

EX4-EX8 Electrical Control Valve

EX Valves & Controls

R-410A

The EX4-EX8 are stepper motor driven valves that are optimized for the control of liquid or gaseous mass flow in refrigeration systems. Multifunction capability as expansion valve, hot gas bypass, suction gas throttling, head pressure, liquid line actuator and other applications systems.

Features

- Fully hermetic design
- Fast full stroke time
- Applicable to all common refrigerants (HCFC, HFC), for subcritical CO₂ applications
- High resolution and excellent repeatability
- Bi-flow versions for heat pump applications
- Positive shut-off function to eliminate the use of an additional solenoid valve
- Linear flow capacity
- Wide capacity range (10 - 100%)
- Continuous modulation of mass flow, no stress (liquid hammering) in the refrigeration circuit
- Direct coupling of motor and valve for high reliability (no gear mechanism)
- Ceramic slide and port for accurate flow and minimal wear
- Balanced force design
- Corrosion resistant stainless steel body, and connections



Specifications

- CE marking: EX4/EX5: not required
EX6-EX8: required, Cat I, Module A
- MOPD: EX4-EX7: 505 psid, EX8: 435 psid
- MWP: 650 psig
- Ambient temperature: -40°F to +130°F
- Humidity: 5 to 95% R.H.
- External leakage: ≤ 0.1 oz/yr (R-22)
- Stepper motor type: Bi-polar, phase current by chopper control (constant current)
- Electrical connection: 4 pin terminal via plug
- Driver supply voltage: Recommended: 24 VDC
Range: 18-36 VDC
- Phase current (operating): EX4-EX6: 500 mA max
EX7: 750 mA
EX8: 800 mA
- Holding current: EX4-EX6: 100 mA
EX7: 250 mA
EX8: 500 mA
- Nominal input power per phase: EX4-EX6: 3.5W
EX7-EX8: 5W
- Phase inductance: EX4-EX6: 30 mH ±25%
EX7: 20 mH ±25%
EX8: 22 mH ±25%
- Step mode: 2 phase full step
- Step angle: 1.8° per step ±8%
- Total number of steps: EX4-EX6: 750 full steps
EX7: 1600 full steps
EX8: 2600 full steps
- Stepping rate: 500 Hz
- Winding resistance per phase: EX4-EX6: 13 ohm ±10%
EX7: 8 ohm ±10%
EX8: 6 ohm ±10%
- Full travel time: EX4-EX6: 1.5 seconds
EX7: 3.2 seconds
EX8: 5.2 seconds

Valve Type	Inlet x Outlet (ODF)	B	C	D	E	H1	H2
EX4-I21	3/8" x 5/8"	0.3	1.8	2.2	0.4	4.4	1.0
EX5-U21	5/8" x 7/8"	0.4	2.2	2.6	0.6	4.4	1.0
EX6-I21	7/8" x 1-1/8"	0.6	2.6	3.0	0.7	4.4	1.0
EX7-I21	1-1/8" x 1-3/8"	0.8	3.1	3.2	0.9	6.2	1.7
EX8-I21	1-5/8" x 1-5/8"	0.8	3.1	3.1	0.8	7.9	2.2

Dimensional Data (in)

