For Combustible Gases, Entry under the disc, Plastic Actuator

2-way, Pressure Operated, Bronze or Stainless Steel Bodies, 3/8" to 2" Tapped

2/2 NC Series 290

Features and Benefits

- Valves for combustible gases with bronze or stainless steel body
- Valve satisfy the Pressure Equipment Directive 2014/68/EU and GAR regulation EU/2016/426 on gas appliances. These valves meet the NF EN 161/A3: 2013, NF EN 16678: 2016 and NF EN 13611 + A2: 2011 standards with EU type examination certificate no.: CERTIGAZ 1312DM6518
- Suitable for Class D, Groupe 2 service, gas families 1, 2 and 3
- Suitable to withstand 150 mbar back pressure
- High flow, with fluid entry under the disc
- High-performance, maintenance-free stuffing box
- Large piloting orifice and low hysteresis permit fast cycles

General

| Fluids | Temperature range (TS) | Disc seal (★) |
|--------------------|------------------------|---------------|
| Gas family 1, 2, 3 | -10°C to +60°C | PTFE |

Differential pressure 0 to 10 bar (0 to 150 psi)[1 bar = 100 kPa] Time for closing / for opening 1 s max. with pilot solenoid valve directly connected to valve actuator

Note: Opening and closing times depend on using pilot valves that meet the requirements in the table below

Pilot fluid

9 bar (135 psi) Max. pilot pressure Min. pilot pressure See page 3

Pilot fluid temperature -10°C to +60°C (14°F to 140°F)

Construction

Thread connection 3/8" to 2" (DN10 to DN50)

Materials of components in contact with fluid

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

| | 2.01.2010.0 | |
|-----------------------|--------------------------|---------------------------|
| Body | Bronze | Stainless steel AISI 316L |
| Stuffing box housing | Brass | Stainless steel AISI 316L |
| Actuator pilot insert | Brass | Brass |
| Stem | Stainless steel AISI 431 | Stainless steel AISI 316L |
| Disc | Brass | Stainless steel AISI 316L |
| Disc seal | PTFE | PTFE |
| Wiper seal | FPM | FPM |
| Stuffing box packing | PTFE | PTFE |
| Valve body seal | PTFE | PTFE |
| | | |

Bronze version



Actuator Glass fiber filled PA Glass fiber filled PA

(32 mm, 50 mm or 63 mm)

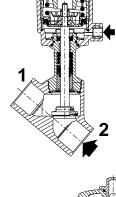
Optical position indicator PA 12 PA 12

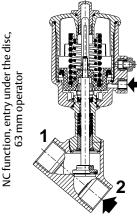






Stainless steel version





290

ASCO™ Pneumatic Angle Seat Valves

Certifications and Approvals

- Pressure Equipment Directive 2014/68/EU
- Functional Safety of Machinery: EN ISO 13849-1
- Reach compliant
- IEC 61508 Standard (2010 route 2_H version) certified with integrity levels: SIL 2 for HFT = 0
- The valves satisfy all relevant EU and EAC directives
- RoHS compatible only for stainless steel valve body

Pilot solenoid valve selection

- Must meet European low voltage directive and electromagnetic compatibility requirements
- 3/2 normally closed with non-locking item

| | Kv (m³/h) min. ⁽¹⁾ through pilot valve required to | | through pilot (ms) | | Pilot valve recommended | | | | | | | | | |
|---------|--|----------------|--------------------|----------------|-------------------------|---------------|---------------|-----------------|--------------------|------------------------------------|-------------------|--|--|--|
| | | | | | | | | 15-DIGIT PR | RODUCT CO | DE | | | | |
| | | | | red to | | | | | | Voltage code | | | | |
| | Close the valve | Open the valve | Close the valve | Open the valve | Designation | Thread type | Brass | Stainless steel | 230 V /50-60 Hz | 110 V /50 Hz (120 V / 60 Hz) | 24 V /50-60 Hz | | | |
| 1 | 356 pil | ot -NC - N | Normally | closed (| without man | ual op | erator) | | | | | | | |
| ZIII/IW | 0.04 | .04 0.04 10 7 | 356 G1/8 Ø1.6 | G | G356C135S19FM | G356C145S19FM | FH | F0 | FQ | | | | | |
| 3 2 | 0.04 | 0.04 | 10 | | 330 0170 01.0 | NPT | 8356C135S19FM | 8356C145S19FM | FH | F0 | FQ | | | |

⁽¹⁾ Including pipe up to main valve.

Options(2)

- Explosive atmospheres, ATEX and IECEx compliant
- Large range of switch boxes certified
- Valve body material composition certificate 3.1 only for stainless stee valve body
- Stroke limiter for opening

2

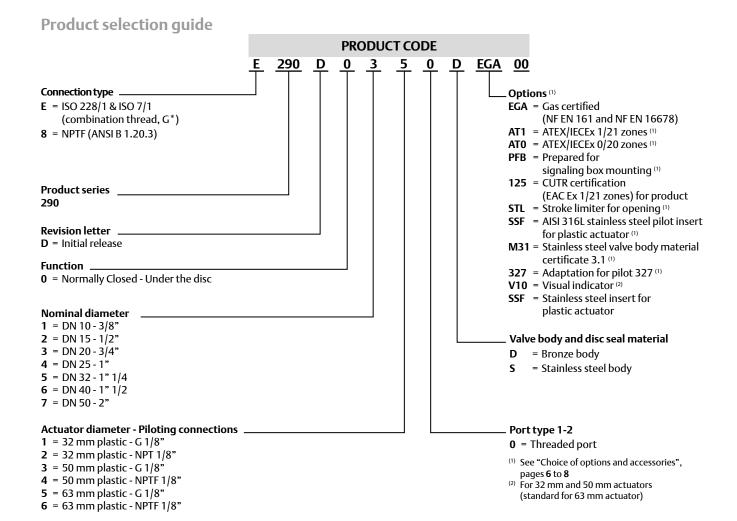
⁽²⁾ See Choice of options and accessories (page 6)

Specifications

| Piping (ISO 670 | B) | | ow iir] | Flow coefficient Kv | Pilot p i | | Operating pressure differential | Actuator diameter | Dimensions / Type ⁽¹⁾ | Catalog | number | |
|--|-------|--------------------|---------------------|---------------------------|------------------|--------------------------------|-----------------------------------|----------------------|-------------------------------------|--------------------------------|-----------------------------------|--|
| Pipe size | DN | (| [1) | (Cv) | (p | | bar (psi) | Act | isic E | | | |
| (G / NPTF) | DIN | m³/h | (l/min) | m³/h (gal/min) | Min. (2) | Max. | Max. | (mm) |) jme | Plastic a | ctuator | |
| | nally | / close | ed, ent | ry under th | ne disc, b | ronze be | ody | | | | | |
| | _ | | | | | | <u> </u> | | | Thread type G* | Thread type NPTF | |
| | | | | | | With G 1/8 piloting connection | With NPTF 1/8 piloting connection | | | | | |
| 1/2" | 15 | 60 | 1000 | 5.8 (6.7) | 4.5 (70) | 9 (135) | 1 (15) | 50 | 02 | E290D0230DEGA00 | 8290D0240DEGA00 | |
| 3/4" | 20 | 130 | 2160 | 10.7 (12.4) | 4.5 (70) | 9 (135) | 1 (15) | 50 | 02 | E290D0330DEGA00 | 8290D0340DEGA00 | |
| 1" | 25 | 180 | 3000 | 15.5 (18) | 4.5 (70) | 9 (135) | 1 (15) | 50 | 02 | E290D0430DEGA00 | 8290D0440DEGA00 | |
| NC - Normally closed. entry under the disc. stainless steel body | | | | | | | | | | | | |
| | | | | | | | | | | Thread type G* | Thread type NPTF | |
| | | | | | | | | | | With G 1/8 piloting connection | With NPTF 1/8 piloting connection | |
| 3/8" | 10 | 30 | 500 | 2.8 (3.2) | 5.5 (80) | 9 (135) | 1 (15) | 32 | 01 | E290D0110SEGA00 | 8290D0120SEGA00 | |
| | | 40 | 660 | 4.1 (4.7) | 5.5 (80) | 9 (135) | 1 (15) | 32 | 01 | E290D0210SEGA00 | 8290D0220SEGA00 | |
| 1/2" | 15 | 60 | 1000 | 5.8 (6.7) | 4.5 (70) | 9 (135) | 1 (15) | 50 | 02 | E290D0230SEGA00 | 8290D0240SEGA00 | |
| | | 60 | 1250 | 5.8 (6.7) | 3.5 (50) | 9 (135) | 1 (15) | 63 | 03 | E290D0250SEGA00 | 8290D0260SEGA00 | |
| | | 75 | 1250 | 6.5 (7.5) | 5.5 (80) | 9 (135) | 1 (15) | 32 | 01 | E290D0310SEGA00 | 8290D0320SEGA00 | |
| 3/4" | 20 | 130 | 2160 | 10.7 (12.4) | 4.5 (75) | 9 (135) | 1 (15) | 50 | 02 | E290D0330SEGA00 | 8290D0340SEGA00 | |
| | | 130 | 2083 | 10.7 (12.4) | 4.5 (75) | 9 (135) | 1 (15) | 63 | 03 | E290D0350SEGA00 | 8290D0360SEGA00 | |
| 1" | 25 | 180 | 3000 | 15.5 (18) | 4.5 (75) | 9 (135) | 1 (15) | 50 | 02 | E290D0430SEGA00 | 8290D0440SEGA00 | |
| • | | 200 | 3330 | 17.7 (20.5) | 4.5 (75) | 9 (135) | 1 (15) | 63 | 03 | E290D0450SEGA00 | 8290D0460SEGA00 | |
| 1 1/4" | 32 | 330 | 5500 | 25.2 (29.2) | 4.5 (75) | 9 (135) | 1 (15) | 63 | 03 | E290D0550SEGA00 | 8290D0560SEGA00 | |
| 1 1/2" | 40 | 350 ⁽²⁾ | 5830 ⁽³⁾ | 38.3 (44.4) | 4.5 (75) | 9 (135) | 1 (15) | 63 | 03 | E290D0650SEGA00 | 8290D0660SEGA00 | |
| 2" | | | 5830 ⁽³⁾ | 51.5 (59.7) | 4.5 (75) | 9 (135) | 1 (15) | 63 | 03 | E290D0750SEGA00 | 8290D0760SEGA00 | |

⁽¹⁾ Air flow rate at $\Delta P = 100 \text{ mb} / 1.5 \text{ psi}$ (except DN40 and DN50) (2) $\Delta P = 60 \text{ mb}$ (0.9 psi) (3) $\Delta P = 40 \text{ mb}$ (0.6 psi)

3



Repair Kits and Service Parts

Angle seat valves (bronze and stainless steel bodies)

| | ø | DN | Spare parts kits no. 50 mm and 63 mm actuators Entry under the disc | | | | |
|-------------------|--------|----|---|--------------------------|--|--|--|
| All body versions | | | Plastic actuator | Stainless steel actuator | | | |
| WIT | 1/2" | 15 | M29054935101500 | M29054935100800 | | | |
| KIT | 3/4" | 20 | M29054935101600 | M29054935100900 | | | |
| | 1" | 25 | M29054935101700 | M29054935101000 | | | |
| | 1 1/4" | 32 | M29054935101800 | M29054935101100 | | | |
| | 1 1/2" | 40 | M29054935101900 | M29054935101200 | | | |
| A. C. | 2" | 50 | M29054935102000 | M29054935101300 | | | |

| View showing the function / actuator / flow direction | | | | | | | | | | | |
|---|---|----------------|--|--|--|--|--|--|--|--|--|
| NC - Normally closed, entry under the disc | | | | | | | | | | | |
| Stainless steel body, plastic actuator | Stainless steel body, plastic actuator Bronze or stainless steel body, plastic actuator | | | | | | | | | | |
| 32 mm actuator | 50 mm actuator | 63 mm actuator | | | | | | | | | |
| | 1 | | | | | | | | | | |

Installation

- Install strainer upstream of valve with a mesh size less than 1.5 mm through which a 1 mm dia. rod cannot pass
- The valves can be mounted in any position without affecting operation
- Adjustable actuator enables 360° access to pilot port
- Pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1
 Thread connection (NPTF) has a standard thread according to ANSI B 1.20.3
- Pilot thread connection (G) or (NPTF) has a standard thread according to ISO 228/1 or ANSI B 1.20.3
- Installation/maintenance instructions in multiple languages are available on our website

Choice of options and accessories

| | NC | | | | | | | | |
|---------|-------------------------------|-----|----------------------------|------|---|---|---|--|--|
| Options | Fluid entry under the disc | cor | tor dia npatibi (mm) | lity | (0 | using the produ | uct configurate | options are selecte or on our website) fic combination co | |
| 0 | | 32 | 50 | 63 | | | | | |
| | | | | | ATEX/IECEX 2/2 valves NC/NO do ATEX-Directive 201 EC type examination IECEX Certificate of Compliance with the been assured by cone Recommended for a second of the sec | 4/34/EU on certificate no. Conformity no. ne Essential Hea opliance with Eu | .: LCIE 20 ATEX : IECEx LCIE 20. Ith and Safety I ropean Standar the chemical, oi | 3037 X .0025X Requirements of th ds ENISO 80079-36 Il, gas and paint coa | e ATEX Directive has and ENISO 80079-37 |
| | | | | | | | Classif | ication (zones) | |
| | | | | | | | C | ategory 1 | |
| | | | | | | Dusts IIIA IIIB IIIC | Gas IIA IIB IIC | Safety | y code |
| | | | | | (C) Tropy | Zone 20 | Zone 0 | | |
| AT0 | • | • | • | • | (Ex) | | GD | | stic iator |
| | | | | | | T*°C | T* | Ts amb | T fluid |
| | | | | | | 135°C | T4 | 60°C | 60°C |
| | | | | | | 100°C 85°C | T5 T6 | 60°C | 60°C 53°C |
| | | | | | | 03 C | 10 | 00 C | |
| | | | | | | ATEX-Directive | 2014/34/EU, c | ategory 2 | |
| | | | | | | | Classif | ication (zones) | |
| | | | | | | | | ategory 2 | |
| | | | | | | Dusts IIIA IIIB IIIC | IIA IIB IIC | Safety | y code |
| | | | | | | Zone 21 | Zone 1 | ⟨ □ II 2G Ex h IIC T⟨ □ II 2D Ex h IIIC T | |
| AT1 | • | | | | Ex IECEX | 20 | GD | | stic iator |
| | | | | | [[] [] | T*°C | T* | Ts amb | T fluid |
| | | | | | | 135°C | T4 | 60°C | 60°C |
| | | | | | | 100°C | T5 | 60°C | 60°C |
| | | | | | | 85°C | T6 | 60°C | 60°C |
| | | | | | | T* = Te Ts amb = An | rface temperatur mperature class nbient temperatu uid temperature | | |

Choice of options and accessories NC (1) When a combination of several options are selected Actuator diameter (using the product configurator on our website) Fluid entry under compatibility the disc you will be provided with a specific combination code Options (mm) 32 50 63 PFB Prepared for signaling box mounting See the dedicated catalogue pages • The signaling box fits on compatible actuators to indicate whether the valve is open or closed Product selection guide - Signaling box **PRODUCT CODE** 2 EGA 00 890 Connection type Piloting voltage P = No piloting connection 00 = No pilot Product series Options (1) **890** = Signaling units for air operated valves **EGA** = EN 161 gas certified V11 = Visualization optimized by LED (360°) Revision letter A = Initial release Enclosure type T = Signaling box Sensor type - Enclosure type. Valve type (290 NC) 1 = Mechanical switch - Plastic/Transparent plastic cover 1 = Plastic actuator 50 mm 2 = Mechanical switch - Stainless steel cover and stainless steel actuators 3 = Mechanical switch - Aluminium cover 50 mm / 63 mm 4 = Inductive switch PNP - Plastic/Transparent plastic cover 2 = Plastic actuator 63 mm 5 = Inductive switch PNP - Stainless steel cover 6 = Inductive switch NPN - Aluminium cover Communication features -7 = Inductive switch NPN - Plastic/Transparent plastic cover **Electrical connection type** 8 = Inductive switch NPN - Stainless steel cover 0 = No communication -9 = Inductive switch NPN - Aluminium cover A = Inductive switch Ex ia NAMUR - PPlastic/Transparent plastic cover Cable gland

Choice of options and accessories

| | NC | | | | |
|---------|-------------------------------|---------------|----|----|--|
| Options | Fluid entry under the disc | compatibility | | | When a combination of several options are selected (using the product configurator on our website) you will be provided with a specific combination code |
| ō | | 32 | 50 | 63 | |
| STL | • | - | • | • | Stroke limiter for opening |
| SSF | • | • | • | • | AISI 316L stainless steel pilot insert for plastic actuator (stainless steel body) |
| M31 | • | • | • | • | Valve body material composition certificate 3.1 (only for stainless steel valve body) |
| V10 | • | • | • | - | Visual position indicator (1) • Visual indication of open or closed position for NC valves with 32 mm or 50 mm actuator (1) Standard indicator for 63 mm actuator |

[•] Available feature

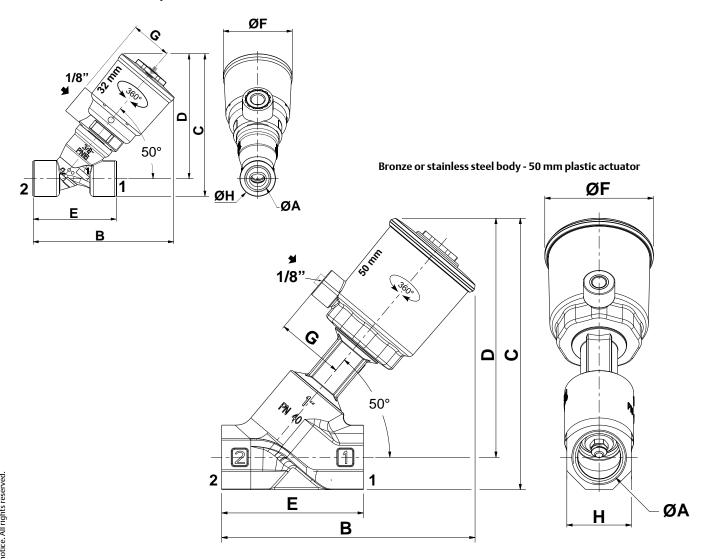
Dimensions mm (inches) □





Stainless steel body - 32 mm actuator

under the disc at 2



| Туре | Actuator diameter | ØA | ØA | | С | D | E | ØF | G | Н | | |
|---------|----------------------|-----------|------|--|--|-------|-------|-------|-------|-------|--|--|
| dianico | diameter | | | | Stainless steel body, plastic actuator | | | | | | | |
| | | G* 3/8" | mm | 94 | 94 | 83 | 55 | 46 | 27 | 24 | | |
| | | NPTF 3/8" | (in) | 3.681 | 3.701 | 3.248 | 2.165 | 1.791 | 1.063 | 0.945 | | |
| 01 | 32 mm | G* 1/2" | mm | 100 | 98 | 85 | 65 | 46 | 27 | 28 | | |
| 01 | 32 111111 | NPTF 1/2" | (in) | 3.937 | 3.858 | 3.327 | 2.559 | 1.791 | 1.063 | 1.083 | | |
| | | G* 3/4" | mm | 108 | 106 | 90 | 75 | 46 | 27 | 32 | | |
| | | NPTF 3/4" | (in) | 4.252 | 4.154 | 3.524 | 2.953 | 1.791 | 1.063 | 1.260 | | |
| | | | | Bronze or stainless steel body, plastic actuator | | | | | | | | |
| | | G* 1/2" | mm | 147.5 | 156.5 | 143 | 65 | 69 | 43 | 27 | | |
| | | NPTF 1/2" | (in) | 5.807 | 6.161 | 5.630 | 2.559 | 2.717 | 1.693 | 1.063 | | |
| 0.7 | 50 mm | G* 3/4" | mm | 151.5 | 160 | 144 | 75 | 69 | 43 | 32 | | |
| 02 | 50 111111 | NPTF 3/4" | (in) | 5.965 | 6.299 | 5.669 | 2.953 | 2.717 | 1.693 | 1.260 | | |
| | | G* 1" | mm | 161 | 172.5 | 152 | 90 | 69 | 43 | 41 | | |
| | | NPTF 1" | (in) | 6.339 | 6.791 | 5.984 | 3.543 | 2.717 | 1.693 | 1.614 | | |

290

ASCO™ Pneumatic Angle Seat Valves

Dimensions mm (inches), Weight kg (Lbs)





TYPE 01/02 + Pilot 356, brass body Coil size 20 mm - Thermoplactic moulded IEC 335 / DIN 43650

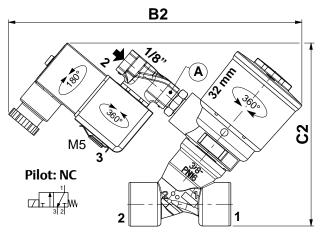


TYPE 01/02 + Pilot 356, stainless steel body Coil size 20 mm - Thermoplactic moulded IEC 335 / DIN 43650

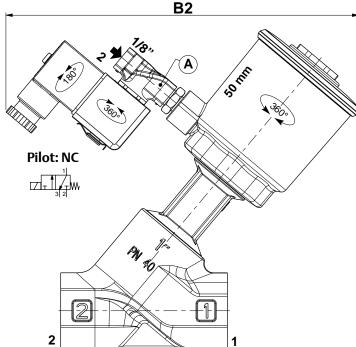
G356C145S19FM

G356C135S19FM

Stainless steel body - 32 mm actuator

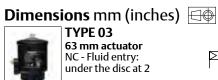


Bronze or stainless steel body - 50 mm plastic actuator



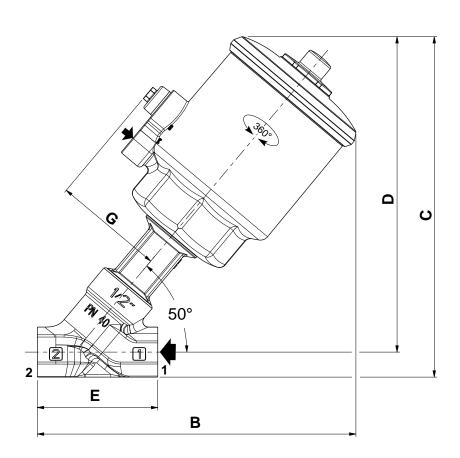
(A) Pilot solenoid valve despatched separately: See page 2

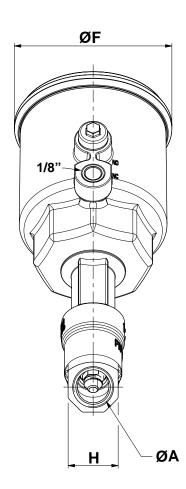
| Туре | Type Actuator diameter | | | B2 | Weight (with pilot) | | | | | |
|------|------------------------|-----------|------|--|------------------------|-----|-------|--|--|--|
| | didiffecei | | | Stai | г | | | | | |
| | | G* 3/8" | mm | 158.5 | 99 | 0.4 | kg | | | |
| | | NPTF 3/8" | (in) | 6.240 | 3.898 | 0.9 | (Lbs) | | | |
| 01 | 22 | G* 1/2" | mm | 158.5 | 103 | 0.5 | kg | | | |
| 01 | 32 mm | NPTF 1/2" | (in) | 6.240 | 4.055 | 1.1 | (Lbs) | | | |
| | | G* 3/4" | mm | 158.5 | 111 | 0.6 | kg | | | |
| | | NPTF 3/4" | (in) | 6.240 | 4.370 | 1.2 | (Lbs) | | | |
| | | | | Bronze or stainless steel body, plastic actuator | | | | | | |
| | | G* 1/2" | mm | 190.5 | - | 0.9 | kg | | | |
| | | NPTF 1/2" | (in) | 7.500 | - | 2.0 | (Lbs) | | | |
| 0.2 | F0 | G* 3/4" | mm | 190.5 | - | 1.0 | kg | | | |
| 02 | 50 mm | NPTF 3/4" | (in) | 7.500 | - | 2.2 | (Lbs) | | | |
| | | G* 1" | mm | 190.5 | - | 1.3 | kg | | | |
| | | NPTF 1" | (in) | 7.500 | - | 2.9 | (Lbs) | | | |





Bronze or stainless steel body - 63 mm plastic actuator





| | | | | | Bronze or stainless steel body Plastic actuator | | | | | | | | |
|------|----------------------|-------------|------|-------|--|-------|-------|-------|-------|-------|--|--|--|
| Туре | Actuator diameter | ØA | | В | С | D | E | ØF | G | н | | | |
| | | G* 1/2" | mm | 172 | 184 | 170.5 | 65 | 85 | 59.5 | 27 | | | |
| | | NPTF 1/2" | (in) | 6.772 | 7.244 | 6.713 | 2.559 | 3.346 | 2.343 | 1.063 | | | |
| | | G* 3/4" | mm | 176 | 187 | 171 | 75 | 85 | 59.5 | 32 | | | |
| | | NPTF 3/4" | (in) | 6.929 | 7.362 | 6.732 | 2.953 | 3.346 | 2.343 | 1.260 | | | |
| | | G* 1" | mm | 185.5 | 199.5 | 179 | 90 | 85 | 59.5 | 41 | | | |
| 02 | 63 mm | NPTF 1" | (in) | 7.303 | 7.854 | 7.047 | 3.543 | 3.346 | 2.343 | 1.614 | | | |
| 02 | 05 111111 | G* 11/4" | mm | 206 | 215.5 | 190.5 | 110 | 85 | 59.5 | 50 | | | |
| | | NPTF 1 1/4" | (in) | 8.110 | 8.484 | 7.500 | 4.331 | 3.346 | 2.343 | 1.969 | | | |
| | | G* 1 1/2" | mm | 206 | 222.5 | 192.5 | 120 | 85 | 59.5 | 60 | | | |
| | | NPTF 1 1/2" | (in) | 8.110 | 8.760 | 7.579 | 4.724 | 3.346 | 2.343 | 2.362 | | | |
| | | G* 2" | mm | 229 | 234.5 | 199.5 | 150 | 85 | 59.5 | 70 | | | |
| | | NPTF 2" | (in) | 9.016 | 9.232 | 7.854 | 5.906 | 3.346 | 2.343 | 2.756 | | | |

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ASCO™ Pneumatic Angle Seat Valves

Dimensions mm (inches), Weight kg (Lbs)





G356C135S19FM

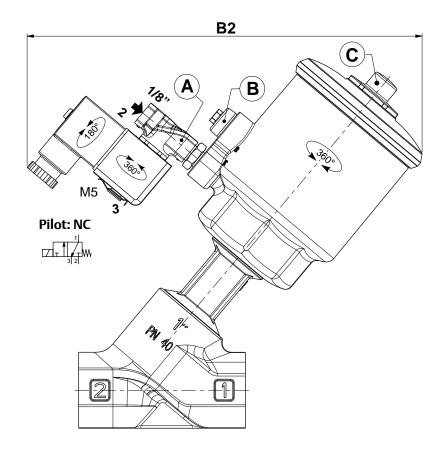
TYPE 03 + Pilot 356, brass body Coil size 20 mm - Thermoplactic moulded IEC 335 / DIN 43650



TYPE 03 + Pilot 356, stainless steel body Coil size 20 mm - Thermoplactic moulded IEC 335 / DIN 43650

G356C145S19FM

Bronze or stainless steel body - 63 mm plastic actuator



- (A) Pilot solenoid valve despatched separately, see on page 2
- (B) Filter-plug (non-removable)
- © Optical position indicator

| | | | | Bronze or stainless steel body Plastic actuator | Weight | | |
|------|-------------------|-------------|------|--|--------------|-------|--|
| Туре | Actuator diameter | ØA | | B2 | (with pilot) | | |
| | | G* 1/2" | mm | 213.2 | 1.1 | kg | |
| | | NPTF 1/2" | (in) | 8.394 | 2.4 | (Lbs) | |
| | | G* 3/4" | mm | 213.2 | 1.2 | kg | |
| | | NPTF 3/4" | (in) | 8.394 | 2.6 | (Lbs) | |
| | | G* 1" | mm | 213.2 | 1.6 | kg | |
| 02 | 63 mm | NPTF 1" | (in) | 8.394 | 3.5 | (Lbs) | |
| 02 | 05 111111 | G* 11/4" | mm | 213.2 | 2 | kg | |
| | | NPTF 1 1/4" | (in) | 8.394 | 4.4 | (Lbs) | |
| | | G* 1 1/2" | mm | 213.2 | 2.6 | kg | |
| | | NPTF 1 1/2" | (in) | 8.394 | 5.7 | (Lbs) | |
| | | G* 2" | mm | 213.2 | 3.4 | kg | |
| | | NPTF 2" | (in) | 8.394 | 7.5 | (Lbs) | |

