

Angle Seat Motor Valve 7310

1 1/2" up to 2 1/2"

Fast and high resolution motorvalve for control and switching of neutral through to highly aggressive media in process engineering, chemical industries and for plant equipment.

- Low operation noise level (quiet operation)
- Control of high differential pressures with small actuators
- Fast stroking speed
- Small dead band
- Smooth start and slow down
- Stainless steel body
- For temperatures from -58°F up to 428°F



Technical Information of the Valve

| | |
|---------------------------------------|---|
| Body material | Stainless steel CF8M |
| Nominal size | 1 1/2" up to 3" |
| Connections: | |
| Pipe threads acc. ISO 228-1 | 1 1/2" - 3" |
| NPT thread | 1 1/2" - 3" |
| Welding ends | 1 1/2" - 2 1/2" |
| Clamp connections | 1 1/2" - 2 1/2" |
| Nominal pressure | 580 psi |
| Media temperature | -22°F up to 392°F, opt. -58°F up to 428°F |
| Viscosity | max. 600 mm ² /s (600 cSt) |
| Vacuum | max. 0.0295 mercury (Hg) |
| Operating pressure packing underneath | max. 175 psi |

Technical Information of the Actuator

| | | |
|--|--|---|
| Driving force | 450 lbf / 1100 lbf | |
| Power connections | 24 V AC/DC 100 - 240 V 50/60Hz | |
| Ambient temperature | Standard: | +14°F up to +140°F |
| | Low temperature version: | -40°F up to +140°F |
| Storage Temperature | Standard: | -22°F up to +176°F (+140°F with Fail-Safe protection) |
| | Low temperature version: | -40°F up to +176°F (+140°F with Fail-Safe protection) |
| Mounting position | choice horizontal or vertical actuator only | |
| Protection class (EN 60529) | IP 67 | |
| Max. power consumption | 40 Watt | |
| Dead band | ±0.2% at min. 0.24" stroke | |
| Repeat accuracy | ±0.1% at min. 0.24" stroke | |
| Stroking speed | 450 lbf-version: | 19 s/inch up to 6350 s/inch (standard 38 s/inch) |
| | 1100 lbf-version: | 51 s/inch up to 6350 s/inch (standard 38 s/inch) |
| Stroking speed of the Fail-Safe protection | 450 lbf-version: | 19 s/inch up to 102 s/inch (standard 38 s/inch) |
| | 1100 lbf-version: | 51 s/inch up to 102 s/inch (standard 38 s/inch) |
| Set point range | adjustable 0(4) - 20 mA, 0(2) - 10 V optional binary input signal (24V DC) | |
| Feed back | adjustable 0(4) - 20 mA, 0(2) - 10 V | |
| cycles (Fail-Safe) | 500.000 | |
| life-time (Fail-Safe) | 10 years | |
| duty cycle | 100% | |
| Self Monitoring | monitoring of the driving power, set point, actuator temperature, temperature of the electronic etc. | |
| Diagnostic function | storage of motor and total service life, temperature- and way classes | |
| Valve adaptation | automatic stroke adjustment to suit valve limits | |
| additional inputs | binary input | |
| additional outputs | 2 alarm outputs | |

Stroking Times

| DN | Stroke in inch | Stroking time (sec.) for the complete stroke at a stroking speed of | | | | |
|--------|-----------------------------|---|-------------|---------------------------|--|----------------------------|
| | | 19.1 s/inch | 25.4 s/inch | 38.1 s/inch | 50.8 s/inch | 101.6 s/inch |
| 1 1/2" | 0.9 | 18 | 24 | 36 | 48 | 96 |
| 2" | 0.9 | 18 | 24 | 36 | 48 | 96 |
| 2 1/2" | 0.9 | 18 | 24 | 36 | 48 | 96 |
| 3" | 0.9 | 18 | 24 | 36 | 48 | 96 |
| | for controlcone linear 100% | | | Standard 450 lbf-actuator | min. stroking time for 1120 lbf-actuator | Standard 1120 lbf-actuator |

= Standard

Admissible Differential Pressures

| driving force | seating seal Nominal size | pmax [bar] | | | | | |
|-----------------------------------|------------------------------|------------|--------|------------------|--------|------------------|--------|
| | | PTFE | | PEEK-7 (T<320°F) | | PEEK-8 (T>320°F) | |
| | | Control | On/Off | Control | On/Off | Control | On/Off |
| 450 lbf | 1 1/2" | 230 | 230 | 115 | 115 | 200 | 200 |
| | 2" * | 145 | 145 | 50 | 50 | 120 | 120 |
| | 2 1/2" * | 72 | 72 | - | - | 65 | 65 |
| | 3" * | 50 | 50 | - | - | 36 | 36 |
| 1120 lbf | 1 1/2" | - | - | 245 | 330 | 245 | 330 |
| | 2" * | - | - | 215 | 215 | 245 | 360 |
| | 2 1/2" * | - | - | 145 | 145 | 200 | 200 |
| | 3" * | - | - | 94 | 94 | 145 | 145 |
| 450 lbf pressure balanced version | 1 1/2" | 245 | 580 | 245 | 580 | 245 | 580 |
| | 2" * | 245 | 580 | 245 | 580 | 245 | 580 |
| | 2 1/2" * | 245 | 360 | 245 | 360 | 245 | 360 |
| | 3" * | 245 | 360 | 245 | 360 | 245 | 360 |

*reinforced design

Cvs-values

| Characteristic | linear | | | | equal percentage | | | |
|----------------|--------|------|--------|-------|------------------|----|--------|----|
| | 1 1/2" | 2" | 2 1/2" | 3" | 1 1/2" | 2" | 2 1/2" | 3" |
| 100 % | 31.3 | 42.9 | 60.3 | 80 | 29 | - | - | - |
| 40 % | 12.8 | - | - | - | 11.6 | - | - | - |
| On-Off | 40.6 | 52.2 | 92.8 | 129.9 | | | | |

Options

| | |
|------------------------------------|---|
| 2 additional stroke limit switches | free adjustable volt free contacts (open/close) |
| Fail safe protection | Mounted in own body at actuator Safety position freely selectable |
| Communication software | with communication link, for parametrization and diagnosis of the actuator |
| Bluetoothmodul BT-1 | Wireless connection to DeviceConfig configuration software (upgrade option) |

Actuator with Fail-Safe protection (Option)

- Safety function at power failure
- Power supply via high performance capacitors
- Safety position open, closed or in every other position selectable
- Automatic monitoring of the charge condition of the capacitors



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Ordering Number System

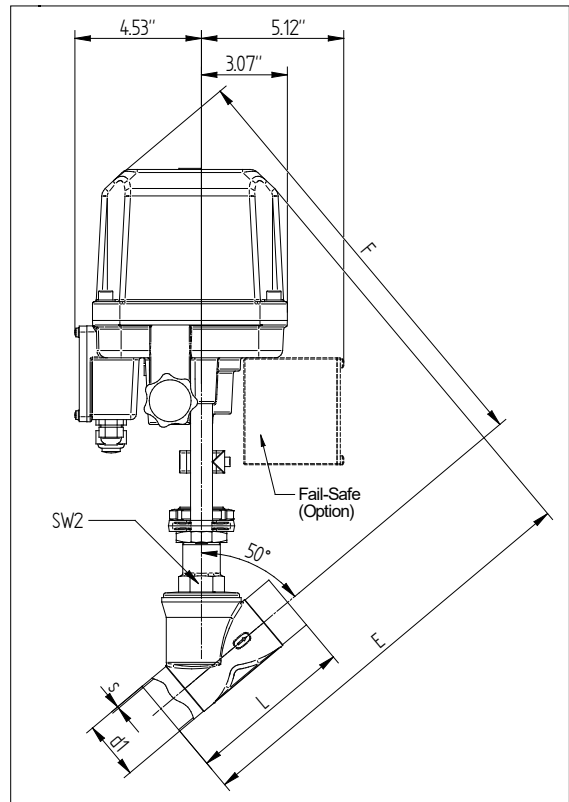
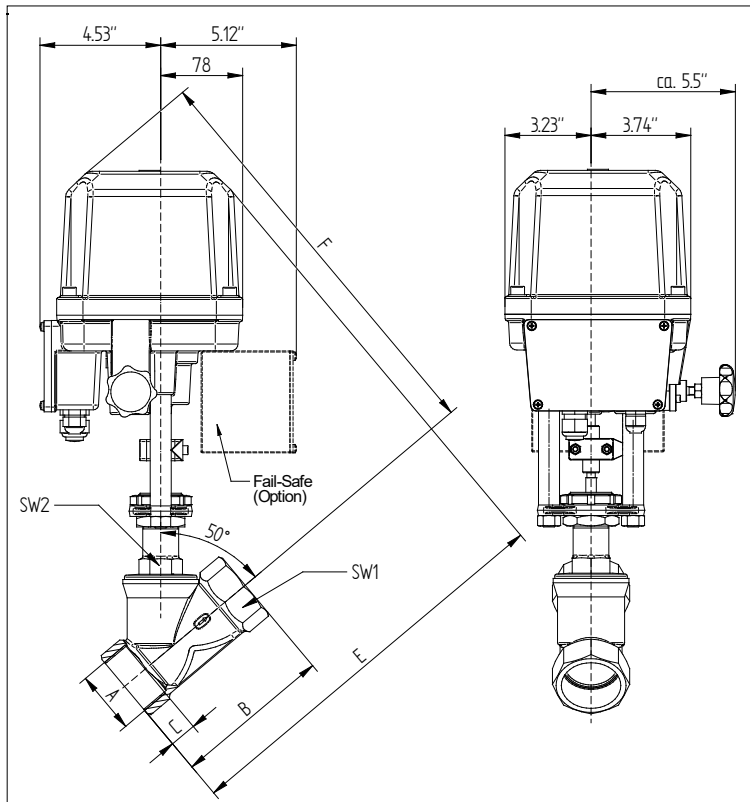
| | | Article number | | | | | | | | | |
|---|--|----------------|---|--|--|---|---|---|---|---|---|
| | | 7310/ | | | | | | | | | |
| Nominal size: | | | | | | | | | | | |
| 1 1/2" (DN 40) | | 040 | | | | | | | | | |
| 2" (DN 50) | | 050 | | | | | | | | | |
| 2 1/2" (DN 65) | | 065 | | | | | | | | | |
| 3" (DN 80) | | 080 | | | | | | | | | |
| Item: | | | | | | | | | | | |
| Valve | | V | | | | | | | | | |
| Upper part | | U | | | | | | | | | |
| Actuator | | A | | | | | | | | | |
| Body design: | | | | | | | | | | | |
| Angle bodied | | | 1 | | | | | | | | |
| Connection: | | | | | | | | | | | |
| NPT thread | | | | | | 5 | | | | | |
| BSP thread | | | | | | 0 | | | | | |
| With welded ends acc. DIN 11850-series 2 | | | | | | D | | | | | |
| With welding ends acc. ISO | | | | | | H | | | | | |
| Body material: | | | | | | | | | | | |
| Stainless steel | | | | | | | 2 | | | | |
| Seating seal: | | | | | | | | | | | |
| PTFE | | | | | | | | 0 | | | |
| FKM (Viton) | | | | | | | | 1 | | | |
| EPDM | | | | | | | | 2 | | | |
| NBR | | | | | | | | 3 | | | |
| Actuator: | | | | | | | | | | | |
| without actuator | | | | | | | | | 0 | | |
| 450 lbf, position electronic, IP67 , activation: 4-20mA or 2-10V, feedback 4-20mA or 2-10V | | | | | | | | | | A | |
| 1120 lbf, position electronic, IP67 , activation: 4-20mA or 2-10V, feedback 4-20mA or 2-10V | | | | | | | | | | | B |
| Motor Voltage | | | | | | | | | | | |
| 100 - 240V, 50/60Hz | | | | | | | | | | - | |
| 24V AC/DC | | | | | | | | | | | 1 |
| Control plug: | | | | | | | | | | | |
| none | | | | | | | | | | | - |
| linear 100% | | | | | | | | | | | 1 |
| equal percentage 100% | | | | | | | | | | | 2 |
| linear 40% | | | | | | | | | | | 3 |
| Special versions: | | | | | | | | | | | |
| See following positions | | | | | | | | | | | S |
| Pressure balanced version | | | | | | | | | | | P |
| Safety position | | | | | | | | | | | |
| without safety position | | | | | | | | | | | - |
| Fail Safe Function: Safety position closed in the case of power failure | | | | | | | | | | | 1 |
| Fail Safe Function: Safety position opened in the case of power failure | | | | | | | | | | | 2 |
| Fail Safe Function: position in case of power failure according to customer specification | | | | | | | | | | | 3 |
| Stroking times | | | | | | | | | | | |
| Standard (38s/inch) | | | | | | | | | | | - |
| 19 (s/inch) | | | | | | | | | | | 1 |
| 38 (s/inch) | | | | | | | | | | | 2 |
| 51 (s/inch) | | | | | | | | | | | 3 |
| 102 (s/inch) | | | | | | | | | | | 4 |
| 508 (s/inch) | | | | | | | | | | | 9 |

ordering example: 7310/040V1520A-1
 Angle seat valve with motor actuator, DN 40, PN 10/40, NPT thread, stainless steel,
 linear actuator 2 kN, 100-240V 50/60 Hz, control cone 100% linear

Dimensions and Weights

Body with threaded connection G/NPT

Body with welded ends DIN/ISO



| DN | A G / NPT | B G / NPT | C | | L DIN/ISO | ISO | | DIN | | SW1 | SW2 |
|----------|--------------|--------------|------|------|--------------|-------|-----|-------|-----|-------|------|
| | | | G | NPT | | d1 | s | d1 | s | | |
| 1 1/2" | 1 1/2" | 264.6 | 47.2 | 40.8 | 264.6 | 106.5 | 5.8 | 90.4 | 3.4 | 121.3 | 66.2 |
| 2" * | 2" | 330.7 | 56.7 | 41.9 | 330.7 | 133 | 6.4 | 116.9 | 3.4 | 150 | 79.4 |
| 2 1/2" * | 2 1/2" | 396.9 | 66.6 | 56.3 | 396.9 | 167.8 | 6.4 | 154.4 | 4.5 | 187.4 | 90.4 |
| 3" | 3" | 471.8 | 73.9 | 60.5 | - | - | - | - | - | 220.5 | 90.4 |

| DN | E | | F | | weight with 450 lbf-actuator lbs | | weight with 1120 lbf-actuator lbs | |
|----------|-------|-------|-------|-------|-------------------------------------|-------------------|--------------------------------------|--------------------|
| | 2kN | 5kN | 2kN | 5kN | without Fail-Safe | with Fail-Safe | without Fail-Safe | with Fail- Safe |
| 1 1/2" | 798.1 | 842.2 | 840 | 890.7 | 21.7 | 25.4 | 23.6 | 27.4 |
| 2" * | 826.8 | 870.9 | 844.4 | 899.5 | 23.9 | 27.6 | 25.8 | 29.6 |
| 2 1/2" * | 870.9 | 912.8 | 873.1 | 926 | 27.8 | 31.6 | 29.8 | 33.6 |
| 3" | 981.1 | 1023 | 868.7 | 919.4 | 32.5 | 36.2 | 34.4 | 38.2 |

*: reinforced version

dimensions in inch