

# Latch Valves



Valcor Engineering Corporation

## DESCRIPTION

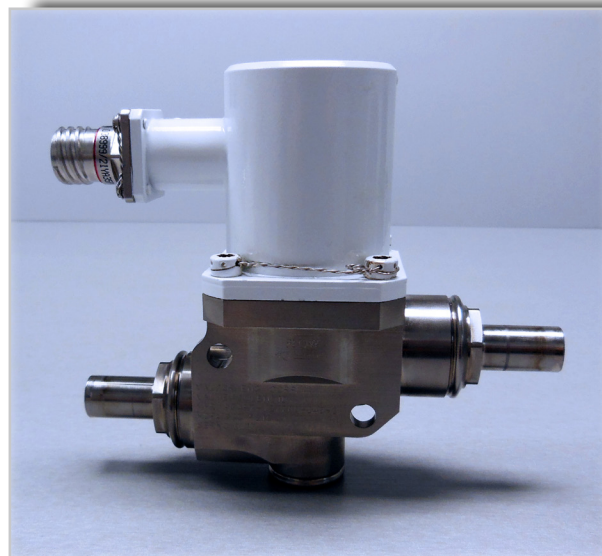
Latch solenoid valves are bi-stable solenoid valves that employ a permanent magnet to hold the valve open. In normal solenoid valve design, the coil is energized to open (or close) the valve, and a spring returns the sealing element to its normal position when the coil is deenergized. A latch solenoid valve employs a coil as well, but a permanent magnet becomes part of the magnetic flux field that actuates the valve. The magnet holds the valve open without power applied. A latch valve coil is pulsed to change the valve state from closed to open, and pulsed again to close it. In some designs, two coils are employed to eliminate the need to reverse polarity. Other dual-coil designs provide a redundant back up in the event the primary coil is inoperative.

## APPLICATION

Latch valves are perfect for battery-powered applications where the available power is limited and a normal solenoid valve would consume substantial power reserves. Satellites, spacecraft and launch vehicles which may be solar powered and backed up by battery are prime applications for latching solenoid valves such as propellant and oxidizer for thrust valves.

## FEATURES

- Consume minimal power to control the flow of gases and liquids
- Fast acting, low response time
- Short pulse duration of <100 ms
- Pilot operation allows for higher flows and higher pressures
- No heat generated during actuation
- Fully customizable for your application.



Contact us today to see how we can help on your next project.

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Valcor specializes in custom designs. Below are just a few examples of solutions we have created in the past for our customers.

## EXAMPLES

Examples	Operating Fluid	Operating Pressure	Flow Rate (ESEO)	Weight (lb)	Body Material
V27700-185-W	H <sub>2</sub> O <sub>2</sub> , GN <sub>2</sub> /MMH, MON-3, GHe, GN <sub>2</sub>	935 psig	.280	3.4	316/Titanium
V27200-1050-W	Krypton, Argon, Xenon Gas, GN <sub>2</sub> , GHe	4500 psig	.015	0.45	Cres
V27200-588-W	H <sub>2</sub> O <sub>2</sub> , Xenon Gas, MMH, NTO, N	3485 psig	.090	1.81	Titanium
V27200-990-W	He, N, diH <sub>2</sub> O, IPAr	450 psig	.072	2.0	Cres
V27200-809-8-W	n-Heptane, MeOH, HD, GLY, PrOH	60 psig	.010	0.9	Cres
V100000-345-W	Jet Fuel	104 psig	.868	3.25	Cres
V27200-986-1-W	GN <sub>2</sub> , GHe, Ar, diH <sub>2</sub> O, IPA	203 psig	.010	1.0	Cres
V27200-818-1-W	GHe, GN <sub>2</sub> , GH <sub>2</sub>	4500 psig	.035	1.15	Cres/Titanium