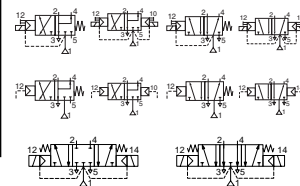




SPOOL VALVES

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 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)
- The monostable spool valves have TÜV certified IEC 61508 Functional Safety data and can be used up to SIL 4/AK 7
- The solenoid valves satisfy all relevant EC Directives

GENERAL

Differential pressure
Flow (Qv at 6 bar)

2 - 10 bar [1 bar = 100 kPa]
l/min (ANR)

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

| fluids (*) | temperature range | 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-filled polyamide |
| Interface plates | Glass-filled polyamide |
| 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)

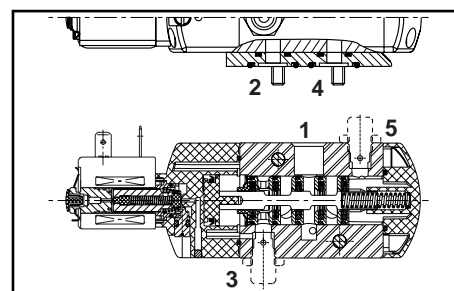
AC (-): 24V - 48V - 115V - 230V / 50 Hz

| prefix option | power ratings | | | | operator ambient temperature range (TS) (C°) | replacement coil | | type (1) |
|---------------|---------------|---------------|-----|----------------|--|------------------|-----------|----------|
| | inrush ~ (VA) | holding ~ (W) | | hot/cold = (W) | | ~ 230 V/50 Hz | = 24 V DC | |
| | | (VA) | (W) | | | | | |
| 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 |

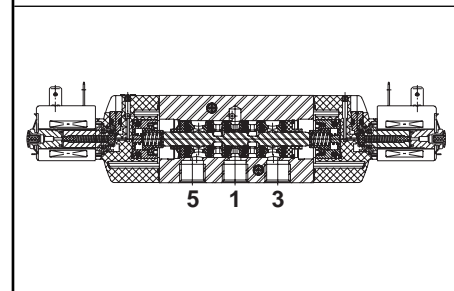
(1) Refer to the dimensional drawings on the following page.

SPECIFICATIONS

| pipe size | orifice size (mm) | flow coefficient Kv (m³/h) (l/min) | | operating pressure differential (bar) | | | | power coil (W) | | catalogue number | options | | |
|--|-------------------|------------------------------------|---------|---------------------------------------|-----------|----|---------|----------------|--------------|------------------|------------|---------------|--|
| | | | | min. | max. (PS) | | air (*) | | | | maintained | man. operator | |
| | | | | | ~ | = | | | | | | | |
| G | (mm) | (m³/h) | (l/min) | ~ | = | ~ | = | ~ | = | | | | |
| 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 operated 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 release, solenoid air pilot operated 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 | - | - | - | |



3/2 NC - 5/2 function



5/3 function

G

AIR OPERATED AND OPTIONS

- Versions: - pilot air operated, spring return, catalogue numbers: **G551A101** (1/4); **G552A101** (3/8); **G553A101** (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
- Magnetic latch execution for 551 series, TPL 20649
- 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 **978 02 212**
- Set of two G 1/8 exhaust reducers (series 551), catalogue number **881 00 344**
- Other pipe threads are available on request
- Plug with visual indication and peak voltage suppression or with cable length of 2m (see Solenoids, Coils & Accessories section)

INSTALLATION

- 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
- 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 identifier is 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 |
| 553 | G 1/2 | 34600479 |
| 551-552-553 | M5 | 34600484 ⁽¹⁾ |

⁽¹⁾ Supplied with suffix "SL".

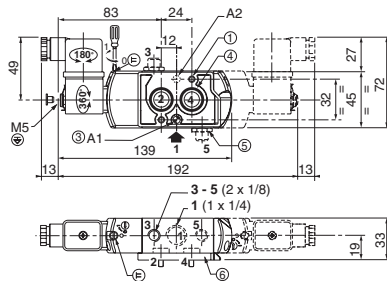
DIMENSIONS (mm), WEIGHT (kg)



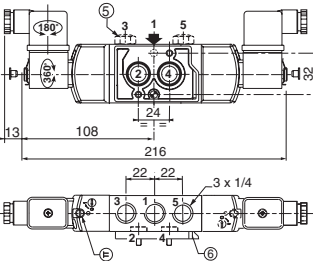
TYPE 01

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

551A001/A001MS/A001SL/A002/A002MS



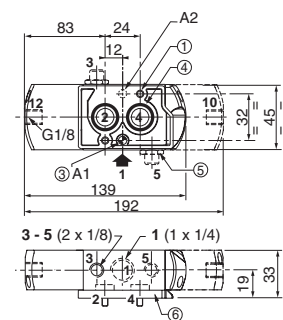
551A065/A065MS/A066/A066MS (W1 - W3)



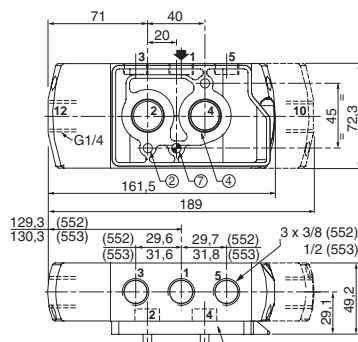
TYPE 03

No Prefix (suffix "GD")
Air operated version

G551A101/A102



G552A101/A102 /G553A101/A102



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 |

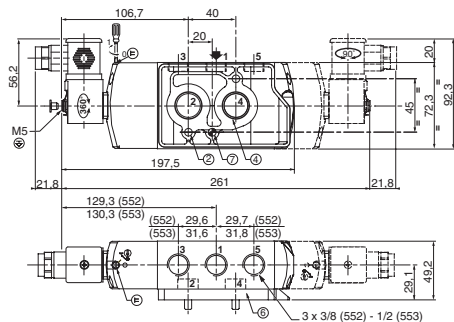
Diagram showing the breakdown of the part number into: prefix, pipe thread, basic number, voltage, and suffix.



TYPE 02

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

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



- 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

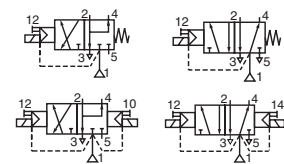
| | type 01 | | type 02 | | type 03 | | |
|----------|---------|------|---------|------|---------|------|------|
| | 3/2-5/2 | 5/3 | 552 | 553 | 551 | 552 | 553 |
| monost. | 0,34 | - | 0,91 | 0,90 | 0,31 | 0,86 | 0,85 |
| bistable | 0,46 | 0,45 | 1,21 | 1,20 | 0,41 | 1,12 | 1,11 |

⁽²⁾ Including coil and connector.



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 function 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 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, industry standard, form B with 9,4 mm spacing, or to ISO 15217/DIN 43650 form C with 8 mm spacing. Versions with M12 connector and cable ends
- 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 certified IEC 61508 Functional Safety data and can be used up to SIL 4/AK 7
- The solenoid valves satisfy all relevant EC Directives

GENERAL

Differential pressure
Flow (Qv at 6 bar)

2 - 10 bar [1 bar = 100 kPa]
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
CNOMO size 15 solenoid (pilot) interface

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

ELECTRICAL CHARACTERISTICS

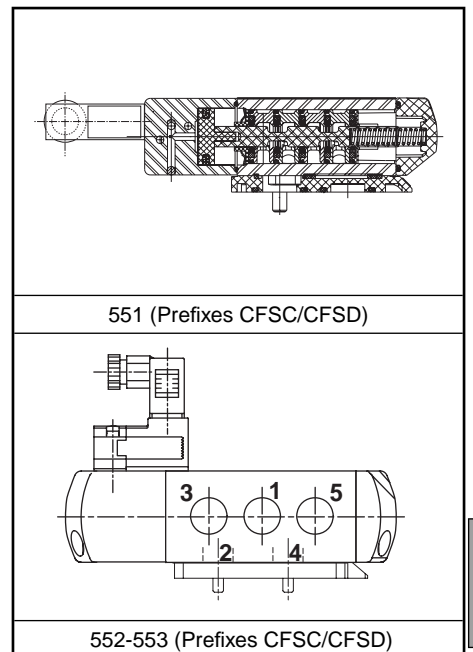
| | |
|---------------------------------------|---|
| Coil insulation class | F |
| Connector (types 05/06) | Spade plug (cable Ø 6 - 7 mm) |
| Connector specification | Type 05: DIN 43650, 9,4 mm, industry standard B Type 06: ISO 15217 / DIN 43650, 8 mm, form C Type 07: M12 (CNOMO E03.62.520.N) Type 08: cable ends (length 0,3 m), EN 60730 IEC 335 |
| Connection | |
| Electrical safety | Moulded IP65 [05/06] or IP67 [07/08] (EN 61729) |
| Electrical enclosure protection | DC (=): 24V AC (~): 24V-115V-230V / 50 Hz (prefixes CFSC/CFSD) |
| Standard voltages | |
| (Other voltages and 60 Hz on request) | |

| prefix option | power ratings | | | | operator ambient temperature ranges (TS) (°C) | voltage | | type ⁽¹⁾ |
|---------------------|--------------------|--------------------|--------------------|--------------------------|---|---------|----|---------------------|
| | inrush ~ | holding ~ | | hot/cold = | | ~ | = | |
| | | (VA) | (VA) | | | | | |
| CFSC | 1,4 | 1,2 | 1,1 | 1/1,2 | -25 to + 60 | 24-115 | 24 | 05-06 |
| | 2,1 | 1,6 | 1,5 | - | -25 to + 60 | 230 | - | |
| | 1,8 ⁽²⁾ | 1,6 ⁽²⁾ | 1,5 ⁽²⁾ | 1,15/1,35 ⁽²⁾ | -25 to + 60 | 24-115 | 24 | |
| CFSD | 2,5 ⁽²⁾ | 2 ⁽²⁾ | 1,9 ⁽²⁾ | - | -25 to + 50 | 230 | - | |
| CFVT ⁽³⁾ | - | - | - | 1,15/1,35 | -25 to + 60 | - | 24 | 07 |
| CFL ⁽³⁾ | - | - | - | - | - | - | - | 08 |

(1) Refer to the dimensional drawings on the following page.
(2) Values with LED indicator and protection, use TPL 21674.
(3) Supplied with LED indicator and protection.

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 (type 05) | connector DIN 43650, 8 mm (type 06) | M12 (type 07) | cable ends (type 08) | maintained man. operator | impulse man. operator | |
| (G) | (mm) | (m³/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..1,9 | 1,2/1,35 | CFSCG551C501 | CFSDG551C501 | - | - | MS | MO | - |
| | | | | | | | - | 1,35 | - | - | CFVTG551C501 | CFLG551C501 | MS | MO | - |
| 3/8 | 12 | 2,49 | 41,5 | 2 | 10 | 10 | 1,1..1,9 | 1,2/1,35 | CFSCG552A501 | CFSDG552A501 | - | - | MS | MO | - |
| | | | | | | | - | 1,35 | - | - | CFVTG552A501 | CFLG552A501 | MS | MO | - |
| 1/2 | 13 | 2,49 | 41,5 | 2 | 10 | 10 | 1,1..1,9 | 1,2/1,35 | CFSCG553A501 | CFSDG553A501 | - | - | MS | MO | - |
| | | | | | | | - | 1,35 | - | - | CFVTG553A501 | CFLG553A501 | MS | MO | - |



G

SPECIFICATIONS

| pipe size | orifice size | flow coefficient Kv | | operating pressure differential (bar) | | | power coil (W) | | catalogue number | | | | options | | |
|--|--------------|---------------------|---------|---------------------------------------|-------------------|----|----------------|----------|---------------------------------------|-------------------------------------|----------------|----------------------|--------------------------|-----------------------|---|
| | | | | | | | | | connector DIN 43650, 9,4 mm (type 05) | connector DIN 43650, 8 mm (type 06) | M12 (type 07) | cable ends (type 08) | maintained man. operator | impulse man. operator | |
| | | | | min. | max. (PS) air (*) | ~ | = | ~/= | | | | | | | = |
| (G) | (mm) | (m³/h) | (l/min) | | | | | | | | | | | | |
| 3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable) | | | | | | | | | | | | | | | |
| 1/4 | 6 | 0,6 | 10 | 2 | 10 | 10 | 1,1..1,9 | 1,2/1,35 | CFSCG551C502 | CFSDG551C502 | - | - | MS | MO | - |
| | | | | | | | - | 1,35 | - | - | CFVTG551C502 | CFLG551C502 | MS | MO | - |
| 3/8 | 12 | 2,49 | 41,5 | 2 | 10 | 10 | 1,1..1,9 | 1,2/1,35 | CFSCG552A502 | CFSDG552A502 | - | - | MS | MO | - |
| | | | | | | | - | 1,35 | - | - | CFVTG552A502 | CFLG552A502 | MS | MO | - |
| 1/2 | 13 | 2,49 | 41,5 | 2 | 10 | 10 | 1,3/1,5 | 1,2/1,35 | CFSCG553A502 | CFSDG553A502 | - | - | MS | MO | - |
| | | | | | | | - | 1,35 | - | - | CFVTG553A502 | CFLG553A502 | MS | MO | - |
| 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..1,9 | 1,2/1,35 | CFSCG551C501SL | CFSDG551C501SL | - | - | - | MO | - |
| | | | | | | | - | 1,35 | - | - | CFVTG551C501SL | CFLG551C501SL | - | 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.: CFSDXG551C505**TPL20674**)
- Straight M12 connector: cable entry Ø4 to 6 mm (catalogue number **88100304**); with 2 m cable length (catalogue number **88100726**); 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, catalogue number **88100344**
- Other pipe threads are available on request
- Plug with visual indication and peak voltage suppression or with cable length of 2m (see Solenoids, Coils & Accessories section)

INSTALLATION

- The solenoid valves can be mounted in any position without affecting operation
- 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.)
- IEC 61508 Functional Safety (suffix SL), allowable temperature range: -40°C to +60°C. For probability of failure, contact us
- Threaded pipe connection identifier is G = G (ISO 228/1)
- Valves with suffix "SL" are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

ACCESSORIES

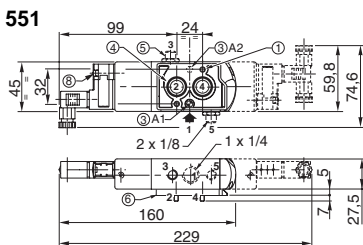
| series | pipe size | exhaust protector (stainless steel) |
|-------------|-----------|-------------------------------------|
| 551 | G 1/8 | 34600418 ⁽¹⁾ |
| 552 | G 3/8 | 34600478 |
| 553 | G 1/2 | 34600479 |
| 551-552-553 | M5 | 34600484 ⁽¹⁾ |

⁽¹⁾ Supplied with suffix "SL".

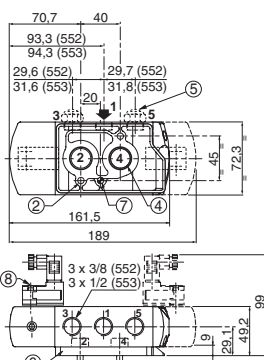
DIMENSIONS (mm), WEIGHT (kg)



TYPE 05-06
Prefixes "CFSC" / "CFSD"
Polyarilamide
IEC 335 / IP65
Type 05: DIN 43650, 9,4 mm
Type 06: DIN 43650, 8 mm



552 - 553



2 mounting holes:

- 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)
- 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)
- One 5 mm dia. hole for dowel pin:
- in position A1: 3/2 NC function plate / - in position A2: 5/2 function plate
- 2 O-ring seals (supplied)
- Exhaust reducer (G 1/8, series 551) or exhaust protector
- Interface plate
- One 6,5 mm dia. hole for dowel pin, position for 3/2 NC or 5/2 function plate
- Manual operator location

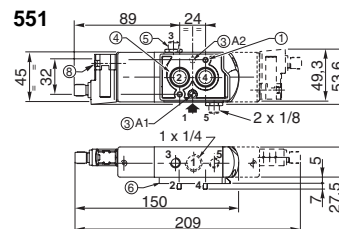
ORDERING EXAMPLES:

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

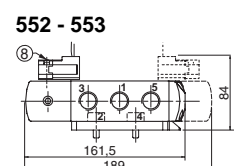
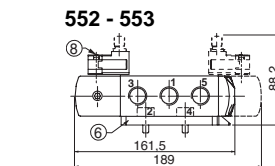
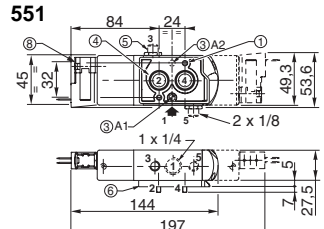
prefix — pipe thread — basic number — voltage — suffix



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



TYPE 08
Prefix "CFL"
Polyarilamide
IEC 335 / IP67
Cable ends 0,3 m



| type | prefix option | weight ⁽¹⁾ | | | | | |
|------|---------------|-----------------------|------|------|----------|------|------|
| | | monostable | | | bistable | | |
| 05 | CFSC | 0,34 | 1,1 | 1 | 0,39 | 2,18 | 2,08 |
| 06 | CFSD | 0,34 | 1,1 | 1 | 0,39 | 2,18 | 2,08 |
| 07 | CFVT | 0,34 | 1,1 | 1 | 0,39 | 2,18 | 2,08 |
| 08 | CFL | 0,33 | 1,09 | 0,99 | 0,38 | 2,16 | 2,06 |

⁽¹⁾ Prefixes CFSC/CFSD: including connector(s).

All leaflets are available on: www.ascojomatic.com