

# ASCO™ Solenoid Valves

single/dual solenoid (mono/bistable function) - pilot operated  
aluminium body - 1/4" and 1/2" tapped

3/2 NC  
SERIES  
551 - 553

## Features

- 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 spool valves 3/2 NC have threaded port connections
- 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 solenoid valves satisfy all relevant EU directives

## General

Differential pressure  
Flow (Qv at 6 bar)

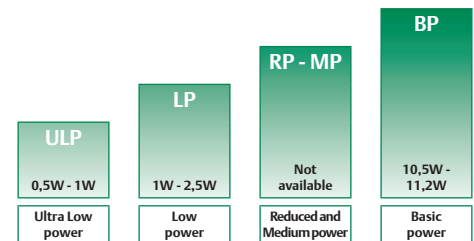
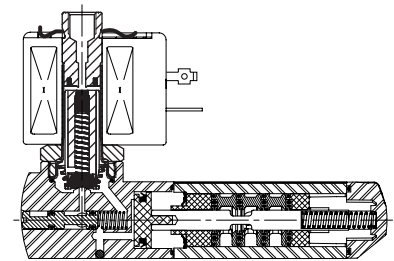
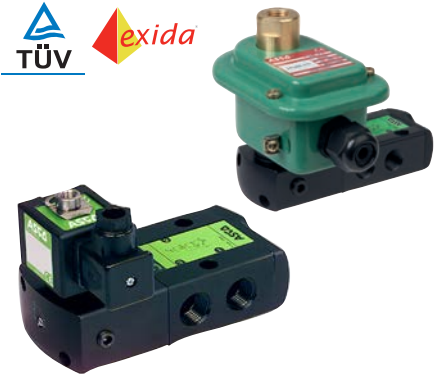
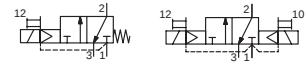
2 - 10,4 bar [1 bar = 100 kPa]  
1/4 = 860 l/min (ANR)  
1/2 = 3800 l/min

| 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                       | Aluminium, black anodised                  |
| End cover (spring return)  | Glass-filled PA                            |
| Spool valve internal parts | Zamak, stainless steel, POM, aluminium     |
| Pilot internal parts       | Refer to specific solenoid catalogue pages |
| Pilot end covers           | Aluminium                                  |
| Core tube                  | Stainless steel                            |
| Core and plugnut           | Stainless steel                            |
| Core spring                | Stainless steel                            |
| Seals                      | NBR                                        |
| Top disc                   | PA                                         |
| Disc holder                | CA                                         |
| Cartridge (low power)      | Welded, stainless steel or aluminium       |
| Seat                       | Brass                                      |
| Seat insert                | CA                                         |
| Shading coil               | Copper                                     |
| Rider rings (low power)    | PTFE (NF/WSNF solenoids only)              |



POWER LEVELS - cold electrical holding values (watt)

## Specifications

| pipe size                                                | orifice size | flow coefficient Kv |         | operating pressure differential (bar) |           |    | power level | prefix optional solenoids |              |       |          |       |       |      |    |                         |  | basic catalogue number |
|----------------------------------------------------------|--------------|---------------------|---------|---------------------------------------|-----------|----|-------------|---------------------------|--------------|-------|----------|-------|-------|------|----|-------------------------|--|------------------------|
|                                                          |              |                     |         | min. <sup>(1)</sup>                   | max. (PS) |    |             | NEMA                      | ATEX / IECEx |       |          |       |       | IP65 |    |                         |  |                        |
|                                                          |              |                     |         |                                       | air (★)   |    |             |                           | 7 & 9        | Ex db | Ex eb mb | Ex mb | Ex ia |      |    |                         |  |                        |
| (❖)                                                      | (mm)         | (m³/h)              | (l/min) |                                       | ~         | =  | ~/=         | EF <sup>(2)</sup>         | LPKF         | NF    | EM       | PV    | LI    | WSLI | SC |                         |  |                        |
| Solenoid air pilot operated - spring return (monostable) |              |                     |         |                                       |           |    |             |                           |              |       |          |       |       |      |    |                         |  |                        |
| 1/4                                                      | 6            | 0,75                | 12,5    | 0 / 2                                 | 10        | 10 | BP          | -                         | -            | ●     | ●        | ●     | -     | -    | ●  | ❖551B405 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | BP          | ●                         | -            | -     | -        | -     | -     | -    | ●  | ❖551H405 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | LP          | -                         | ●            | ●     | ●        | ○     | -     | -    | ●  | ❖551B305 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | LP          | ○                         | -            | -     | -        | -     | -     | -    | -  | ❖551G305 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | ULP         | -                         | ○            | -     | -        | -     | ○     | ○    | -  | ❖551B305 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | ULP         | ○                         | -            | -     | -        | -     | -     | -    | -  | ❖551H305 <sup>(3)</sup> |  |                        |
| 1/2                                                      | 13           | 3,15                | 52,5    | 0 / 2                                 | 10        | 10 | BP          | -                         | -            | ●     | ●        | ●     | -     | -    | ●  | ❖553A405 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | BP          | ●                         | -            | -     | -        | -     | -     | -    | -  | ❖553H405 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | LP          | -                         | ●            | ●     | ●        | ○     | -     | -    | ●  | ❖553A305 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | LP          | ○                         | -            | -     | -        | -     | -     | -    | -  | ❖553G305 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | ULP         | -                         | ○            | -     | -        | -     | ○     | ○    | -  | ❖553A305 <sup>(3)</sup> |  |                        |
|                                                          |              |                     |         |                                       |           |    | ULP         | ○                         | -            | -     | -        | -     | -     | -    | -  | ❖553H305 <sup>(3)</sup> |  |                        |

❖ Select 8 for NPT ANSI 1.20.3 or select G for ISO G (228/1) ● Available feature ○ Available feature in DC only. - Not available

<sup>(1)</sup> Zero minimum is only achieved if external pressure is applied.

<sup>(2)</sup> UL CSA

<sup>(3)</sup> Certified IEC 61508 Functional Safety data, use suffix "SL".

## Specifications

| pipe<br>size                                      | orifice<br>size | flow<br>coefficient<br>Kv |         | operating pressure<br>differential (bar) |           |    | power<br>level | prefix optional solenoids |              |          |       |       |    |      |    |          |  | basic<br>catalogue<br>number |
|---------------------------------------------------|-----------------|---------------------------|---------|------------------------------------------|-----------|----|----------------|---------------------------|--------------|----------|-------|-------|----|------|----|----------|--|------------------------------|
|                                                   |                 |                           |         | min. <sup>(1)</sup>                      | max. (PS) |    |                | NEMA<br>7 & 9             | ATEX / IECEx |          |       |       |    | IP65 |    |          |  |                              |
|                                                   |                 |                           |         |                                          | air (＊)   |    |                |                           | Ex db        | Ex eb mb | Ex mb | Ex ia |    |      |    |          |  |                              |
| (❖)                                               | (mm)            | (m³/h)                    | (l/min) |                                          | ~         | =  | ~/=            | EF <sup>(2)</sup>         | LPKF         | NF       | EM    | PV    | LI | WSLI | SC |          |  |                              |
| Solenoid air pilot operated and return (bistable) |                 |                           |         |                                          |           |    |                |                           |              |          |       |       |    |      |    |          |  |                              |
| 1/4                                               | 6               | 0,75                      | 12,5    | 0 / 2                                    | 10        | 10 | BP             | -                         | -            | ●        | ●     | ●     | -  | -    | ●  | ❖551B406 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | BP             | ●                         | -            | -        | -     | -     | -  | -    | -  | ❖551H406 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | LP             | -                         | ●            | ●        | ●     | ○     | -  | -    | ●  | ❖551B306 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | LP             | ○                         | -            | -        | -     | -     | -  | -    | -  | ❖551G306 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | ULP            | -                         | ○            | -        | -     | -     | ○  | ○    | -  | ❖551B306 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | ULP            | ○                         | -            | -        | -     | -     | -  | -    | -  | ❖551H306 |  |                              |
| 1/2                                               | 13              | 3,15                      | 52,5    | 0 / 2                                    | 10        | 10 | BP             | -                         | -            | ●        | ●     | ●     | -  | -    | ●  | ❖553A406 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | BP             | ●                         | -            | -        | -     | -     | -  | -    | -  | ❖553H406 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | LP             | -                         | ●            | ●        | ●     | ○     | -  | -    | ●  | ❖553A306 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | LP             | ○                         | -            | -        | -     | -     | -  | -    | -  | ❖553G306 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | ULP            | -                         | ○            | -        | -     | -     | ○  | ○    | -  | ❖553A306 |  |                              |
|                                                   |                 |                           |         |                                          |           |    | ULP            | ○                         | -            | -        | -     | -     | -  | -    | -  | ❖553H306 |  |                              |

❖ Select 8 for NPT ANSI 1.20.3 or select G for ISO G (228/1) ● Available feature ○ Available feature in DC only. - Not available

<sup>(1)</sup> Zero minimum is only achieved if external pressure is applied. <sup>(2)</sup> UL CSA

## Prefix table

| prefix |   |   |   |   |   |   | description                                                                   | power level |    |    |    |
|--------|---|---|---|---|---|---|-------------------------------------------------------------------------------|-------------|----|----|----|
| 1      | 2 | 3 | 4 | 5 | 6 | 7 |                                                                               | ULP         | LP | MP | BP |
| E      | F |   |   |   |   |   | Explosionproof - NEMA 7, 9 - Zinc plated steel conduit (18" continuous leads) | ○           | ○  | -  | ●  |
| E      | F | H | T |   |   |   | EF (18" continuous leads) + high temperature                                  | ○           | ○  | -  | ●  |
| E      | F | H | T | L |   |   | EF + high temperature + 72" continuous leads                                  | ○           | ○  | -  | ●  |
| E      | F | L |   |   |   |   | EF + 72" continuous leads                                                     | ○           | ○  | -  | ●  |
| J      | B | E | F |   |   |   | EF + junction box (conduit in 1/2" NPT)                                       | ○           | ○  | -  | ●  |
| J      | B | E | F | M | F |   | EF + junction box (conduit in 1/2" NPT) + surge suppression coils             | ○           | ○  | -  | ●  |
| J      | C | E | F |   |   |   | EF + junction box (conduit in 3/4" NPT)                                       | ○           | ○  | -  | ●  |
| J      | C | E | F | H | T |   | EF + junction box (conduit in 3/4" NPT) + high temperature                    | ○           | ○  | -  | ●  |
| E      | M |   |   |   |   |   | Waterproof IP66/67 - Metal enclosure (EN/IEC 60079-7,-18 and -31)*            | -           | ●  | -  | ●  |
|        |   | E | T |   |   |   | Threaded conduit/hole (M20 x 1,5)                                             | -           | ●  | -  | ●  |
| L      | P | K | F |   |   |   | Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*                            | ○           | ●  | -  | -  |
| N      | F |   |   |   |   |   | Flameproof - Aluminium (EN/IEC 60079-1, 60079-31)*                            | -           | ●  | -  | ●  |
| P      | V |   |   |   |   |   | Encapsulated epoxy moulded (EN/IEC 60079-18)*                                 | -           | ○  | -  | ●  |
| S      | C |   |   |   |   |   | Solenoid with spade plug connector (EN/IEC 60730)                             | -           | ●  | -  | ●  |
| W      | P |   |   |   |   |   | Waterproof IP67 - Metal enclosure                                             | -           | ●  | -  | ●  |
| L      | I |   |   |   |   |   | I.S. with Aluminium IP66/IP67 enclosure (EN/IEC 60079-11+31)*                 | ○           | -  | -  | -  |
| W      | S |   |   |   |   |   | Waterproof IP67 - 316 SS enclosure                                            | -           | ●  | -  | ●  |
| W      | S | L | P | K | F |   | Flameproof 316L SS (EN/IEC 60079-1, 60079-31)*                                | ○           | ●  | -  | -  |
| W      | S | E | M |   |   |   | Waterproof IP66/67 - 316 SS enclosure (EN/IEC 60079-0+7+18+31)*               | -           | ●  | -  | ●  |
| W      | S |   |   | L | I |   | I.S. with 316L SS IP66/IP67 enclosure (EN/IEC 60079-11+31)*                   | ○           | -  | -  | -  |
| W      | S | N | F |   |   |   | Flameproof 316L SS (EN/IEC 60079-1, 60079-31)*                                | -           | ●  | -  | ●  |
|        |   | 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 |                                                           | ULP         | LP  | MP | BP |
|        |   |   | M | O |   |   | Push type manual operator                                 | ○           | ○/● | -  | ●  |
| S      | L |   |   |   |   |   | Certified IEC 61508 Functional Safety data <sup>(2)</sup> | ○           | ○/● | -  | ●  |

## Options & Accessories

| series  | pipe size | exhaust protector (stainless steel) |                         |                         |
|---------|-----------|-------------------------------------|-------------------------|-------------------------|
|         |           | G                                   | NPT                     | (M)                     |
| 551-553 | 1/8       | 34600418 <sup>(3)</sup>             | 34600482 <sup>(3)</sup> | -                       |
| 551     | 1/4       | 34600419 <sup>(3)</sup>             | 34600483 <sup>(3)</sup> | -                       |
| 553     | 1/2       | 34600479 <sup>(3)</sup>             | 34600479 <sup>(3)</sup> | -                       |
| 551     | M5        | -                                   | -                       | 34600484 <sup>(3)</sup> |

● Available feature

○ Available feature in DC only

- Not available

\* ATEX/IECEx valves using these solenoids are approved according to EN ISO 80079-36 (2016) and EN ISO 80079-37 (2016) [non electrical]

<sup>(2)</sup> Not to use with MO suffix

<sup>(3)</sup> Provided with "SL" suffix

## Ordering examples valves:

|      |   |     |   |     |    |              |
|------|---|-----|---|-----|----|--------------|
| SC   | G | 551 | B | 405 |    | 230V / 50 Hz |
| SC   | G | 551 | B | 405 | SL | 230V / 50 Hz |
| SC   | G | 551 | B | 406 | MO | 230V / 50 Hz |
| SCHT | 8 | 551 | B | 406 | MO | 230V / 50 Hz |
| LPKF | G | 551 | B | 305 | MO | 24V / DC     |
| LI   | G | 553 | A | 305 |    | 24V / DC     |
| EM   | 8 | 553 | A | 406 | MO | 230V / 50 Hz |
| EF   | G | 551 | H | 405 | MO | 240V / 60 Hz |

prefix  
pipe thread  
basic number  
voltage  
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 (=) 24V - 48V<br>AC (-) 24V - 48V - 115V - 230V <sup>(1)</sup> /50Hz; other voltages and 60Hz are available on request |

| prefix<br>option      | power ratings |              |               |             | operator<br>ambient<br>temperature<br>range (TS) | safety code                                       | electrical<br>enclosure<br>protection<br>(EN 60529) | replacement coil / kit |             | type<br>(3) |
|-----------------------|---------------|--------------|---------------|-------------|--------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|------------------------|-------------|-------------|
|                       | inrush<br>~   | holding<br>~ | hot/cold<br>= |             |                                                  |                                                   |                                                     | ~                      | =           |             |
|                       | (VA)          | (VA)         | (W)           | (W)         |                                                  |                                                   |                                                     | (C°)(2)                | 230 V/50 Hz |             |
| Basic power (BP)      |               |              |               |             |                                                  |                                                   |                                                     |                        |             |             |
| SC                    | 55            | 23           | 10,5          | 9/11,2      | -40 to +75                                       | EN 60730                                          | IP65, moulded                                       | 400425-117             | 400425-142  | 01          |
| WP/WS                 | 55            | 23           | 10,5          | 9/11,2      | -40 to +75                                       | EN 60730                                          | IP67, steel /SS                                     | 400405-117             | 400405-142  | 03          |
| NF/WSNF               | 55            | 23           | 10,5          | -           | -60 to +25/40/60                                 | II2G Ex db IIC Gb T6/T5/T4, II2D Ex tb IIIC Db    | IP66/67, alu./SS                                    | 400405-117             | -           | 02          |
| NF/WSNF               | -             | -            | -             | 9/11,2      | -60 to +40/60/75                                 | II2G Ex db IIC Gb T6/T5/T4, II2D Ex tb IIIC Db    | IP66/67, alu./SS                                    | -                      | 400405-142  | 02          |
| EM/WSEM               | 55            | 23           | 10,5          | 9/11,2      | -40 to +40                                       | II2G Ex eb mb IIC Gb T3, II2D Ex tb IIIC Db       | IP66/67, steel /SS                                  | 400909-117             | 400913-142  | 03          |
| PV                    | 55            | 23           | 10,5          | 9/11,2      | -40 to +65                                       | II2G Ex mb IIC Gb T3(-)/T4(=), II2D Ex mb IIIC Db | IP67, moulded                                       | -(4)                   | -(4)        | 04          |
| EF                    | 55            | 23           | 10,5          | 9/11,2      | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 05          |
| EFHT                  | 55            | 23           | 10,5          | 9/11,2      | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 05          |
| JBEF                  | 55            | 23           | 10,5          | 9/11,2      | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 11          |
| JBEFHT                | 55            | 23           | 10,5          | 9/11,2      | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 11          |
| 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  | 06          |
| WP/WS                 | 1,5           | 1,5          | 1,5           | 1,7/1,7     | -40 to +60                                       | EN 60730                                          | IP67, steel /SS                                     | 400926-097             | 400926-042  | 08          |
| LPKF/WSLPKF           | 2,4           | 2,4          | 2,4           | -           | -40 to +40/65/80                                 | II2G Ex db IIB+H2 Gb T6/T5/T4, II2D Ex tb IIIC Db | IP66/67, alu./SS                                    | - (4)                  | - (4)       | 12          |
| LPKF/WSLPKF           | -             | -            | -             | 2,1 (5)     | -40 to +40/80                                    | II2G Ex db IIB+H2 Gb T6/T4, II2D Ex tb IIIC Db    | IP66/67, alu./SS                                    | - (4)                  | - (4)       | 12          |
| NF/WSNF               | 1,85          | 1,85         | 1,85          | 1,5/1,8     | -60 to +75/80                                    | II2G Ex db IIC Gb T6/T5, II2D Ex tb IIIC Db       | IP66/67, alu./SS                                    | - (4)(1)               | - (4)       | 07          |
| EM/WSEM               | 1,5           | 1,5          | 1,5           | 1,7/1,7     | -40 to +40/55                                    | II2G Ex eb mb IIC Gb T6/T5, II2D Ex tb IIIC Db    | IP66/67, steel /SS                                  | - (4)                  | - (4)       | 08          |
| PV                    | -             | -            | -             | 1,7/1,7     | -40 to +65                                       | II2G Ex mb IIC Gb T6, II2D Ex mb IIIC Db          | IP67, moulded                                       | -                      | - (4)       | 09          |
| EF                    | -             | -            | -             | 1,8/1,8     | -40 to +60                                       | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 10          |
| EFHT                  | -             | -            | -             | 1,8/1,8     | -40 to +60                                       | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 10          |
| JBEF                  | -             | -            | -             | 1,8/1,8     | -40 to +60                                       | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 11          |
| JBEFHT                | -             | -            | -             | 1,8/1,8     | -40 to +60                                       | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 11          |
| Ultra Low Power (ULP) |               |              |               |             |                                                  |                                                   |                                                     |                        |             |             |
| LPKF/WSLPKF           | -             | -            | -             | 0,5/0,5 (5) | -40 to +60                                       | II2G Ex db IIB+H2 Gb T6, II2D Ex tb IIIC Db       | IP66/67, alu./SS                                    | -                      | - (4)       | 12          |
| EF                    | -             | -            | -             | 0,55/0,7    | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 10          |
| EFHT                  | -             | -            | -             | 0,55/0,7    | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 10          |
| JBEF                  | -             | -            | -             | 0,55/0,7    | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 11          |
| JBEFHT                | -             | -            | -             | 0,55/0,7    | -40 to +52/40                                    | NEMA type 7 and 9                                 | NEMA 4X                                             | -                      | -           | 11          |
| LI (6) (7)            | -             | -            | -             | 0,5/0,5     | -40 to +60                                       | II1G Ex ia IIC T6 Ga, II2D Ex tb IIIC Db (7)      | IP66/67, alu.                                       | -                      | - (4)       | 13          |
| WSLI (6) (7)          | -             | -            | -             | 0,5/0,5     | -40 to +60                                       | II1G Ex ia IIC T6 Ga, II2D Ex tb IIIC Db (7)      | IP66/67, SS                                         | -                      | - (4)       | 13          |

| prefix option                | safety parameters     |                |                |                |                |
|------------------------------|-----------------------|----------------|----------------|----------------|----------------|
|                              | U <sub>i</sub> = (DC) | I <sub>i</sub> | P <sub>i</sub> | L <sub>i</sub> | C <sub>i</sub> |
|                              | (V)                   | (mA)           | (W)            | (H)            | (μF)           |
| <b>Ultra Low Power (ULP)</b> |                       |                |                |                |                |
| LI/WSLI                      | 32                    | 500            | 1,5            | 0              | 0              |

<sup>(1)</sup> (WS)NF: Low Power, 230 V AC does not exist. Maximum voltage in AC is 115 V

<sup>(2)</sup> Temperature range can be limited by sealings

<sup>(3)</sup> Refer to the dimensional drawings on pages: 5 to 8

<sup>(4)</sup> Multiple coil kits are available under ATEX/IECEx, contact us

<sup>(5)</sup> LPKF/WSLPKF: 24 V DC (0,5 W)

<sup>(6)</sup> LI/WSLI: Check the electrical characteristics in the corresponding catalogue pages

<sup>(7)</sup> LI/WSLI: Ultra Low Power, 24 V DC only (LI: For use in zone 0 locations, see the installation conditions given in the I&M instructions)

- Not available

## Electrical connections

| prefix                 | connection                                                                                                       |
|------------------------|------------------------------------------------------------------------------------------------------------------|
| SC                     | 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       | M20 plastics cable gland for cables with an outer diameter from 7 to 12 mm.                                      |
| 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" NPT threaded cable entry. Enclosures are supplied without cable gland                                       |
| EF                     | 1/2" NPT conduits                                                                                                |
| JBEF                   | EF + Junction box                                                                                                |

## Additional options

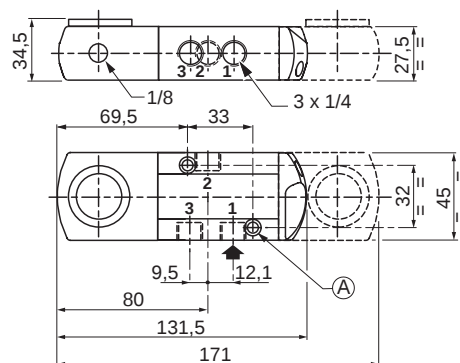
- Valves configured for external pilot air supply, TPL 20547
- Other pipe threads are available on request
- Ex mb (prefix "PV") solenoid can be supplied with various cable lengths

## Installation

- Multi language installation/maintenance instructions are included with each valve
- The solenoid valves can be mounted in any position without affecting operation
- Do not connect the pressure supply to the exhaust port 3. The "environmentally-protected" construction is not adapted for a "distributing" function or use in NO function. Contact us for functions available in specific versions
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. 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)
- Ex db Prefix "NF/WSNF" enclosure is provided with a 1/2" NPT threaded entry hole, M20 x 1,5 (prefix "ET") is optional. These are supplied without cable gland

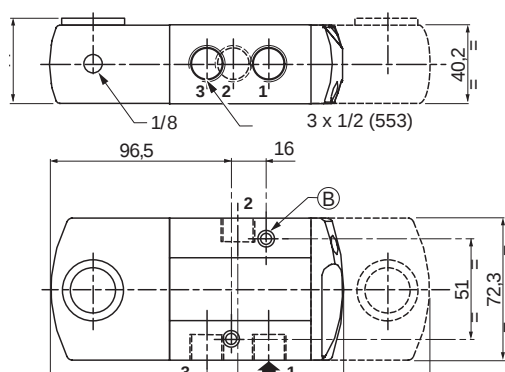
## Dimensions (mm), Weight (kg)

### 551 Series



- (A) 2 mounting holes: 5,3 mm dia.;  
Spotfacing: 9 mm dia., depth 5 mm

### 553 Series



- (B) 2 mounting holes: 6,5 mm dia.;  
Spotfacing: 11 mm dia., depth 6 mm



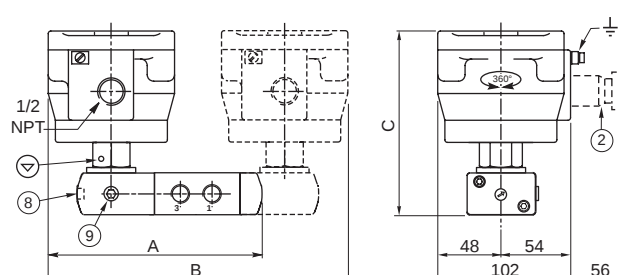
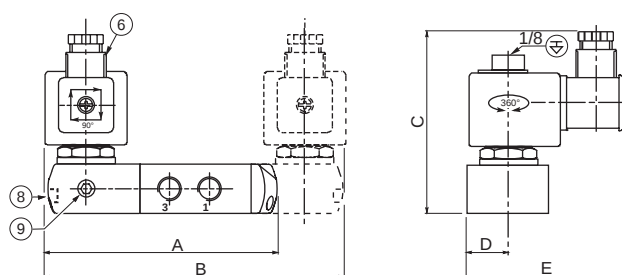
**TYPE 01:**  
Epoxy moulded  
SC: IEC 335 / ISO 4400

551B405 / B406 / B405MO / B406MO  
553A405 / A406 / A405MO / A406MO



**TYPE 02:**  
Aluminium, epoxy coated / AISI 316L SS  
NF / WSNF: EN/IEC 60079-1, 60079-31

551B405 / B406 / B405MO / B406MO  
553A405 / A406 / A405MO / A406MO



# 3/2 NC SERIES 551 - 553

## Dimensions (mm), Weight (kg)



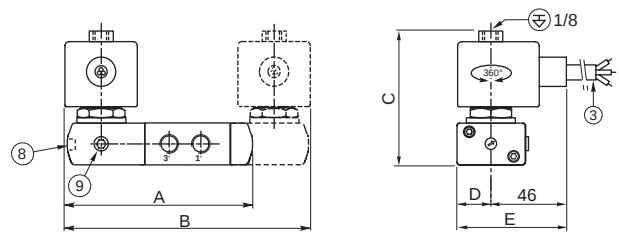
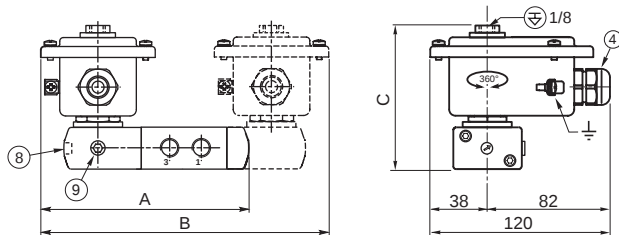
**TYPE 03:**  
Metal, epoxy coated / AISI 316L SS  
WP / WS: IEC 335  
EM / WSEM: EN/IEC 60079-7+18+31

551B405 / B406 / B405MO / B406MO  
553A405 / A406 / A405MO / A406MO



**TYPE 04:**  
Epoxy encapsulated  
PV: EN/IEC 60079-18

551B405 / B406 / B405MO / B406MO  
552A405 / A406 / A405MO / A406MO



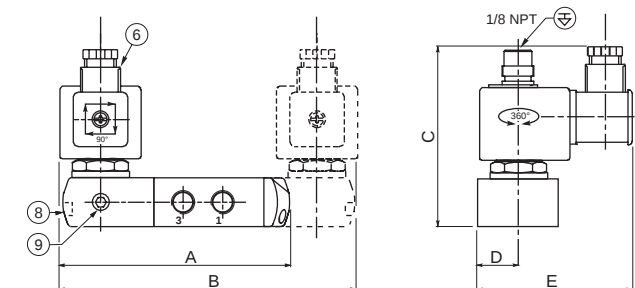
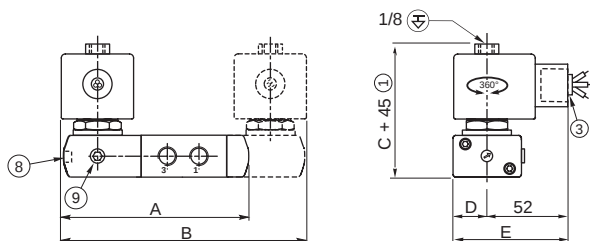
**TYPE 05:**  
Epoxy encapsulated  
EF: NEMA type 7, 9 / ICS-6 ANSI

553H405 / H406 / H405MO / H406MO



**TYPE 06:**  
Epoxy moulded  
SC: IEC 335 / ISO 4400

551B305 / B306 / B305MO / B306MO  
553A305 / A306 / A305MO / A306MO



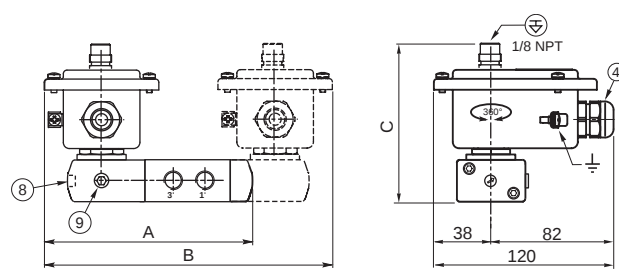
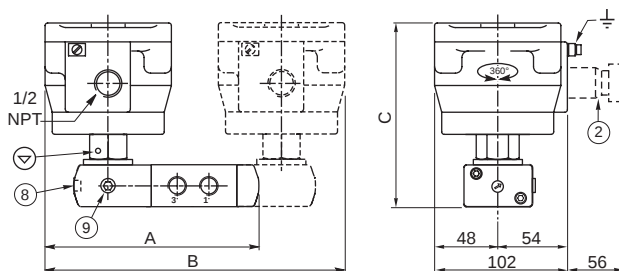
**TYPE 07:**  
Aluminium, epoxy coated / AISI 316L SS  
NF / WSNF: EN/IEC 60079-1, 60079-31

551B305 / B306 / B305MO / B306MO  
553A305 / A306 / A305MO / A306MO



**TYPE 08:**  
Metal, epoxy coated / AISI 316L SS  
WP / WS: IEC 335  
EM / WSEM: EN/IEC 60079-7+18+31

551B305 / B306 / B305MO / B306MO  
553A305 / A306 / A305MO / A306MO

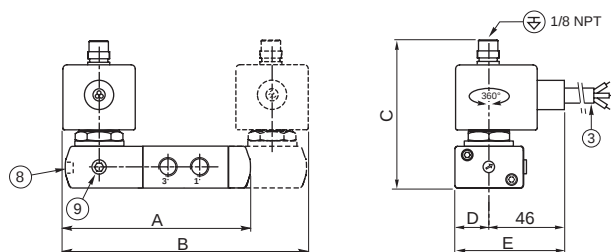


**DIMENSIONS (mm), WEIGHT (kg)**



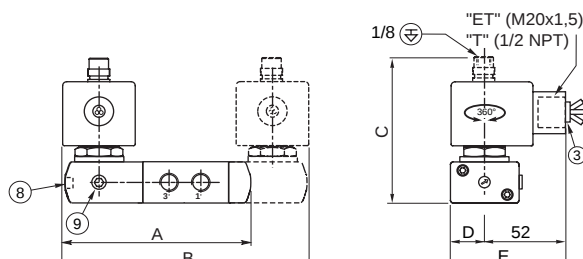
**TYPE 09:**  
Epoxy encapsulated  
PV: EN/IEC 60079-18

551B305 / B306 / B305MO / B306MO  
553A305 / A306 / A305MO / A306MO



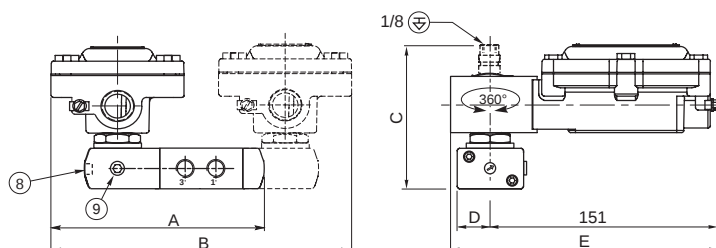
**TYPE 10:**  
Epoxy encapsulated  
EF: NEMA type 7, 9 / ICS-6 ANSI

551G305 / H305 / G306 / H306 / G305MO / H305MO / G306MO / H306MO  
553G305 / H305 / G306 / H306 / G305MO / H305MO / G306MO / H306MO



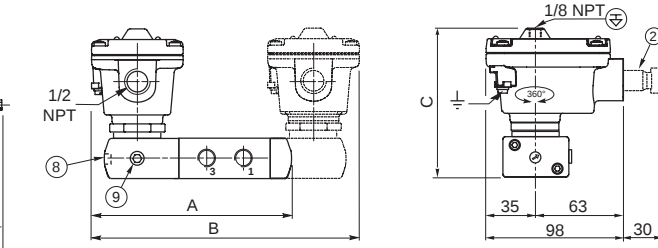
**TYPE 11:**  
Epoxy encapsulated  
JBEP: NEMA type 7, 9

551G305 / H305 / G306 / H306 / G305MO / H305MO / G306MO / H306MO  
553G305 / H305 / G306 / H306 / G305MO / H305MO / G306MO / H306MO



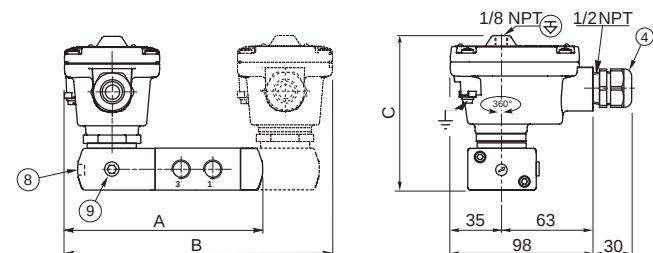
**TYPE 12:**  
Aluminium, cataphoresis black painting / AISI 316L SS  
LPKF/WSLPKF: EN/IEC 60079-1, 60079-31

551B305 / B306 / B305MO / B306MO  
553A305 / A306 / A305MO / A306MO



**TYPE 13:**  
Aluminium, cataphoresis black painting / AISI 316L SS  
LI / WSLI: EN/IEC 60079-11, 60079-31

551B305 / B306 / B305MO / B306MO  
553A305 / A306 / A305MO / A306MO



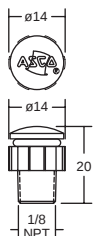
## Dimensions (mm), Weight (kg)

- ② Ex d certified cable gland (on request)
- ③ Three-core cable, length 2 m
- ④ Cable gland for unarmoured cable with 7 to 12 mm dia. sheath
- ⑥ Connector rotatable by 90° increments, cable Ø 6 - 10 mm
- ⑧ Manual operator location, suffix MO
- ⑨ External pilot air supply, 1/8 pipe size
- ⊕ Connectable pilot exhaust port
- ⊖ Non-connectable pilot exhaust port

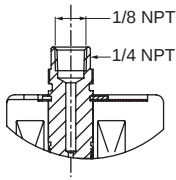
| type | prefix/option | power level   | weight <sup>(1)</sup> |       |     |       |       |       |      |       |      |       |            |      |          |      |
|------|---------------|---------------|-----------------------|-------|-----|-------|-------|-------|------|-------|------|-------|------------|------|----------|------|
|      |               |               | A                     |       | B   |       | C     |       | D    |       | E    |       | monostable |      | bistable |      |
|      |               |               | 551                   | 553   | 551 | 553   | 551   | 553   | 551  | 553   | 551  | 553   | 551        | 553  | 551      | 553  |
| 01   | SC            | BP            | 132                   | 152,5 | 170 | 198   | 102,7 | 112,2 | 22,5 | 36,15 | 86,5 | 100,2 | 0,76       | 1,35 | 1,34     | 1,91 |
| 02   | NF / WSNF     | BP            | 158                   | 197,3 | 224 | 287,6 | 141,8 | 151,3 | -    | -     | -    | -     | 1,85       | 2,39 | 3,51     | 4,05 |
| 03   | WP/WS         | BP            | 148                   | 169,2 | 204 | 231,3 | 103   | 112,5 | -    | -     | -    | -     | 0,84       | 1,36 | 1,49     | 1,93 |
| 03   | (WS)EM        | BP            | 148                   | 169,2 | 204 | 231,3 | 103   | 112,5 | -    | -     | -    | -     | 0,84       | 1,36 | 1,49     | 1,93 |
| 04   | PV            | BP            | 132                   | 152,5 | 172 | 198   | 88    | 97,5  | 22,5 | 36,15 | 67,5 | 81,2  | 0,82       | 1,36 | 1,45     | 1,92 |
| 05   | EF            | BP            | 132,5                 | 156   | 173 | 205   | 85,5  | 95    | 22,5 | 36,15 | 74,5 | 88,2  | 0,64       | 1,36 | 1,29     | 1,93 |
| 06   | SC            | LP            | 132,5                 | 153,5 | 173 | 200   | 101,5 | 111   | 22,5 | 36,15 | 87,5 | 101,2 | 0,97       | 1,56 | 1,55     | 2,16 |
| 07   | NF / WSNF     | LP            | 158                   | 197,3 | 224 | 287,5 | 141,8 | 151,3 | -    | -     | -    | -     | 1,85       | 2,39 | 3,51     | 4,05 |
| 08   | WP/WS/(WS)EM  | LP            | 148                   | 169,2 | 204 | 231,3 | 102,2 | 111,7 | -    | -     | -    | -     | 1,05       | 1,57 | 1,70     | 2,14 |
| 09   | PV            | LP            | 132                   | 152,5 | 172 | 198   | 100,5 | 110   | 22,5 | 36,15 | 67,5 | 81,2  | 1,03       | 1,57 | 1,67     | 2,13 |
| 10   | EF            | LP            | 132,5                 | 156   | 173 | 205   | 100,5 | 110   | 22,5 | 36,15 | 74,5 | 88,2  | 0,85       | 1,57 | 1,50     | 2,14 |
| 11   | JBEF          | BP / LP / ULP | 153,5                 | 174,5 | 215 | 236   | 100,5 | 110   | 22,5 | 36,15 | 176  | 187,5 | 1,32       | 1,84 | 2,44     | 2,88 |
| 12   | LPKF          | LP / ULP      | 141                   | 164,5 | 192 | 222   | 113   | 122,5 | -    | -     | -    | -     | 0,90       | 1,76 | 1,62     | 2,21 |
| 12   | WSLPKF        | LP / ULP      | 141                   | 164,5 | 192 | 222   | 113   | 122,5 | -    | -     | -    | -     | 1,51       | 2,77 | 2,82     | 3,28 |
| 13   | LI            | ULP           | 141                   | 164,5 | 192 | 222   | 113   | 122,5 | -    | -     | -    | -     | 0,91       | 1,77 | 1,63     | 2,22 |
| 13   | WSLI          | ULP           | 141                   | 164,5 | 192 | 222   | 113   | 122,5 | -    | -     | -    | -     | 1,52       | 2,38 | 2,83     | 3,42 |

<sup>(1)</sup> Incl. coil(s) and connector(s).

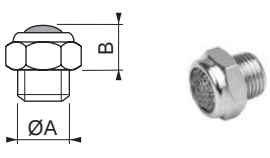
## Accessories



**pilot exhaust protector**  
part number  
276405-001



**pilot top exhaust low power**  
(ASCO solenoid interface)



| ØA | M5  | 1/8 | 1/4 | 3/8 | 1/2 |
|----|-----|-----|-----|-----|-----|
| B  | 4,5 | 10  | 11  | 11  | 14  |

**exhaust protector**  
(stainless steel)