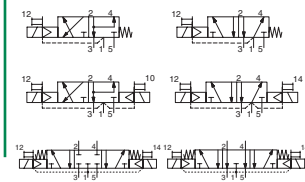




# SOLENOID VALVES

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



3/2-5/2  
5/3  
Series  
551  
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)
- Can be externally piloted (external air pilot supply) to convert valve to zero minimum operation by flipping a gasket
- The monostable spool valves in conformity with IEC 61508 Standard (2010 route 2<sub>H</sub> version) have TÜV (551 series) and EXIDA (551-553 series) certified with integrity levels: SIL 2 for HFT = 0 / SIL 3 for HFT = 1
- The solenoid valves satisfy all relevant EU directives

## GENERAL

Differential pressure  
Flow (Q<sub>v</sub> at 6 bar)

2 - 10 bar [1 bar = 100 kPa]  
l/min (ANR)  
1/4 | 1/2  
700 | 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, anodised                    |
| End cover (spring return)   | Glass fibre filled PA                  |
| Interface plates            | Glass fibre filled PA                  |
| Spool valve internal parts  | Zamak, stainless steel, POM, aluminium |
| Core, core tube and plugnut | Stainless steel                        |
| Core spring                 | Stainless steel                        |
| Top disc                    | PA                                     |
| Pilot seals                 | FPM, NBR                               |
| Shading coil                | Copper                                 |

## OTHERS MATERIALS

Solenoid enclosure Zinc plated steel (epoxy coated)

## ELECTRICAL CHARACTERISTICS

|                                       |  |
|---------------------------------------|--|
| Coil insulation class                 | F  |
| Coil connection                       | Embedded screw terminal (cable ø 7 - 12 mm)                    |
| Cable entry                           | Cable gland, polyamide (PA), M20x1,5                           |
| Electrical safety                     | IEC 335  |
| Electrical enclosure protection       | IP67 (EN 60529)  |
| Standard voltages                     | DC (=) : 24V - 48V<br>AC (~) : 24V - 48V - 115V - 230V / 50 Hz |
| (Other voltages and 60 Hz on request) |  |

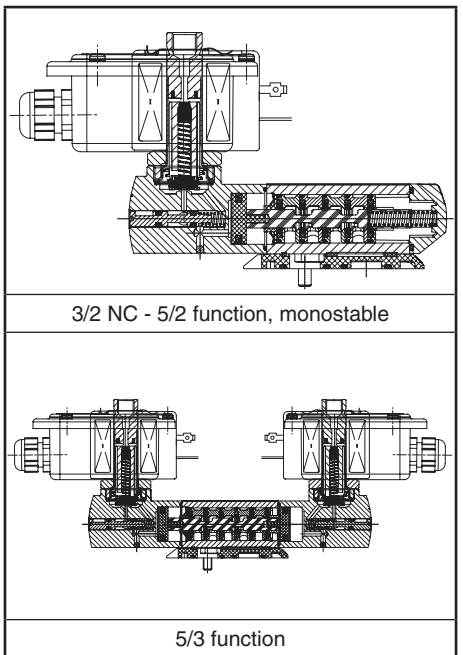
| prefix option | power ratings |               |      |                | operator ambient temperature range (TS) (C°) | replacement coil |         | type <sup>(1)</sup> |
|---------------|---------------|---------------|------|----------------|--|------------------|---------|---------------------|
|               | inrush ~ (VA) | holding ~ (W) |      | hot/cold = (W) |  | ~                | =       |                     |
|               |               | (VA)          | (W)  |                |  |                  |         |                     |
| WP            | 55            | 23            | 10,5 | 9/11,2         | -40 to +75                                   | 230 V/50 Hz      | 24 V DC | 01                  |

<sup>(1)</sup> Refer to the dimensional drawings on the following page

## SPECIFICATIONS

| pipe size  | orifice size | flow coefficient Kv |         | operating pressure differential (bar) |           |    |            | power coil (W) |              | catalogue number |            |                      | options       |   |   |
|--|--------------|---------------------|---------|---------------------------------------|-----------|----|------------|----------------|--------------|------------------|------------|----------------------|---------------|---|---|
|  |              |                     |         | min. <sup>(2)</sup>                   | max. (PS) |    | monostable |                |              | bistable         | 5/3        | impulse / maintained | man. operator |   |   |
|  |              |                     |         |                                       | air (*)   | ~  |            |                |              |                  |            |                      |               | = | ~ |
| G  | (mm)         | (m³/h)              | (l/min) |                                       |           |    |            |                |              |                  |            |                      |               |   |   |
| <b>3/2 NC - 5/2 - Solenoid air pilot operated - spring return, or solenoid air pilot and return</b>                      |              |                     |         |                                       |           |    |            |                |              |                  |            |                      |               |   |   |
| 1/4  | 6            | 0,6                 | 10      | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | WPG551B401   | WPG551B402       | -          | MO                   | -             | - |   |
| 1/2  | 13           | 2,49                | 41,5    | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | WPG553A401   | WPG553A402       | -          | MO                   | -             | - |   |
| <b>3/2 NC - 5/2 - Solenoid air pilot operated spring return (monostable), certified IEC 61508 Functional Safety data</b> |              |                     |         |                                       |           |    |            |                |              |                  |            |                      |               |   |   |
| 1/4  | 6            | 0,6                 | 10      | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | WPG551B401SL | -                | -          | -                    | -             | - |   |
| 1/2  | 13           | 2,49                | 41,5    | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | WPG553A401SL | -                | -          | -                    | -             | - |   |
| <b>5/3 - W1 - pressure held, solenoid air pilot and return</b>   |              |                     |         |                                       |           |    |            |                |              |                  |            |                      |               |   |   |
| 1/4  | 6            | 0,6                 | 10      | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | -            | -                | WPG551B465 | MO                   | -             | - |   |
| 1/2  | 13           | 2,49                | 41,5    | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | -            | -                | WPG553A465 | MO                   | -             | - |   |
| <b>5/3 - W3 - pressure released, solenoid air pilot and return</b>   |              |                     |         |                                       |           |    |            |                |              |                  |            |                      |               |   |   |
| 1/4  | 6            | 0,6                 | 10      | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | -            | -                | WPG551B466 | MO                   | -             | - |   |
| 1/2  | 13           | 2,49                | 41,5    | 0 / 2                                 | 10        | 10 | 10,5       | 11,2           | -            | -                | WPG553A466 | MO                   | -             | - |   |

<sup>(2)</sup> Zero minimum is only achieved if external pressure is applied.



### OPTIONS

- Valves configured for external pilot air supply with ASCO solenoid interface, TPL 20547
- Explosionproof enclosures for use in zones 1/21-2/22, categories 2-3 to ATEX Directive 2014/34/EU ([www.asco.com](http://www.asco.com))
- Compliance with "UL", "CSA" and other local approvals available on request
- Coil insulation class H for max. ambient temperature +80°C, prefix "WPHT"
- 1/2" NPT (prefix "T") and M20 x 1.5 (prefix "ET") conduits (aluminium or 316 SS) available for steel solenoid enclosure
- 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

### INSTALLATION

- The solenoid valves can be mounted in any position without affecting operation
- 3/2 NC-5/2 spool valve supplied with one or two interface plates with NAMUR mating surfaces. Depending on function (3/2 NC or 5/2), position the plate (series 551) or one of the two plates (series 553) 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). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Solenoid enclosure has a cable gland with integral strain relief for cables with an O.D. from 7 to 12 mm and is provided with internal and external grounding terminals
- Valves with suffix "SL" are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

### ACCESSORIES

| series      | pipe size | exhaust protector<br>(stainless steel) |
|-------------|-----------|--|
| 551-553     | G 1/8     | <b>34600418</b> <sup>(1)</sup>         |
| 551 (W1/W3) | G 1/4     | <b>34600419</b> <sup>(1)</sup>         |
| 553         | G 1/2     | <b>34600479</b> <sup>(1)</sup>         |

<sup>(1)</sup> Supplied with suffix "SL"

### ORDERING EXAMPLES:

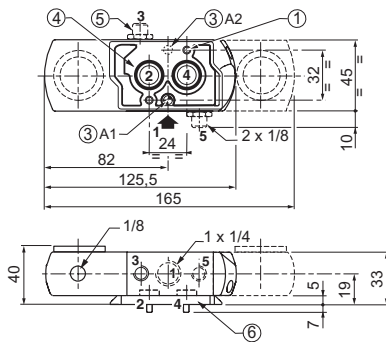
|      |   |     |   |     |                 |
|------|---|-----|---|-----|-----------------|
| WP   | G | 551 | B | 401 | 230V / 50 Hz    |
| WP   | G | 551 | B | 401 | SL 230V / 50 Hz |
| WP   | G | 553 | A | 402 | MO 24V / DC     |
| WPHT | G | 551 | B | 402 | MO 230V / 50 Hz |
| WP   | G | 553 | A | 402 | MO 115V / 50 Hz |

prefix \_\_\_\_\_ voltage \_\_\_\_\_  
 pipe thread \_\_\_\_\_  
 basic number \_\_\_\_\_ suffix \_\_\_\_\_

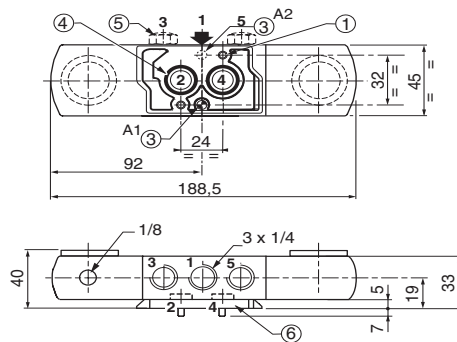
### DIMENSIONS (mm), WEIGHT (kg)



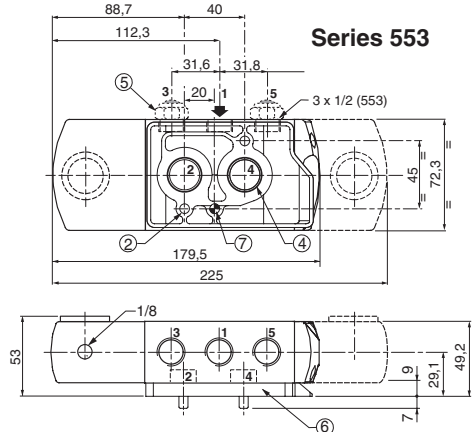
#### Series 551



#### W1 - W3

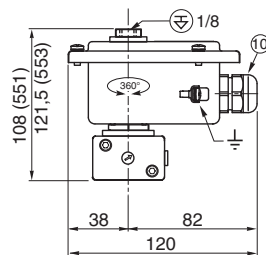
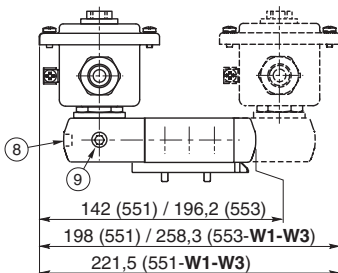


#### Series 553



#### TYPE 01

Prefix "WP" Solenoid  
Metal; epoxy coated  
IEC 335  
IP67



- 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
- ⑦ One 6,5 mm dia. hole for dowel pin, position for 3/2 NC or 5/2 function plate
- ⑧ Manual operator location
- ⑨ External pilot air supply, 1/8 pipe size
- ⑩ Cable gland for unarmoured cable with 7 to 12 mm dia. sheath

| type | prefix option | weight <sup>(2)</sup> |      |          |      |         |      |
|------|---------------|-----------------------|------|----------|------|---------|------|
|      |               | monostable            |      | bistable |      | W1 - W3 |      |
|      |               | 551                   | 553  | 551      | 553  | 551     | 553  |
| 04   | WP            | 0,79                  | 1,57 | 1,33     | 2,14 | 1,43    | 2,14 |

<sup>(2)</sup> Including coil and cable gland.

All leaflets are available on: [www.asco.com](http://www.asco.com)

18 - Direct or Pilot Operated Solenoid Valves (3/2-5/2-5/3)