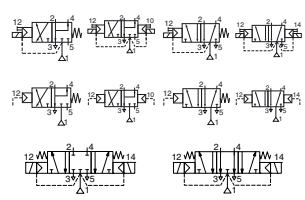
SPOOL VALVES

pilot operated or air operated, spool type
single/dual solenoid or air
aluminium body, "NAMUR" style, 1/4 to 1/2



3/2-5/2
5/3
Series
551-552
553



FEATURES

- *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 the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *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 (552-553/EXIDA)*
- *The solenoid valves satisfy all relevant EC directives*

GENERAL

Differential pressure 2 - 10 bar [1 bar = 100 kPa]

Flow (Qv at 6 bar) l/min (ANR)

1/4	3/8	1/2
700	3000	3000

fluids (∗)	temperature range (TS)	seal materials (∗)
air, inert gas, filtered	- 25°C to + 60°C	NBR (nitrile) + PUR (polyurethane)

MATERIALS IN CONTACT WITH FLUID

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

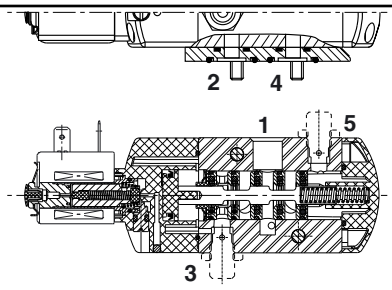
Body, end cover Aluminium, black anodized
End cover (spring return) Glass fibre filled PA
Spool valve internal parts Zamak, stainless steel, POM, aluminium
Seals NBR + PUR
Core and core tube Stainless steel
Shading coil Copper

ELECTRICAL CHARACTERISTICS

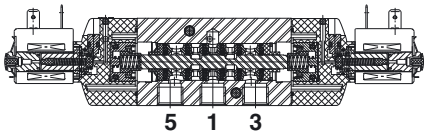
Coil insulation class F
Connector Spade plug (cable Ø 6-8 mm or Ø 6-10 mm)
Connector specification DIN 43650, 11 mm, industry standard B (type 01) or ISO 4400 / EN 175301-803, form A (type 02)
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 (EN 60529)
Standard voltages DC (=): 24V - 48V
(Other voltages and 60 Hz on request) AC (~): 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings inrush ~ (VA)	holding ~ (VA)	holding ~ (W)	hot/cold = (W)	operator ambient temperature range (TS) (C°)	replacement coil ~ 230 V/50 Hz	replacement coil = 24 V DC	type (1)
SC	6	3,5	2,5	2,5/3	-25 to + 60	43004886	43004869	01
SC	15	7	5	2,5/6,9	-25 to + 60	43004649	43004647	02

(1) Refer to the dimensional drawings on the following page



3/2 NC - 5/2 function



5/3 function

G

SPECIFICATIONS

pipe size G	orifice size (mm)	flow coefficient Kv (m³/h)	flow coefficient Kv (l/min)	operating pressure differential (bar) min.	max. (PS) air (*) ~	max. (PS) air (*) =	power coil (W) ~	power coil (W) =	catalogue number ~/=	options maintained man. operator		
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A001**	**MS**	-	-
3/8	12	2,49	41,5	2	10	10	5	6,9	**SCG552A001**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	6,9	**SCG553A001**	**MS**	-	-
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A002**	**MS**	-	-
3/8	12	2,49	41,5	2	10	10	5	6,9	**SCG552A002**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	6,9	**SCG553A002**	**MS**	-	-
5/3 - W1 - pressure held, solenoid air pilot and return												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A065**	**MS**	-	-
3/8	12	2,49	41,5	2	10	10	5	6,9	**SCG552A065**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	6,9	**SCG553A065**	**MS**	-	-
5/3 - W3 - pressure released, solenoid air pilot and return												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A066**	**MS**	-	-
3/8	12	2,49	41,5	2	10	10	5	6,9	**SCG552A066**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	6,9	**SCG553A066**	**MS**	-	-
3/2 NC - 5/2 - Solenoid air pilot operated spring return (monostable), certified IEC 61508 Functional Safety data												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A001SL**	-	-	-
3/8	12	2,49	41,5	2	10	10	5	6,9	**SCG552A001SL**	-	-	-
1/2	13	2,49	41,5	2	10	10	5	6,9	**SCG553A001SL**	-	-	-

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AIR OPERATED AND OPTIONS

- Versions (Type 03): - pilot air operated, spring return, catalogue numbers: **G551A101** / **G551A101SL** (1/4); **G552A101** / **G552A101SL** (3/8); **G553A101** / **G553A101SL** (1/2)
  - pilot air operated and return, catalogue numbers: **G551A102** (1/4); **G552A102** (3/8); **G553A102** (1/2)
- Suffix "**MF**" (air operated only, low temperature version, -40°C)
- Suffix "**GD**" (air operated only, ATEX 2GD c)
- Compliance with "UL" standard is available on request
- Explosionproof enclosures for use in zones 1/21-2/22, categories 2-3 to ATEX Directive 94/9/EC (see "Explosionproof solenoids" section)
- Valves equipped with exhaust reducers G 1/8 (3/2 NC-5/2, series 551), suffix M
- Set of stainless steel mounting screws (series 551), catalogue number **97802212**
- Set of two G 1/8 exhaust reducers (series 551), catalogue number **88100344**
- Other pipe connections are available on request
- Plug with visual indication and peak voltage suppression or with cable length of 2 m (see Solenoids, Coils & Accessories section)

INSTALLATION

- The 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
- 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.)
- IEC 61508 Functional Safety (suffix SL), allowable temperature range: -40°C to +60°C. For probability of failure, contact us
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Valves with suffix "SL" are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

ACCESSORIES

series	pipe size	exhaust protector (stainless steel)
551	G 1/8	**34600418** (1)
551 (W1/W3)	G 1/4	**34600419**
552	G 3/8	**34600478** (1)
553	G 1/2	**34600479** (1)
551-552-553	M5	**34600484** (1)

(1) Supplied with suffix "SL"

ORDERING EXAMPLES:

SC G 551 **A** 001 **MS** 230V / 50 Hz
SC G 551 **A** 001 **SL** 24V / DC
SC G 552 **A** 002 115V / 50 Hz
G 551 **A** 101 **SL**

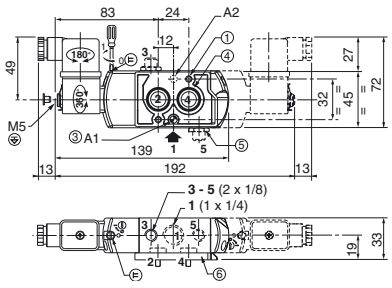
prefix
pipe thread
basic number
voltage
suffix

DIMENSIONS (mm), WEIGHT (kg)

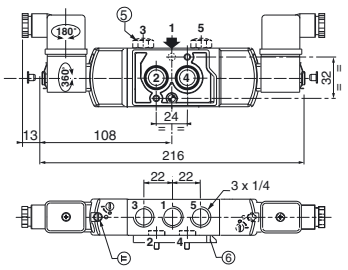


TYPE 01
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / DIN 43650
IP65

551A001/A001MS/A001SL/A002/A002MS



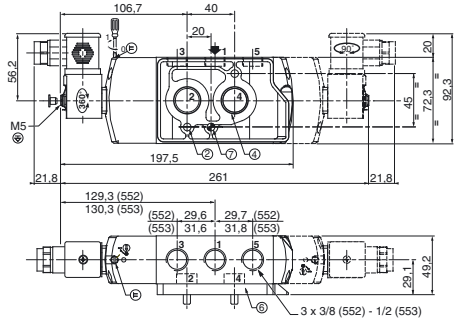
551A065/A065MS/A066/A066MS (W1 - W3)





TYPE 02
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / ISO 4400
IP65

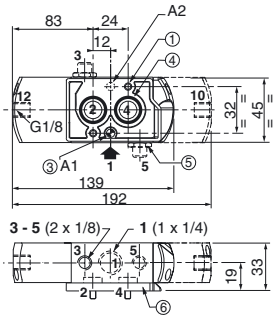
552A001/A001MS/A001SL/A002/A002MS
552A065/A065MS/A066/A066MS
553A001/A001MS/A001SL/A002/A002MS
553A065/A065MS/A066/A066MS



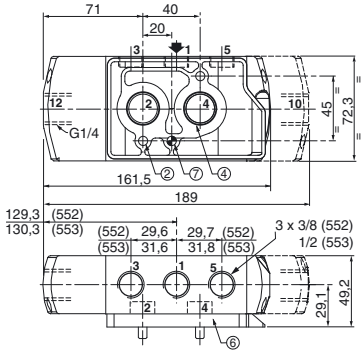


TYPE 03
No prefix
Air operated version

G551A101/A102



G552A101/A101SL/A102
G553A101/A101SL/A102



1. 2 mounting holes: 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)
2. 2 mounting holes: 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 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 (G 1/8, 3/2 NC-5/2, series 551) or exhaust protector
6. Interface plate

weight (2) (kg)	type 01		type 02		type 03		
	3/2-5/2	5/3	552	553	551	552	553
monostable.	0,34	-	0,91	0,90	0,31	0,86	0,85
bistable	0,46	0,45	1,21	1,20	0,41	1,12	1,11

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

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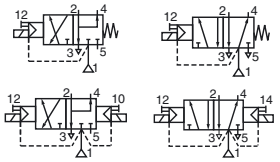
SOLENOID VALVES

pilot operated, spool type
single/dual solenoid (mono/bistable function)
aluminium body, "NAMUR" style, 1/4 to 1/2



3/2-5/2

Series
551-552
553



FEATURES

- *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 the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *Solenoid pilot valve with spade-plug connector type DIN 43650, form C with 9,4 mm spacing. Versions with M12 connection*
- *Solenoid pilot valve, CNOMO size 15 interface, with or without integral LED and electrical protection. LED indicator visible from 3 sides*
- *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 (552-553/EXIDA)*
- *The solenoid valves satisfy all relevant EC directives*

GENERAL

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

1/4	3/8	1/2
700	3000	3000

Pilot mounting interface surface ISO 15218 (CNOMO E06.36.120N, size 15)

fluids (✳)	temperature range (TS)	seal materials (✳)
air, inert gas, filtered	- 25°C to + 40°C	NBR (nitrile) + PUR (polyurethane)

MATERIALS IN CONTACT WITH FLUID

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

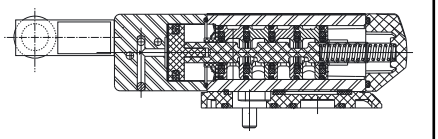
Body Aluminium, black anodized
End cover (spring) Glass fibre filled PA
Interface plates Glass fibre filled PA
Spool valve internal parts Zamak, stainless steel, POM, aluminium
Pilot body PAA
Pilot internal parts POM, PET, stainless steel and brass
Pneumatic interface seal TPE

ELECTRICAL CHARACTERISTICS

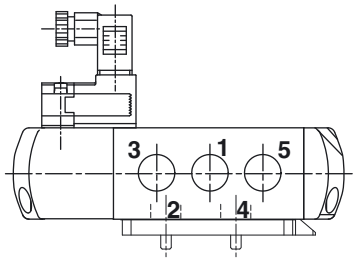
Coil insulation class F
Connector (type 05) Spade plug (cable Ø 6-7 mm)
Connector specification Type 05: DIN 43650, 9,4 mm, form C
Connection Type 07: M12 (CNOMO E03.62.520.N)
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 [05] or IP67 [07] (EN 60529)
Standard voltages DC (=): 24V
(Other voltages and 60 Hz on request) AC (~): 24V-115V-230V / 50 Hz (prefix CFSC)

prefix option	power ratings: inrush ~ (VA)	power ratings: holding ~ (VA)	power ratings: holding ~ (W)	power ratings: hot/cold = (W)	operator ambient temperature range (TS) (C°)	voltage ~ (V)	voltage = (V)	type (1)
CFSC	1,4	1,2	1,1	1/1,2	-25 to + 60	24-115	24	05
	1,8 (2)	1,6 (2)	1,5 (2)	1,15/1,35 (2)				
	2,1	1,6	1,5	-	-25 to + 60	230	-	
	2,5 (2)	2 (2)	1,9 (2)	-	-25 to + 50			
CFVT (3)	-	-	-	1,15/1,35	-25 to + 60	-	24	07

(1) Refer to the dimensional drawings on the following page.
(2) Values with LED indicator and protection, use TPL 20674.
(3) Supplied with LED indicator and protection.



551 (prefix CFSC)



552-553 (prefix CFSC)

G

SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar) min.	operating pressure differential (bar) max. (PS) air (*) ~	operating pressure differential (bar) max. (PS) air (*) =	power coil (W) ~	power coil (W) =	catalogue number connector DIN 43650, 9,4 mm (type 05) ~/=	catalogue number M12 (type 07) =	options maintained man. operator	options impulse man. operator	
G	(mm)	(m^3/h)	(l/min)										
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)													
1/4	6	0,6	10	2	10	10	1,1..1,5	1,2	**CFSCG551C501**	-	MS	MO	-
							-	1,35	-	**CFVTG551C501**	MS	MO	-
3/8	12	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG552A501**	-	MS	MO	-
							-	1,35	-	**CFVTG552A501**	MS	MO	-
1/2	13	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG553A501**	-	MS	MO	-
							-	1,35	-	**CFVTG553A501**	MS	MO	-
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)													
1/4	6	0,6	10	2	10	10	1,1..1,5	1,2	**CFSCG551C502**	-	MS	MO	-
							-	1,35	-	**CFVTG551C502**	MS	MO	-
3/8	12	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG552A502**	-	MS	MO	-
							-	1,35	-	**CFVTG552A502**	MS	MO	-
1/2	13	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG553A502**	-	MS	MO	-
							-	1,35	-	**CFVTG553A502**	MS	MO	-

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SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)			power coil (W)		catalogue number		options		
				min.	max. (PS)				connector DIN 43650, 9,4 mm	M12	maintained man. operator	impulse man. operator	
					air (*)				(type 05)	(type 07)			
G	(mm)	(m³/h)	(l/min)		~	=	~	=	~/=	=			
3/2 NC - 5/2 - Solenoid air pilot operated spring return (monostable), certified IEC 61508 Functional Safety data													
1/4	6	0,6	10	2	10	10	1,1..1,5	1,2	**CFSCG551C501SL**	-	-	**MO**	-
							-	1,35	-	**CFVTG551C501SL**	-	**MO**	-
3/8	12	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG552A501SL**	-	-	**MO**	-
							-	1,35	-	**CFVTG552A501SL**	-	**MO**	-
1/2	13	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG553A501SL**	-	-	**MO**	-
							-	1,35	-	**CFVTG553A501SL**	-	**MO**	-

OPTIONS

- Explosionproof enclosures for use in zones 1/21-2/22, categories 2-3 to ATEX Directive 94/9/EC (see "Explosionproof solenoids" section)
- LED and protection, prefixes CFSC / CFSD, use TPL number: TPL 20674 (e.g.: CFSDXG551C505TPL20674)
- Straight M12 connector: with 5 m cable length (catalogue number **88130212**)
- Valves equipped with exhaust reducers G 1/8 (3/2 NC-5/2, series 551), suffix M
- Set of stainless steel mounting screws (series 551), catalogue number **97802212**
- Set of two G 1/8 exhaust reducers (series 551), catalogue number **88100344**
- Versions with spade-plug connector type ISO 15217/DIN 43650 form C with 8 mm spacing or with cable ends: contact us
- Other pipe connections are available on request
- Plug with visual indication and peak voltage suppression or with cable length of 2 m (see Solenoids, Coils & Accessories section)

INSTALLATION

- The 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
- 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.)
- IEC 61508 Functional Safety (suffix SL), allowable temperature range: -40°C to +60°C. For probability of failure, contact us
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Valves with suffix "SL" are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

ACCESSORIES

series	pipe size	exhaust protector (stainless steel)
551	G 1/8	**34600418** (1)
552	G 3/8	**34600478** (1)
553	G 1/2	**34600479** (1)
551-552-553	M5	**34600484** (1)

(1) Supplied with suffix "SL"

ORDERING EXAMPLES:

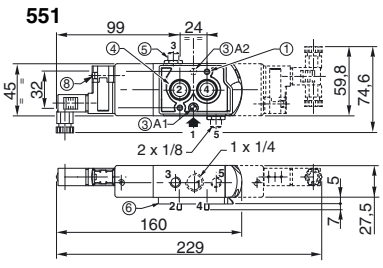
CFSC	G	551 **C** 501		230V / 50 Hz
CFSC	G	551 **C** 501	**SL**	115V / 50 Hz
CFVT	G	552 **A** 502	**MS**	24V / DC
CFSC	G	551 **C** 501	**SLMO**	230V / 50 Hz

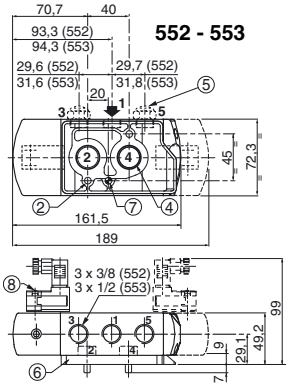
prefix — pipe thread — basic number — voltage — suffix

DIMENSIONS (mm), WEIGHT (kg)



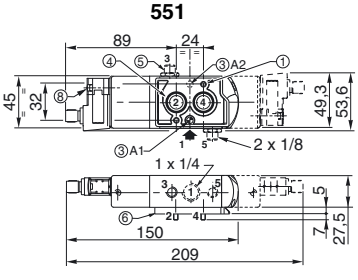
TYPE 05
Prefix "CFSC"
Polyarilamide
IEC 335 / IP65
DIN 43650, 9,4 mm

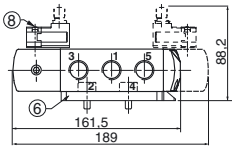






TYPE 07
Prefix "CFVT"
Polyarilamide
IEC 335 / IP67
M12





2 mounting holes:

1. 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)
2. 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 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 (G 1/8, series 551) or exhaust protector
6. Interface plate
7. One 6,5 mm dia. hole for dowel pin, position for 3/2 NC or 5/2 function plate
8. Manual operator location

type	prefix option	weight (2) monostable			bistable		
		551	552	553	551	552	553
05	CFSC	0,34	1,1	1	0,39	2,18	2,08
07	CFVT	0,36	1,12	1,02	0,43	2,22	2,12

(2) Prefix CFSC: including connector(s).

00095GB-2010/R01
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