

# F-001

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## SERIES F-001, F-011, F-021

### DIRECT-OPERATED CONTROL VALVES

- Flow up to approx. 50 l<sub>n</sub>/min
- Pressure up to 64/100/200 bar
- Kv-max:  $6.6 \times 10^{-2}$



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#### Low Flow Control Valves for Gases

Control valves F-001 / F-011 are suitable for low flow rates (up to approx. 50 l<sub>n</sub>/min N<sub>2</sub>-equivalent) with pressure ratings up to 64 resp. 100 bar. The F-001 valve module is also used as pilot valve in bigger valves and controllers. F-021 is a direct acting control valve for high pressure applications, up to 200 bar.

## Technical specifications

### Measurement / control system

Operating temperature	F-001AV / F-011AV / F-021AV: -10...+70°C F-001AI / F-011AI / F-021AI: -10...+70°C F-001AX / F-011AX: -10...+65°C
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Max. Kv-value	F-001 series: $6,6 \times 10^{-2}$ F-011 series: $6,6 \times 10^{-2}$ F-021 series: $1,56 \times 10^{-3}$
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Leak integrity, outboard	tested $< 2 \times 10^{-9}$ mbar l/s He
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### Mechanical parts

Material (wetted parts)	stainless steel 316L/320; other on request
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Pressure rating (PN)	F-001 series: 64 bar(a) F-011 series: 100 bar(a) F-021 series: 200 bar(a)
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Max. $\Delta P$	contact distributor (depends on Kv-value)
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Process connections	compression type or face seal (VCR/VCO) couplings
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Seals	$< 100$ bar: standard: Viton®; options: EPDM, Kalrez® (FFKM), FDA and USP Class VI approved compounds $> 100$ bar: Viton
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Protection class	F-001AV / F-011AV / F-021AV: IP40 F-001AI / F-011AI / F-021AI: IP65 F-001AX-XBB / F-011AX-XBB: II 1 G/D Ex ia IIC T6 F-001AX-XCB / F-011AX-XCB: II 2 G/D Ex e mb T4
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Plunger	$< 100$ bar: standard: Viton®; options: EPDM, Kalrez® (FFKM), FDA and USP Class VI approved compounds $> 100$ bar: Viton
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### Electrical properties

Supply voltage	IP40 / IP65 style: 15 Vdc or 24 Vdc; Ex-proof coil XBB: max. 28 Vdc/110 mA; Ex-proof coil XCB: max. 24 Vdc
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Valve control signal	0... 185 mA
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Coil resistance	IP40 / IP65 style: 62 Ohm; Ex-proof coil XBB: 295 Ohm; Ex-proof coil XCB: 65 Ohm (at 20°C)
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De-energized position	Standard: Normally closed; Option: Normally opened
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Electrical connection	IP40 coil: shielded cable; IP65 coil: DIN 43650 connection; Ex-proof coils: cable gland M20x1,5
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Technical specifications subject to change without notice.

For dimensional drawings and hook-up diagrams please visit the [product page](#) on our [website](#)

## Related products



**SERIES F-033, F-042**

**Vary-P Control Valves**

Flow up to approx. 100 l/min  
Pressure up to 400/700 bar  
For high (differential) pressures applications



**SERIE F-002A, F-003A, F-003B**

**Pilot-Operated Control Valves**

Flow up to approx. 500 m<sup>3</sup>/h  
Pressure up to 64/100 bar  
Kv: 0.04...6.0



**SERIES F-004A, F-004B**

**Bellows Valves with Pressure Compensation**

Flow up to approx. 1000 l/min  
For low (differential) pressure applications  
Kv: 0.03...1.0



## FLOW-ADJUST SERIES

**Manual operated valves**

Flow up to 40 l/min  
Standard or high resolution  
Kv:  $9.0 \times 10^{-2}$



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