



SOLENOID VALVES

pilot operated, spool type
single/dual solenoid (mono/bistable function)
brass body, NAMUR, 1/4

3/2 NC

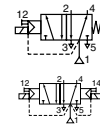
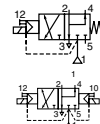
5/2

3/2

5/2

Series

551



FEATURES

- The monostable spool valves have TÜV certified IEC 61508 Functional Safety data and can be used up to SIL 4
- 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

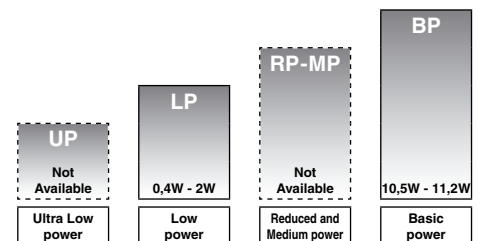
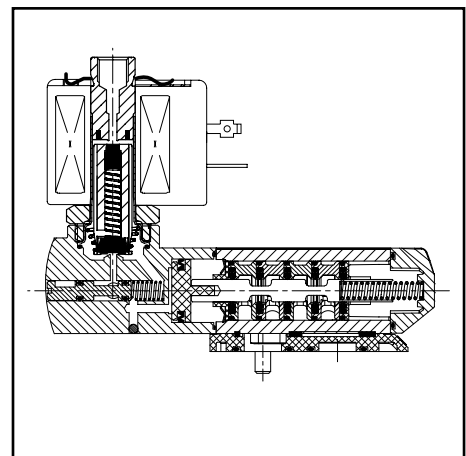
Differential pressure 2 - 10 bar [1 bar = 100 kPa]
Flow (Qv at 6 bar) 700 l/min (ANR)

fluids (*)	temperature range (TS)	seal materials (*)
air, inert gas, filtered	- 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	Brass
Spool valve internal parts	Brass, stainless steel, POM
Interface plates	Glass-filled PA
Core tube	Stainless steel
Core and plugnut	Stainless steel
Core spring	Stainless steel
Seals & discs	NBR
Top disc	PA
Disc holder	POM
Cartridge (Low power)	Welded, packless AISI 430
Seat	Brass
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
								max. (PS)		ATEX / IECEx		IP65						
				min. ⁽²⁾	air (*)	NEMA 7 & 9		Ex d	Ex e mb	Ex mb	Ex ia	EEEx nA	IP65					
(*)	(mm)	(m³/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	0,6	10	0 / 2	10	10	BP	-	-	●	-	●	●	-	●	●	❖551A403 ⁽¹⁾	
1/4	6	0,6	10	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551G403 ⁽¹⁾	
1/4	6	0,6	10	0 / 2	10	10	LP	-	○	●	-	●	○	○	○	●	❖551A303 ⁽¹⁾	
1/4	6	0,6	10	0 / 2	10	10	LP	○	-	-	-	-	-	-	-	-	❖551G303 ⁽¹⁾	
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)																		
1/4	6	0,6	10	0 / 2	10	10	BP	-	-	●	-	●	●	-	●	●	❖551A404	
1/4	6	0,6	10	0 / 2	10	10	BP	●	-	-	-	-	-	-	-	-	❖551G404	
1/4	6	0,6	10	0 / 2	10	10	LP	-	○	●	-	●	○	○	○	●	❖551A304	
1/4	6	0,6	10	0 / 2	10	10	LP	○	-	-	-	-	-	-	-	-	❖551G304	

❖ 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 (EN 50281-1-1)*	-	-	-	●
E	F						Explosionproof - NEMA 7, 9 - Zinc plated steel conduit	○	-	-	●
E	V						Explosionproof - NEMA 7, 9 - 316 SS conduit	○	-	-	●
E	M						Waterproof IP67 - Metal enclosure (EN/IEC 60079-7+18, 61241-1)*	●	-	-	●
		E	T				Threaded conduit/hole (M20 x 1,5)	●	-	-	●
I	S			S	C		Intrinsically safe with SC coil (EN/IEC 60079-11+26, 61241-11)*	○	-	-	-
L	P	K	F				Flameproof - Aluminium (EN/IEC 60079-1, 61241-1)*	●	-	-	●
N	F						Flameproof - Aluminium (EN/IEC 60079-1, 61241-1)*	●	-	-	●
P	V						Encapsulated epoxy moulded (EN/IEC 60079-18, 61241-18)*	○	-	-	●
S	C						Solenoid with spade plug connector (EN/IEC 60730)	●	-	-	●
W	P						Waterproof IP67 - Metal enclosure	●	-	-	●
W	P			D	U		Waterproof IP67 - Metal enclosure, Dustproof (EN 50281-1-1)*	-	-	-	●
L	I						I.S. with Aluminium IP67 enclosure (EN/IEC 60079-11 / 61241-1)*	○	-	-	-
W	P			I	S		I.S. with Metal IP67 enclosure (EN/IEC 60079-11+26, 61241-11)*	○	-	-	-
W	S						Waterproof IP67 - 316 SS enclosure	●	-	-	●
W	S			D	U		Waterproof IP67 - 316 SS enclosure, Dustproof (EN 50281-1-1)*	-	-	-	●
W	S	L	P	K	F		Flameproof - 316 SS (EN/IEC 60079-1, 61241-1)*	●	-	-	●
W	S	E	M				Waterproof IP67 - 316 SS enclosure (EN/IEC 60079-7+18, 61241-1)*	●	-	-	●
W	S			L	I		I.S. with 316L SS IP67 enclosure (EN/IEC 60079-11, 61241-1)*	○	-	-	-
W	S			I	S		I.S. with 316 SS IP67 enclosure (EN/IEC 60079-11+26, 61241-11)*	○	-	-	-
W	S	N	F				Flameproof - 316 SS (EN/IEC 60079-1, 61241-1)*	●	-	-	●
Z	N						Moulded enclosure (EN 50021, 50281-1-1)*	○	-	-	●
			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 manual operator	○/●	-	-	●
S	L						Certified IEC 61508 Functional Safety data ⁽²⁾	○/●	-	-	●

OPTIONS & ACCESSORIES

series	pipe size	exhaust protector (stainless steel)
551	G 1/8	34600418 ⁽¹⁾
	NPT 1/8	34600482 ⁽¹⁾
	M5	34600484 ⁽¹⁾

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

ORDERING EXAMPLES:

SC	G	551	A	403	230V / 50 Hz
SC	G	551	A	403	SL 230V / 50 Hz
SC	G	551	A	404	MO 230V / 50 Hz
SCHT	8	551	A	404	MO 230V / 50 Hz
ISSC	G	551	A	404	MO 24V / DC
WSLPKF	G	551	A	303	MO 24V / DC
LI	G	551	A	307	24V / DC
WSLI	G	551	A	308	MO 24V / DC
LPKF	G	551	A	303	MO 24V / DC
WPIS	G	551	A	303	24V / DC
EM	8	551	A	403	MO 230V / 50 Hz
EF	G	551	G	403	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.

PRODUCT SELECTION GUIDE

STEP 1

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

Example : G551A403

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 3.

Example : 230V / 50Hz

STEP 5

Final catalogue / ordering number.

Example :

EM G551A403MO 230 V / 50 Hz

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 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⁽⁶⁾/50Hz; other voltages and 60Hz are available on request

prefix option	power ratings				operator ambient temperature range (TS) (C°) ⁽¹⁾	safety code	electrical enclosure protection (EN 60529)	replacement coil / kit		type (2)
	inrush	holding	hot/cold	=				~	=	
	(VA)	(VA) (W)	(W)	(W)				230 V/50 Hz	24V/DC	
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 alu./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 alu./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	NEMA 4X	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
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 ⁽⁸⁾	2,4	2,4	2,4	0,5/0,5 ⁽⁸⁾	-40 to +80/60	II2G Ex d IIB+H2 Gb T4/T6, II2D Ex tDb	IP67 alu./SS	- ⁽⁴⁾	- ⁽⁴⁾	13
NF/WSNF	-	-	1,9	- /1,9	(-60) ⁽⁷⁾ -40 to +75/80	II2G Ex d IIC T6/T5, II2D Ex tD	IP67 alu./SS	- ⁽⁴⁾ ⁽⁵⁾	- ⁽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	NEMA 4X	-	- ⁽⁴⁾	11
ISSC ⁽³⁾	-	-	-	0,4/0,4	-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 ib IIC Gb T6, II2D Ex t IIIC Db	IP67 alu.	-	- ⁽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⁾	-	-	-	0,4/0,4	-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

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⁾ (WS)NF: Low Power, 230 V AC does not exist. Maximum voltage in AC is 115 V
- ⁽⁶⁾ LI/WSLI: Low Power, 24 V DC only
- ⁽⁷⁾ The certified minimum temperature of this operator
- ⁽⁸⁾ LPKF/WSLPKF: 24 V DC, max. ambient temp. +80°C, contact us (48 V DC = 2,1 W)
- 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, WS DU, 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)

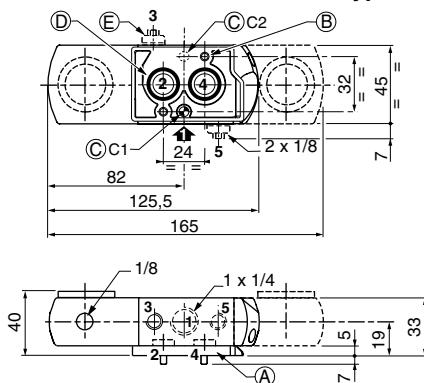
INSTALLATION

- 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)



All types



- (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)



551A403 / 551A404

TYPE 01:

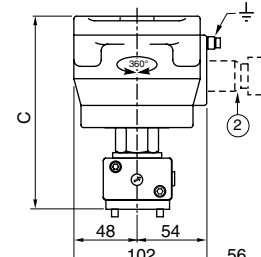
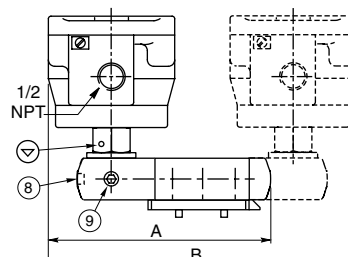
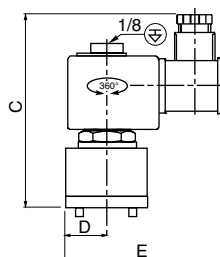
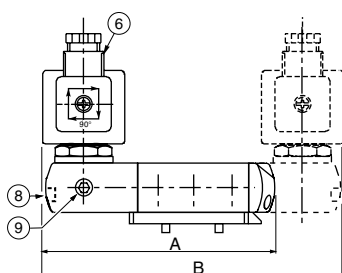
SC and ZN
Epoxy moulded
IEC 335 / ISO 4400 (SC)
EN 50021 (ZN)



551A403 / 551A404

TYPE 02:

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

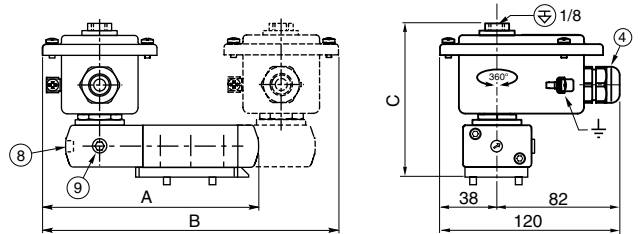


DIMENSIONS (mm), WEIGHT (kg)



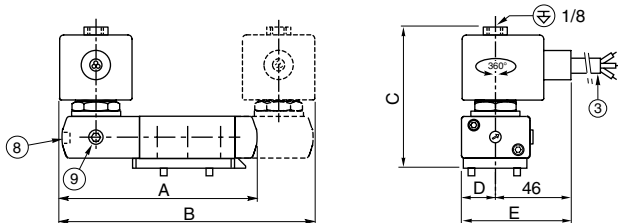
TYPE 04:
 WP / WS
 EM / WSEM
 WPDU / WSDU
 Steel; epoxy coated / AISI 316 SS
 IEC 335 / EN 60079-7/18 and EN 61241-1

551A403 / 551A404



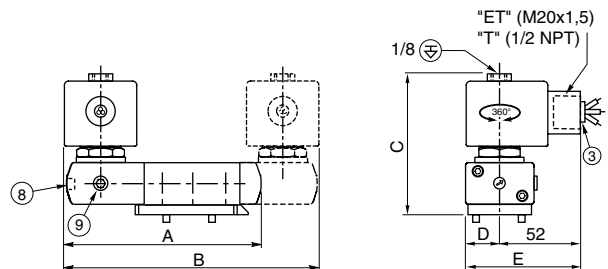
TYPE 05:
 PV
 Epoxy encapsulated
 EN/IEC 60079-18 and EN/IEC 61241-18

551A403 / 551A404



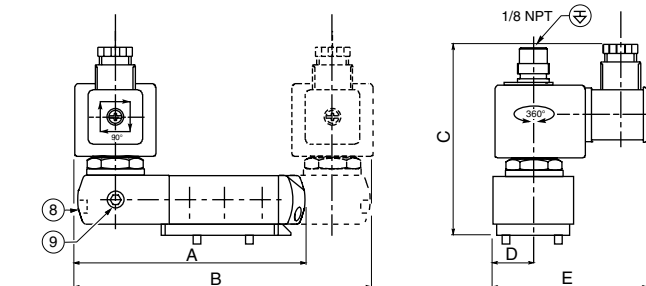
TYPE 06:
 EF and EV: NEMA type 7 and 9
 Epoxy encapsulated
 ICS-6 ANSI
 NOTE: applicable to solenoid only

551G403 / 551G404



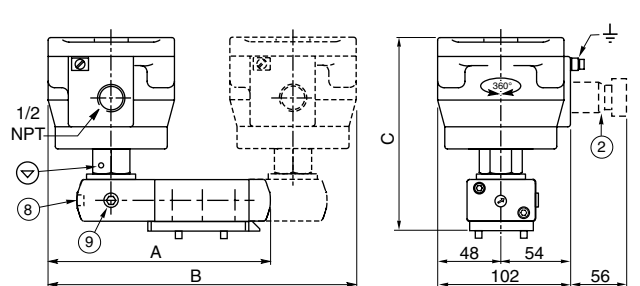
TYPE 07:
 SC and ZN
 Epoxy moulded
 IEC 335 / ISO 4400
 EN 50021

551A303 / 551A304



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

551A303 / 551A304

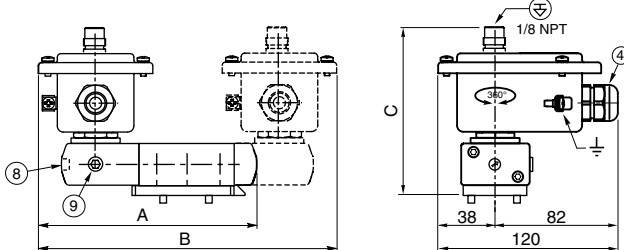


DIMENSIONS (mm), WEIGHT (kg)



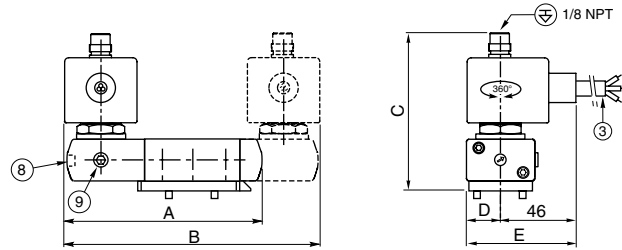
TYPE 09:
 WP / WS
 EM / WSEM
 WPIS / WSIS
 Steel; epoxy coated / AISI 316 SS
 IEC 335/EN 60079-7/11/18/26 and EN 61241-1/11

551A303 / 551A304



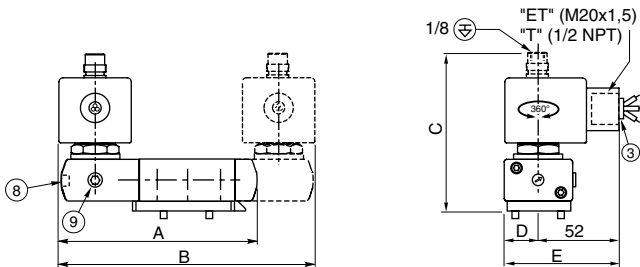
TYPE 10:
 PV
 Epoxy encapsulated
 EN/IEC 60079-18 and EN/IEC 61241-18

551A303 / 551A304



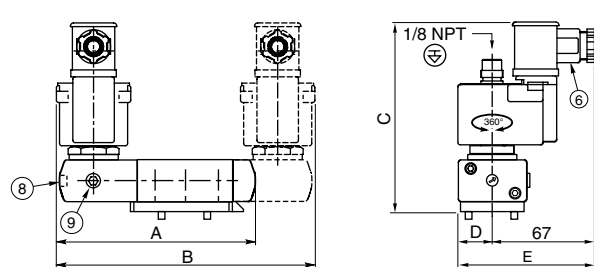
TYPE 11:
 EF and EV: NEMA type 7 and 9
 Epoxy encapsulated
 ICS-6 ANSI
 NOTE: applicable to solenoid only

551G303 / 551G304



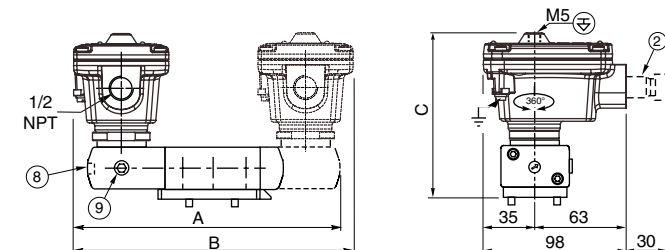
TYPE 12:
 ISSC
 Polypropylene moulded
 Epoxy moulded
 IEC 335 / EN 50020 and EN 50281-1-1

551G403 / 551G404



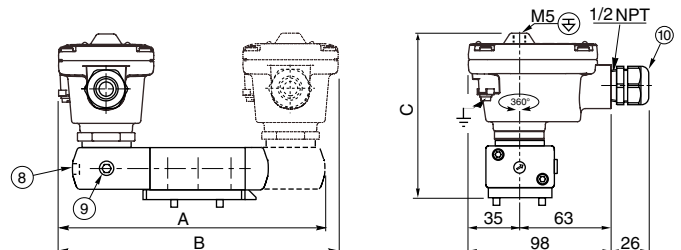
TYPE 13:
 LPKF / WSLPKF
 Aluminium / AISI 316 SS
 EN/IEC 60079-1 and EN/IEC 61241-1

551A303 / 551A304



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, cataphoresis black painting, AISI 316L SS
 IEC and EN: 60079-11, 61241-1

551A303 / 551A304



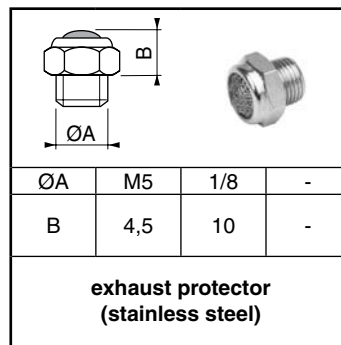
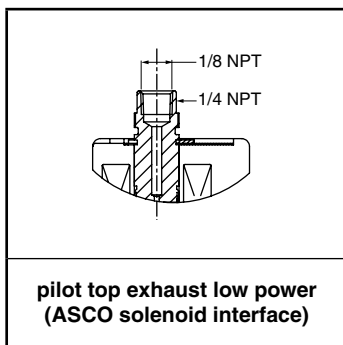
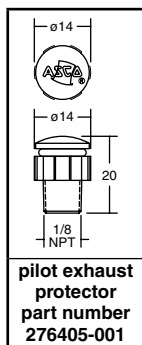
DIMENSIONS (mm), WEIGHT (kg)

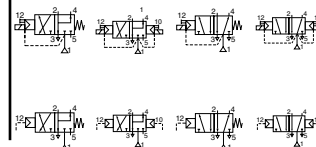
type	prefix option	power level	A	B	C	D	E	weight ⁽¹⁾	
								monostable	bistable
01	SC / SCDU / ZN	basic power	144	182	107,7	22,5	86,5	1,45	1,96
02	NF	basic power	170	236	146,8	-	-	2,49	4,25
02	WSNF	basic power	170	236	146,8	-	-	3,79	5,55
04	WP/WPDU/WS/WSDU/EM/WSEM	basic power	160	216	108	-	-	1,62	2,23
05	PV	basic power	144	184	93	22,5	67,5	1,46	2,19
06	EF / EV	basic power	144,5	185	90,5	22,5	74,5	1,47	2,20
07	SC / ZN	low power	144,5	185	106,5	22,5	87,5	1,45	2,41
08	NF	low power	170	236	146,8	-	-	2,49	4,25
08	WSNF	low power	170	236	146,8	-	-	3,79	5,55
09	WP / WS / EM / WSEM / WPIS / WSIS	low power	160	216	107,2	-	-	1,69	2,23
10	PV	low power	144	184	105,5	22,5	67,5	1,67	2,40
11	EF / EV	low power	144,5	185	105,5	22,5	74,5	1,66	2,39
12	ISSC	low power	134	187	129,5	22,5	89,5	1,70	2,26
13	LPKF	low power	135	186	118	-	-	1,00	1,65
13	WSLPKF	low power	135	186	118	-	-	1,61	2,85
14	LI	low power	135	186	118	-	-	1,01	1,66
14	WSLI	low power	135	186	118	-	-	1,62	2,86

⁽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 Push type or screw type manual operator, 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





FEATURES

- The monostable spool valves have TÜV certified IEC 61508 Functional Safety data and can be used up to SIL 4
- 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) 700 l/min (ANR)

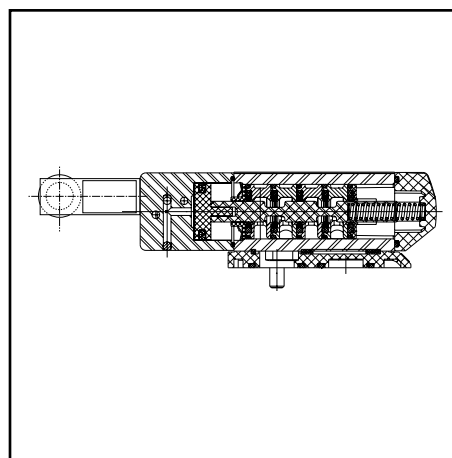
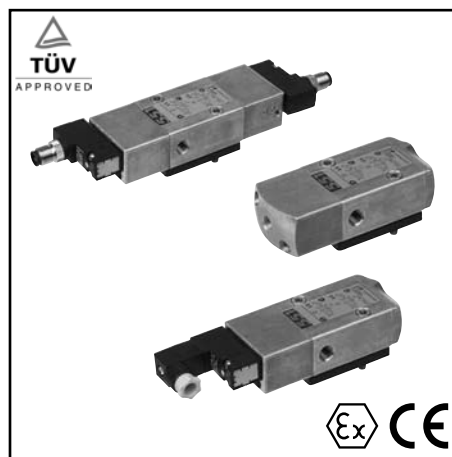
fluids (*)	temperature range (TS)	seal materials (*)
air, inert gas, filtered	- 25°C to + 40°C ⁽²⁾	VMQ (silicone) + PUR (polyurethane)

⁽²⁾ -40°C for air operated versions.

MATERIALS IN CONTACT WITH FLUID

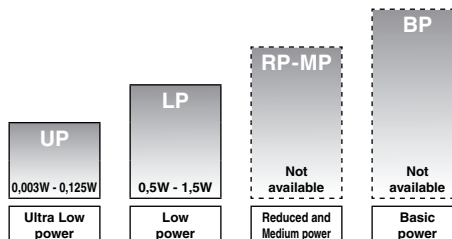
(*) Ensure that the compatibility of the fluids in contact with the materials is verified

	Air operated	CNOMO solenoid (pilot) interface
Body, end covers	Brass, AISI 316L	Brass, AISI 316L
Interface plates	Glass-filled PA	Glass-filled PA
Spool valve internal parts	Brass, stainless st., POM	Brass, stainless st., POM
Seals	NBR	NBR
Pilot internal parts	-	Size 15 (E06.36.120N), refer to catalogue pages: 302 pilot (CFSC/CFVT/CFSCIS) and 630 piezotronic pilot (PISC/PISCIS)



AIR OPERATED SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar)			prefix optional	basic catalogue number
				min.	max. (PS)			
(*)	(mm)	(m³/h)	(l/min)		~	=	air (*)	
Pilot air operated - spring return (monostable)								
1/4	6	0,75	12,5	2	10	10	-	❖551A103 ⁽¹⁾
Pilot air operated and return (bistable)								
1/4	6	0,75	12,5	2	10	10	-	❖551A104



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 / IECEx		IP65				
(*)	(mm)	(m³/h)	(l/min)		~	=	air (*)	~/=	CFSCIS	PISCIS	CFSC	CFVT	PISC	CNOMO size 15
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)														
1/4	6	0,6	10	2	10	10	LP	-	-	●	●	-	❖551C503 ⁽¹⁾	
1/4	6	0,6	10	2	-	8	LP	○	-	-	-	-	❖551C503 ⁽¹⁾	
1/4	6	0,6	10	2	8	8	UP	-	○	-	-	●	❖551C503 ⁽¹⁾	
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)														
1/4	6	0,6	10	2	10	10	LP	-	-	●	●	-	❖551C504	
1/4	6	0,6	10	2	-	8	LP	○	-	-	-	-	❖551C504	
1/4	6	0,6	10	2	8	8	UP	-	○	-	-	●	❖551C504	

❖ 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".

PREFIX TABLE

prefix							description	power level			
1	2	3	4	5	6	7		UP	LP	RP	BP
C	F	S	C				Solenoid + spade plug DIN 43650, 9,4 mm, industry standard B (EN 60730)	-	●	-	-
C	F	V	T				Solenoid with connection M12, LED + protection (EN 60730)	-	○	-	-
C	F	S	C	I	S		Intrinsically safe, 9,4 mm, pilot 302; ATEX (EN 60079 / 61241) *	-	○	-	-
P	I	S	C				Solenoid, spade plug DIN 43650, 9,4 mm, industry stand. B, ATEX (EN 60730)	●	-	-	-
P	I	S	C	I	S		Intrinsically safe, piezotronic 630 pilot, ATEX (EN 60079/61241) *	○	-	-	-

SUFFIX TABLE

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

OPTIONS & ACCESSORIES

series	pipe size	exhaust protector (stainless steel)
551	G 1/8	34600418 ⁽²⁾
	NPT 1/8	34600482 ⁽²⁾
	M5	34600484 ⁽²⁾

- Available feature
- Available feature in DC only
- Not available
- * ATEX solenoids are also approved according to EN 13463-1 (non electrical valves)
- ⁽¹⁾ Not to use with "SL" 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 9. Select basic catalogue number, including pipe thread identification letter. Refer to the specifications tables on page 9.

Example: G551C503

STEP 2

Select prefix (combination). Select the appropriate operator from the tables on pages 9 and 10. Select for this operator in the electrical characteristics table on page 11: the power level (UP, LP), 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 : CFSC

STEP 3

Select suffix. Suffix **MO** mandatory for the pilot 302 (CFSCIS). Refer to the suffix table on page 10, respect the indicated power level.

Example : MO

STEP 4

Selection of TPL, on page 11, is mandatory for the 630 pilot (PISCIS), 12 HV DC (32 mW) and 24 HV DC (125 mW). Add "X" between the prefix "PISCIS" and the basic catalogue number.

STEP 5

Select voltage. Refer to standard voltages on page 11.

Example : 230V / 50Hz

STEP 6

Final catalogue / ordering number.

Example :
CFSC G551C503MO 230 V / 50 Hz

ORDERING EXAMPLES:

CFSC	G	551	C	503			230V / 50 Hz
CFSC	G	551	C	503	SL		230V / 50 Hz
CFVT	8	551	C	504	MO		230V / 50 Hz
PISCIS	G	551	C	503	MO		6V / DC
PISCIS	G	551	C	503	SLMO		6V / DC
PISCIS X	G	551	C	504	MS	TPL20666	24HV / DC
				G	551	A	103
				G	551	A	103
				G	551	A	103
				G	551	A	104

prefix ——— voltage

pipe thread ——— TPL

basic number ——— suffix

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 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 (=) CFSC/CFVT: 24V CFSCIS: 12V - 24V ; PISC: 24V à 70V ; PISCIS: 6V, 8V, 12V, 24V AC (~) CFSC: 24V - 115V - 230V/50Hz - Other voltages are available on request PISC: 24V to 70V

prefix option	power ratings				operator ambient temperature range (TS) (C°)	safety code	electrical enclosure protection (EN 60529)	replacement coil		type ⁽¹⁾
	inrush ~ (VA)	holding ~ (VA) (W)		hot/cold = (W)				~	=	
Low power (LP)										
CFSC	1,4	1,2	1,1	1/1,12	-25 to +60	EN 60730	moulded IP65	-	-	01
CFSC	2,1 ⁽⁶⁾	1,6 ⁽⁶⁾	1,5 ⁽⁶⁾	-	-25 to +60	EN 60730	moulded IP65	-	-	01
CFVT ⁽⁵⁾	-	-	-	1,15/1,35	-25 to +60	EN 60730	moulded IP67/IP65	-	-	02
CFSCIS ⁽³⁾⁽⁴⁾	-	-	-	0,5	-10 to +40/60	II 1G Ex ia IIC T6/T4, II 1D Ex iaD 20	moulded IP65	-	-	04
Ultra low power (UP)										
PISC	-	-	-	0,007	-0 to +60	-	moulded IP65	-	-	06
PISCIS ⁽²⁾⁽³⁾ 6V	-	-	-	0,003	-20 to +50	II 1G Ex ia IIC T6, II 1D Ex iaD 20	moulded IP65	-	-	06
PISCIS ⁽²⁾⁽³⁾ 8V	-	-	-	0,022	-20 to +50	II 1G Ex ia IIC T6, II 1D Ex iaD 20	moulded IP65	-	-	06
PISCIS ⁽²⁾⁽³⁾ 12LV	-	-	-	0,012	-20 to +50	II 1G Ex ia IIC T6, II 1D Ex iaD 20	moulded IP65	-	-	06
PISCIS ⁽²⁾⁽³⁾ 12HV	-	-	-	0,032	-20 to +50	II 1G Ex ia IIC T6, II 1D Ex iaD 20	moulded IP65	-	-	06
PISCIS ⁽²⁾⁽³⁾ 12LV	-	-	-	0,046	-20 to +50	II 1G Ex ia IIC T6, II 1D Ex iaD 20	moulded IP65	-	-	06
PISCIS ⁽²⁾⁽³⁾ 12HV	-	-	-	0,125	-20 to +50	II 1G Ex ia IIC T6, II 1D Ex iaD 20	moulded IP65	-	-	06

- Not available

⁽¹⁾ Refer to the dimensional drawings on pages 12 and 13.

⁽²⁾ Piezotronic standard voltages:

Prefix PISCIS:	6 V DC / 3 mW	8 V DC / 22 mW	12L V DC / 12 mW	12H V DC / 32 mW	24L V DC / 46 mW	24H V DC / 125 mW
Turn ON voltage U _{ON}	6 .. 9 V	7,2 .. 12 V	10,8 .. 16 V	10,8 .. 16 V	21,6 .. 28 V	21,6 .. 28 V
Turn OFF voltage U _{OFF}	3 V	3,2 V	3,3 V	3,3 V	5 V	5 V
Peak current	6 mA	10 mA	6,8 mA	8,1 mA	10 mA	14 mA
Holding current	0,5 mA	2,8 mA	1 mA	2,7 mA	1,9 mA	5,2 mA
Cable + max. barrier resistances (R _s + R _v)	1200 Ω max.	300 Ω max.	1200 Ω max.	470 Ω max.	1200 Ω max.	470 Ω max.

prefix option	safety parameters				
	U _I = (DC)	I _I	P _I	L _I	C _I
	(V)	(mA)	(W)	(H)	(µF)
Low power (LP)					
CFSCIS	28	300	1,6	0	0
Ultra low power (UP)					
PISCIS	30	200	0,9	0	0

⁽³⁾ Intrinsically safe pilots: Check the electrical characteristics in the corresponding catalogue pages (CFSCIS: 302 pilot / PISCIS: 630 pilot).

⁽⁴⁾ CFSCIS (302 pilot):

12 V : I_(ON) min., with LED = 33 mA; U_(ON) min. = 11,9 V; U_(max) recommended = 23 V; U_(OFF) = 3,3 V; I_(OFF) = 10 mA
24 V : I_(ON) min., with LED = 25 mA; U_(ON) min. = 16,4 V; U_(max) recommended = 28 V; U_(OFF) = 5,7 V; I_(OFF) = 7 mA

⁽⁵⁾ Values for LED + protection.

⁽⁶⁾ AC: 230 V

- Not available

ELECTRICAL CONNECTIONS

prefix	connection
CFSC, CFSCIS, PISC, PISCIS	Spade plug connector with cable gland DIN 43650, 9,4 mm, industry standard B, for cables with an outer diameter from 4 to 6 mm
CFVT	M12 connection for M12 connector

ADDITIONAL OPTIONS

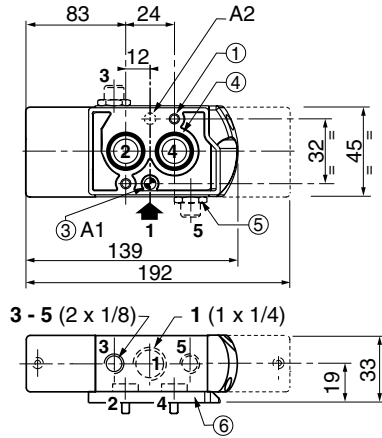
- TPL numbers: TPL **20665**: Piezotronic, PISCIS prefix, 12 HV (32 mW)
TPL **20666**: Piezotronic, PISCIS prefix, 24 HV (125 mW)
- TPL numbers: TPL **20674**: LED and protection, CFSC prefix - Add 0,15 W (DC) and 0,4 W/VA (AC)
Only available in 24 V AC/DC and 115 V AC
- Set of stainless steel mounting screws, catalogue number **97802212**
- Other pipe threads are available on request

INSTALLATION

- Installation/maintenance instructions are included with each valve
- The solenoid valves and air operated 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.)
- 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

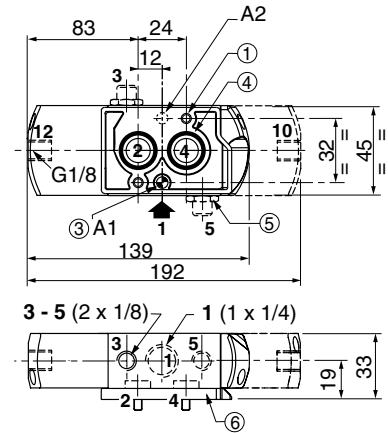
DIMENSIONS (mm), WEIGHT (kg)

Type 01..06: CNOMO size 15 (E06.36.120N)



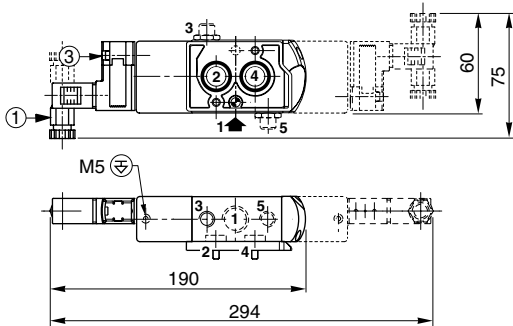
- ① 2 mounting holes: 5,3 mm dia.
(Spotfacing: 9 mm dia., depth 5 mm)
- ③ One 5 mm dia. hole for dowel pin:
- in position A1: 3/2 NC function plate
- in position A2: 5/2 function plate
- ④ 2 O-ring seals (supplied)
- ⑤ Exhaust reducer or exhaust protector
- ⑥ Interface plate

Type 07: Air operated



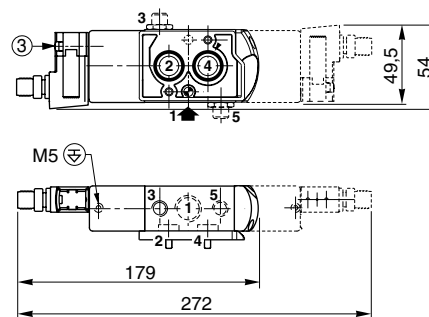
TYPE 01:
CFSC
302 pilot
Polyarylamide
IEC 335 / DIN 43650

551C503 / 551C504
551C503MS / 551C504MS / 551C503MO / 551C504MO



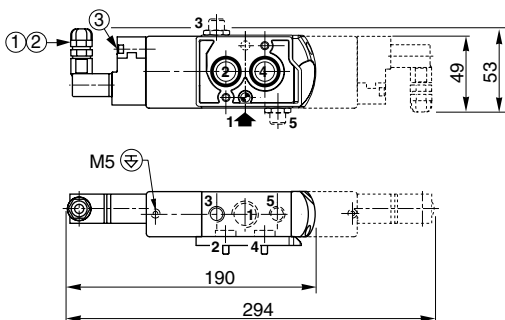
TYPE 02:
CFVT
302 pilot
Polyarylamide
IEC 335 / connection M12 + LED and protection

551C503 / 551C504
551C503MS / 551C504MS / 551C503MO / 551C504MO



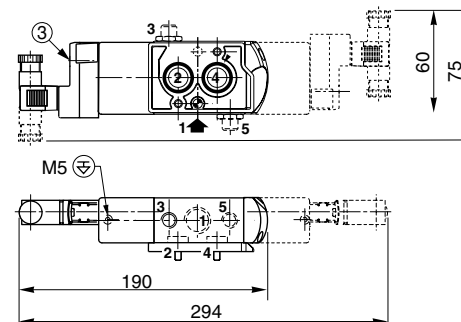
TYPE 04:
CFSCIS
302 pilot
Polyarylamide
IEC 335 / DIN 43650
EN/IEC 60079-11/26 and EN/IEC 61241-11

551C503MO / 551C504MO



TYPE 06:
PICS / PISCIS
Piezotronic pilot
Polyamide
IEC 335 / DIN 43650
EN 60079-11/26 and EN 61241-11

551C503MO / 551C504MO



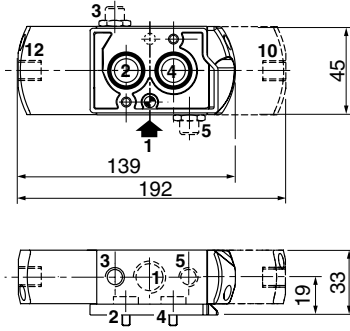
DIMENSIONS (mm), WEIGHT (kg)



TYPE 07:

Air operated version
 No prefix
 Use "SL", "GD" or "GD SL" suffix
 IP65 / II 1 GD c

551A103 / 551A104



- ① Connector rotatable by 90° increments (cable 4 - 6 mm)
- ② Connector rotatable by 90° increments (cable 6 - 7 mm)
- ③ Manual operator location
- ⊕ Connectable pilot exhaust port

type	prefix option	power level	weight ⁽¹⁾	
			monostable	bistable
01	CFSC	low power	0,876	1,092
02	CFVT	low power	0,876	1,092
04	CFSCIS	low power	0,881	1,102
06	PISC / PISCIS	ultra low power	0,86	1,06
07	-	-	0,824	0,988

⁽¹⁾ Incl. connector(s), except CFVT.

ACCESSORIES

