Series F-033, F-042

Vary-P Control Valves



High Pressure Control Valves for Gases

F-033 / F-042 are 2-phase control valves for applications with high differential pressures, up to 350 bar and a maximum operating pressure of 350 resp. 650 bar! These unique valves feature a pressure compensation mechanism, maintaining a constant pressure difference of 4 bar across the flow control section. By doing so both the inlet pressure and the outlet pressure may change without having any impact on the Vary-P valve function.

Technical specifications

Measurement / control system

Operating temperature	F-033C: -1070℃
	F-033CI / F-042CI: -1070°C
	F-033CX: -1065°C

Mechanical parts

Material (wetted parts)	stainless steel 316L or comparable
Pressure rating (PN)	F-033 series: 350 bar(a) F-042 series: 650 bar(a)
Min. ΔP	6 bar(d)
Max. ΔP	up to 350 bar(d)
Process connections	F-033 series: compression type or face seal (VCR/VCO) couplings; F-042 series: none (female thread); special high pressure connections on request
Seals	standard: Viton®; on request (F-033 series only): EPDM, Kalrez®
Protection class	F-033C: IP40 F-033CI / F-042CI: IP65 F-033CX-XBB: II 1 G/D Ex ia IIC T6 F-033CX-XCB: II 2 G/D Ex e mb II T4

Electrical properties

Electrical connection

Control valve options

External actuator options to be connected to the controller

Ex-proof specifications

Approvals / certificates

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-001, F-011, F-021

Direct-operated control valves

Flow up to approx. 50 In/min Pressure up to 64/100/200 bar Kv-max: 6.6 x 10⁻²



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

Pilot-Operated Control Valves

Flow up to approx. 500 m3n/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 In/min For low (differential) pressure applications Kv: 0.03...1.0



Bronkhorst High-Tech designs and manufactures innovative instruments and subsystems for low-flow measurement and control for use in laboratories, machinery and industry. Driven by a strong sense of sustainability and with many years of experience, we offer an extensive range of (mass) flow meters and controllers for gases and liquids, based on thermal, Coriolis and ultrasonic measuring principles. Our global sales and service network provides local support in more than 40 countries. Discover Bronkhorst[®]!