

Electrically-Controlled Valve

***Fujikin is thrilled to announce a breakthrough
in advanced process gas delivery control.
Introducing the world's first Electrically Controlled Valve (ECV)
for semiconductor manufacturing equipment.***

Blistering Speed

The ECV has a close-to-open response time of only 3.5 ms, and an open-to-close response time of 5 ms. That's more than **seventeen times faster** than that of the fastest conventional, pneumatically-actuated valve's response time of 60 ms. This next level of precise gas control promotes tighter tolerances and ensures a higher level of final product reliability and repeatability.

Electrically-Actuated — No Air Required!

Driven exclusively by an electric signal, the ECV does not require pneumatic tubing and eliminates the need for actuation solenoid valves. One simple electrical connection to the ECV Drive Unit is all that's needed!

Once there is no need for air-actuated valves, the following problems are eliminated:

- Slow response and delays due to the inherent gas transfer properties of air actuation
- Overshoot
- Inaccurate and tedious gas delivery time calculations
- Variables such as temperature, regulated air pressure fluctuations, air-line leaks, and number of valves actuated simultaneously

Intuitive and Flexible Control

The standard ECV Drive Unit can operate up to eight ECV's simultaneously and independently from each other using a standard switched input. Furthermore, the power supply range is 100 VAC to 240 VAC, eliminating the need for special power supplies.

Unsurpassed Leak Integrity

Outboard and inboard leak integrity — as well as leakage across the seat — is orders of magnitude better than industry standards at an ultra-tight 5×10^{-12} Pa·m³/sec (5×10^{-11} acc/sec). This value covers standard interfaces such as W-Seal Surface-Mount, tube stub, and male or female UJR type.

Our Focus is on Safety and Dependability

Fujikin's primary focus on all products manufactured has always been the safety of personnel and equipment. This is why we exceed the industry's minimum safety requirements — both in product life and performance — by more than the MTTF (mean time to failure) industry standard. The ECV also offers an extra level of safety by mechanically closing in the unlikely event of a power failure.

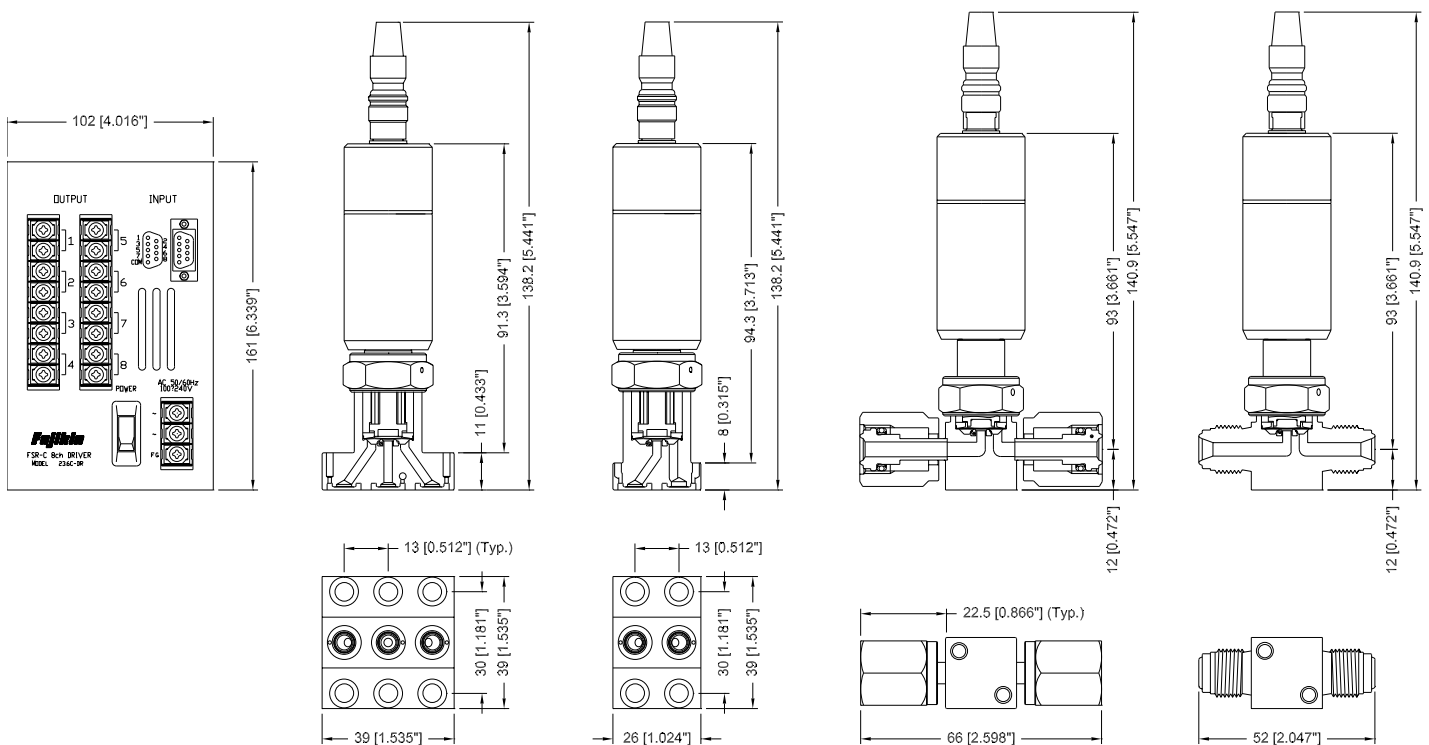


Specifications and Technical Data



Pressure Rating	1 MPa	142 psig
Design Pressure	1 MPa	142 psig
Operating Temperature	-10°C to 80°C	14°F to 176°F
Nominal Diameter	6.35 mm O.D.	1/4" O.D.
C_v Value	0.1 (N ₂ at 20°C)	
External Leakage Rate	5x10 ⁻¹² Pa·m ³ /sec	5x10 ⁻¹¹ acc/sec
Seat Leakage Rate	5x10 ⁻¹² Pa·m ³ /sec	5x10 ⁻¹¹ acc/sec
Surface Roughness	0.7 μm Ra	3 μin Ra
Particle Generation	Less than 0.1 particles per cycle	
Ion Contaminants (NO ₃ ⁻ , PO ₄ ³⁻ , SO ₄ ²⁻ , Na ⁺ , K ⁺)	Less than 10 ng/cm ²	
Body	Stainless Steel 316L Double-Melt	
Bonnet	Stainless Steel 316	
Seat	PCTFE	
Diaphragm	Nickel Alloy	
Stem	Stainless Steel 316	
Actuator	Aluminum Alloy	
Interfaces	UJR Face Seal Tube Stub 1.5" W-Seal Surface Mount	

Dimensional Information



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