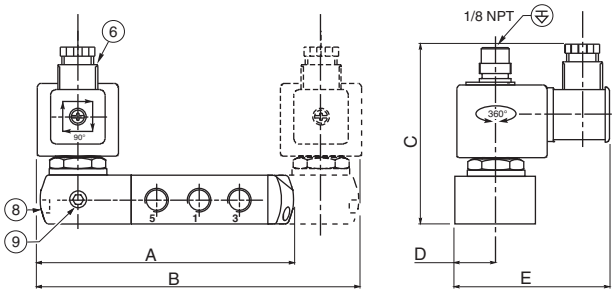
TYPE 06: Prefixes EF/EV: ICS-6 ANSI / NEMA type 7 and 9
Basic power
Epoxy encapsulated
ICS-6 ANSI / NEMA
Type 7 and 9
NOTE: applicable to solenoid only

551G421 / 551G422 / 551G438 / 551G439 / 553G421 / 553G422



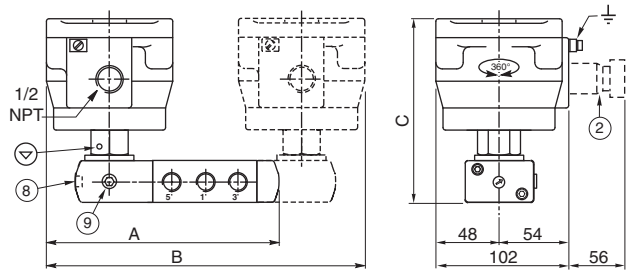
TYPE 07: Prefixes SC: IP65, ZN: II 3 G/D, IP65, EEx nA II
Low power
Epoxy moulded
IEC 335 / ISO 4400

551A321 / 551A322 / 551A338 / 551A339 / 553A321 / 553A322



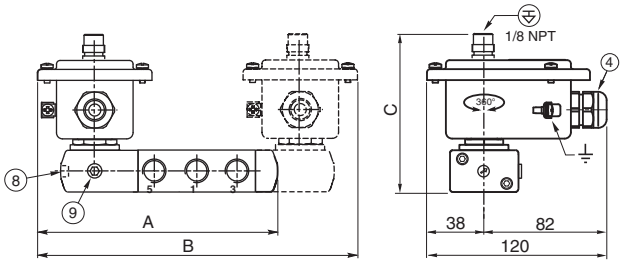
TYPE 08: Prefixes NF/WSNF: II 2 G/D, IP67, Ex d IIC
Low power
Aluminium, epoxy coated (NF)
AISI 316 SS (WSNF)
EN/IEC 60079-1 and EN/IEC 61241-1

551A321 / 551A322 / 551A338 / 551A339 / 553A321 / 553A322



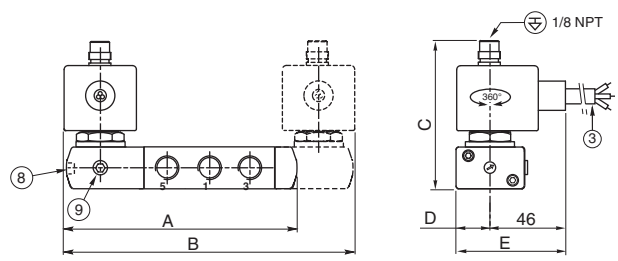
TYPE 09: Prefixes WP/WS: IP67, EM/WSEM: II 2 G/D, IP67, Ex emb II, WPDU/WSDU: II 3 D, IP67, T85°C to 200°C, WPZN/WSZN: II 3 G/D, IP67, EEx nA II, /WSIS: 551 = II 1G/2D EEx ia IIC - 553 = II 2 G/D EEx ia IIC
Low power
Steel, epoxy coated (EM, WP, WPDU, WPZN, WPIS)
AISI 316 SS (WS, WSDU, WSEM, WSIS and WSZN)
IEC 335 / EN 60079-7/18 and EN 61241-1

551A321 / 551A322 / 551A338 / 551A339 / 553A321 / 553A322



TYPE 10: Prefix PV: II 2 G/D, IP67, Ex mb II, Ex mD
Low power
Epoxy encapsulated
EN/IEC 60079-18 and EN/IEC 61241-18

551A321 / 551A322 / 551A338 / 551A339 / 553A321 / 553A322



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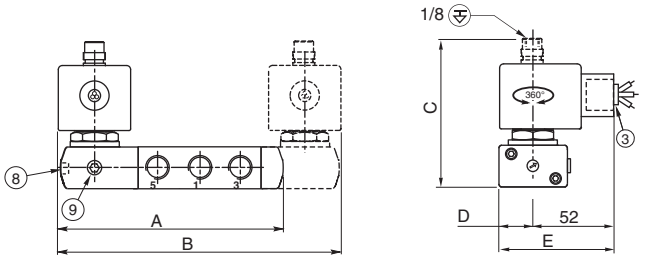
DIMENSIONS (mm), **WEIGHT** (kg)

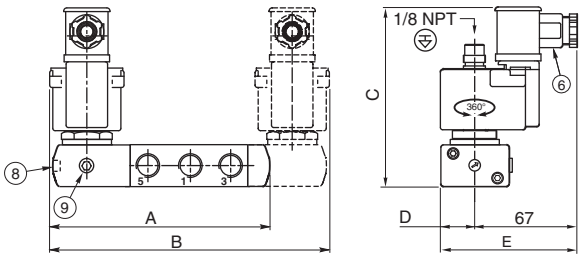
TYPE 11: Prefixes EF/EV: ICS-6 ANSI / NEMA type 7 and 9
Low power
Epoxy encapsulated
ICS-6 ANSI / NEMA
Type 7 and 9
NOTE: applicable to solenoid only

551G321 / 551G322 / 551G338 / 551G339 / 553G321 / 553G322



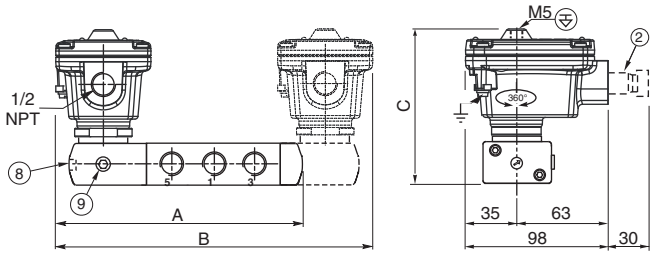
TYPE 12: 551: II 1G/2D EEx ia IIC, IP65 - 553: II 2 G/D EEx ia IIC, IP65
Low power
Polypropylene moulded
IEC 335 / ISO 4400
EN 50020 and EN 50281-1-1

551A321 / 551A322 / 551A338 / 551A339 / 553A321 / 553A322



TYPE 13: Prefix LPKF/WSLPKF: II2G Ex d IIB+H_2 T6, II2D Ex tD A21 IP67 T85°C
Low power
Aluminium or st. steel, epoxy coated
IEC, ISA and EN: 60079-1, 61241-1

551A321 / 551A322 / 551A338 / 551A339 / 553A321 / 553A322



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DIMENSIONS (mm), WEIGHT (kg)

type	prefix option	power level	551					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	144	184	103	22,5	87	182	229	109	36,5	101	1,27	3,06	2,03	4,38
02	NF	basic power	170	236	142	-	-	208	281	148	-	-	2,42	4,21	4,13	6,48
02	WSNF	basic power	170	236	142	-	-	208	281	148	-	-	3,72	5,51	6,73	9,08
03	NK	basic power	155	208	102	-	-	193	253	108	-	-	1,81	3,6	2,63	4,98
04	WP/WPDU/WS/WSDU/EM/WSEM	basic power	160	216	103	-	-	198	261	109	-	-	1,70	3,49	2,69	5,04
05	PV	basic power	144	184	88	22,5	69	182	229	94	36,5	82,5	1,37	3,16	2,03	4,38
06	EF / EV	basic power	145	185	86	22,5	75	183	230	92	36,5	88,5	1,37	3,16	2,03	4,38
07	SC / ZN	low power	145	185	102	22,5	88	183	230	108	36,5	102	1,27	3,06	2,03	4,38
08	NF	low power	170	236	142	-	-	208	281	148	-	-	2,42	4,21	4,13	6,48
08	WSNF	low power	170	236	142	-	-	208	281	148	-	-	3,72	5,51	6,73	9,08
09	WP / WS / EM / WSEM / WPIS / WSIS	low power	160	216	102	-	-	198	261	108	-	-	1,70	3,49	2,69	5,04
10	PV	low power	144	184	101	22,5	69	182	229	107	36,5	82,5	1,37	3,16	2,03	4,38
11	EF / EV	low power	145	185	101	22,5	75	182	230	107	36,5	88,5	1,37	3,16	2,03	4,38
12	ISSC	low power	146	187	125	22,5	90	184	232	131	36,5	103,5	1,37	3,16	2,23	4,38
13	LPKF	low power	153	204	113	-	-	193	252	118,7	-	-	1,39	4,48	2,31	4,68
13	WSLPKF	low power	153	204	113	-	-	193	252	118,7	-	-	2,00	3,15	3,51	5,75

(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)

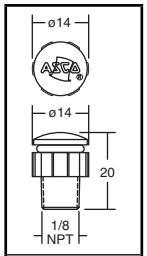
(8) Manual operator location, suffix MO

(9) External pilot air supply, 1/8 pipe size

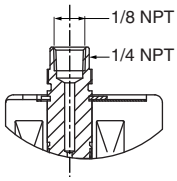
Connectable pilot exhaust port

Non-connectable pilot exhaust port

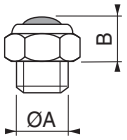
ACCESSORIES



pilot exhaust protector part number 276405-001



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)

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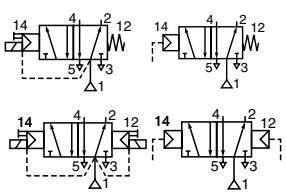
SPOOL VALVES

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



5/2
Series
551
553

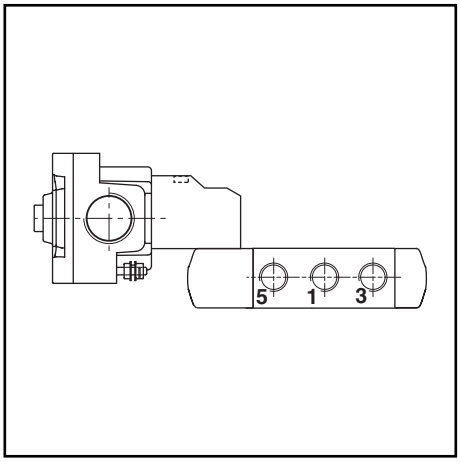
FEATURES

- *Series 551 monostable spool valves 1/4 have TÜV certified IEC 61508 Functional Safety data and can be used up to SIL 4/AK 7*
- *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 3/2 NC solenoid operated spool valves have threaded port connections*
- *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 = 860 l/min (ANR)
1/2 = 3000 l/min

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



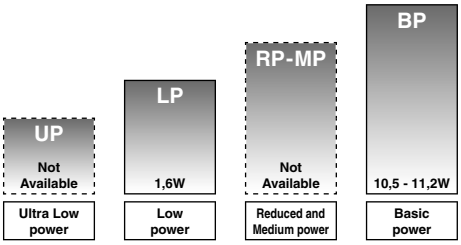
MATERIALS IN CONTACT WITH FLUID

(✶) 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
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)

AIR OPERATED SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar)			prefix optional	basic catalogue number
				min.	max. (PS)			
					air (✶)			
(❖)	(mm)	(m^3/h)	(l/min)		~	=		
Pilot air operated - spring return (monostable)								
1/4	6	0,75	12,5	2	10	10	-	❖**551A121** (1)
1/2	13	3,15	52,5	2	10	10	-	❖**553A121**
Pilot air operated and return (bistable)								
1/4	6	0,75	12,5	2	10	10	-	❖**551A122**
1/2	13	3,15	52,5	2	10	10	-	❖**553A122**



POWER LEVELS - cold electrical holding values (watt)

CNOMO SOLENOID (PILOT) INTERFACE SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar)			power level	prefix optional solenoids		basic catalogue number
				min.	max. (PS)			ATEX/CENELEC (gas/dust)		
					air (✶)			Ex **d**	EEx i	
(❖)	(mm)	(m^3/h)	(l/min)		~	=	~/=	**CTNK**	**ISSC**	
Solenoid air pilot operated - spring return (monostable)										
1/4	6	0,75	12,5	2	10	10	BP	●	-	❖**551A221** (1)
1/4	6	0,75	12,5	2	-	8	LP	-	❍	❖**551A221** (1)
Solenoid air pilot operated and return (bistable)										
1/4	6	0,75	12,5	2	10	10	BP	●	-	❖**551A222**
1/4	6	0,75	12,5	2	-	8	LP	-	❍	❖**551A222**

❖ 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 50020) *	-	❍	-	-

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 (Series 551) (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**	**34600479**

● 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: G551A221

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 G551A221MS 230 V / 50 Hz

ORDERING EXAMPLES:

CTNK	G	551 **A** 221		230V / 50 Hz
CTNK	G	551 **A** 221	**SL**	24V / DC
CTNK	G	551 **A** 221	**MS**	115V / 50 Hz
CTNK	G	551 **A** 222		230V / 50 Hz
CTNK	G	551 **A** 222	**MS**	48V / DC
CTNK	8	551 **A** 221		230V / 50 Hz
ISSC	G	551 **A** 221		24V / DC
ISSC	G	551 **A** 221	**SL**	24V / DC
ISSC	G	551 **A** 221	**MO**	24V / DC
ISSC	G	551 **A** 222		24V / DC
ISSC	G	551 **A** 222	**MO**	24V / DC
	G	551 **A** 121		
	G	551 **A** 121	**GD**	
	G	551 **A** 121	**GDSL**	
	G	551 **A** 122		
	G	553 **A** 121		
	G	551 **A** 122	**GD**	

prefix
pipe thread
basic number
voltage
suffix

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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				operator ambient temperature ranges (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil		type [1]
	inrush ~	holding ~		hot/cold =				~	=	
	(VA)	(VA)	(W)	(W)	(C°)			-	-	
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]	-	-	-	1,6	-40 to +50	II 2G/D EEx ia IIC T6	moulded IP65	-	-	02

- Not available
[1] Refer to the dimensional drawings on page 10..

prefix option	safety parameters				
	U_i= (DC)	I_i	P_i	L_i	C_i
	(V)	(mA)	(W)	(µF)	(mF)
Low power (LP)					
ISSC	28	115	1,6	0	0

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

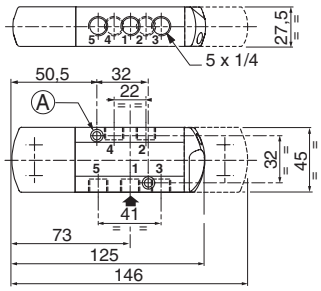
- Mounting on aluminium supply rail, 1/4 or 1/2
- Other pipe threads are available on request

INSTALLATION

- Installation/maintenance instructions are included with each valve
- The 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
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the valve 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)
- 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
- Valves with suffix "SL" are provided with specific exhaust protectors

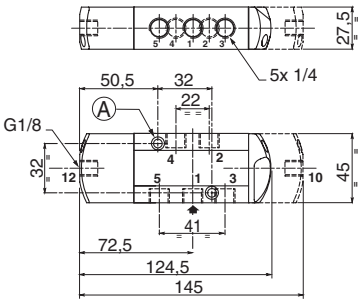
DIMENSIONS (mm), WEIGHT (kg)

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

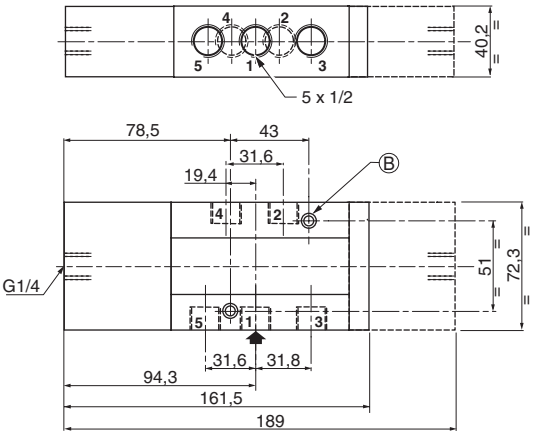


Type 03: Air operated

Series 551



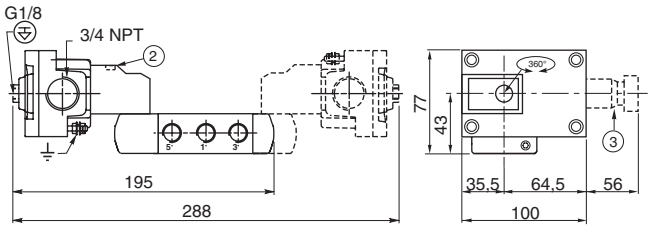
Series 553



2 mounting holes
(A) 5.3 mm dia.;Spotfacing: 9 mm dia., depth 5 mm
(B) 6.5 mm dia.;Spotfacing: 11 mm dia., depth 6 mm

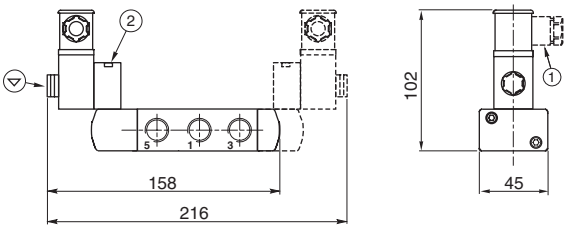
TYPE 01: Prefix CTNK: II 2 GD, IP65, Ex d IIB + H_2
Basic power
374 pilot, light alloy
Aluminium, epoxy coated
EN 60079-1 and EN 61241-1

551A221 / 551A222
551A221MS / 551A222MS



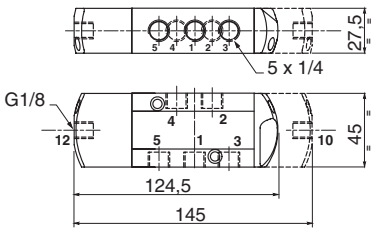
TYPE 02: Prefix ISSC:
Series 551: II 1 GD EEx ia IIC, IP65
Series 553: II 2 GD EEx ia IIC, IP65
Low power
195 pilot
Polyamide
IEC 335 / ISO 4400
EN 50020 and EN 50281-1-1

551A221 / 551A222
551A221MO / 551A222MO

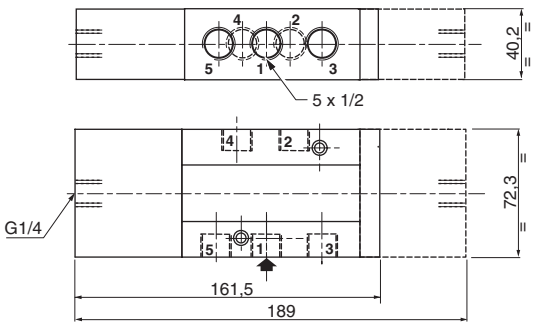


TYPE 03: No prefix, IP65
[suffixes 551: GD (II 1 GD c) ; SL (SIL) ; GDSL (SIL, II 1 GD c)
suffixe 553: GD (II 2 GD c)]
Air operated version

551A121 / 551A122



553A121 / 553A122

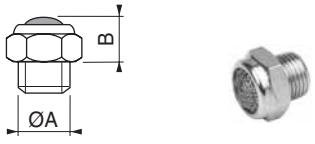


(1) Connector rotatable by 90° increments (cable 6 - 10 mm)
(2) Manual operator location
(3) Ex d certified cable gland (on request)
Connectable pilot exhaust port
Non-connectable pilot exhaust port

type	prefix option	power level	weight (1)			
			monostable		bistable	
			551	553	551	553
01	CTNK	basic power	1,66	-	2,60	-
02	ISSC	low power	1,05	-	1,39	-
03	-	-	0,86	2,52	0,99	3,07

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

ACCESSORIES



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