Standalone Pressure/Volume Controllers
ePVC Series

Mobile Control Application

Small, Medium, and Large Volume Models

The ePVC Series of Standalone Pressure / Volume Controllers provide independent control of pressure or flow for a variety of applications. These controllers are electromechanical and only require standard 100-240 VAC, 50/60 Hz power for operation - no hydraulic power is needed! GCTS offers pressure/volume controllers rated for ultra high pressure up to 1 GPa (150,000 psi).

The ePVCs feature closed-loop servo-control of the pressure or volume. They include large volume capacities and strokes with direct, integrated transducers for precise volume measurements. This prevents gear backlash and control errors caused by motor encoders commonly found in other systems.

These controllers are ideal for the control of confining pressure in triaxial tests, head pressure in permeability tests, fluid flow or pressure in hydro-fracture tests, or even the axial load in long-term creep tests. They can also be used for any industrial process where precise programming of pressure or flow rate is required.

The ePVCs can also be used to measure flow in permeability tests or measure volume change in triaxial tests while applying the prescribed pressure.

Standard ePVC models have wetted parts made of stainless steel for use with oil or water. The Medium and Large series can alternatively be made of Hastelloy for use with brine or other corrosive fluids. Aluminum models are also available for use exclusively with hydraulic oil.

GCTS also offers continuous-flow models for use when a pause to recharge the intensifier is unacceptable. Since there is no pause at the end of each intensifier's stroke, true continuous flow is provided.

A front panel keypad is provided to easily set any desired pressure or flow rate manually. The ePVCs also include interface programs for PC and mobile devices (iOS, Android and Windows) to remotely set pressures or flow rates. Multiple units can be linked through our CATS software for simultaneous control as required by triaxial, hydro-fracturing, creep, and other testing applications.

The ePVCs also include six analog input channels with data acquisition that can be programmed to record external sensors.

GCTS TESTING SYSTEMS

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High Pressure Series

Stainless Steel Model	Hastelloy Model (Corrosive fluids)	Nominal Pressure (MPa)	Nominal Volume (cc)	Resolution (cc)	*Max. Flow Rate (cc/min)	Dimensions (L x W x H) m
ePVC-210L	ePVC-210L-H	210	98	0.0004	29	0.7 x 0.4 x 1.4
ePVC-140L	ePVC-140L-H	140	160	0.0006	47	
ePVC-110L	ePVC-110L-H	110	200	0.0008	59	
ePVC-70L	ePVC-70L-H	70	289	0.0011	85	
ePVC-35L	ePVC-35L-H	35	650	0.0025	192	

Medium Pressure Series

Stainless Steel Model	Hastelloy Model (Corrosive fluids)	Nominal Pressure (MPa)	Nominal Volume (CC)	Resolution (cc)	*Max. Flow Rate (cc/min)	Dimensions (L x W x H) m
ePVC-70M	ePVC-70M-H	70	43	0.0002	45	0.6 x 0.4 x 0.9
ePVC-35M	ePVC-35M-H	35	97	0.0004	102	
ePVC-23M	ePVC-23M-H	23	146	0.0006	153	
ePVC-20M	ePVC-20M-H	20	173	0.0007	181	
ePVC-14M	ePVC-14M-H	14	236	0.0009	246	

Low Pressure Series

Stainless Steel Model	Nominal Pressure (MPa)	Nominal Volume (CC)	Resolution (cc)	*Max. Flow Rate (cc/min)	Dimensions (L x W x H) m
ePVC-5S	5.0	157	0.001	236	0.4 x 0.3 x 0.6
ePVC-4S	4.0	205	0.001	309	
ePVC-3S	3.5	260	0.001	391	
ePVC-2S	2.0	425	0.002	638	
ePVC-1S	1.0	823	0.003	1,236	

Additional Specifications (all models)

- **Ultra high pressure capacity available up to 1 GPa (150,000 psi)**
- **Two (2) external ADC input channels with excitation and selectable input range**
- **Four (4) external ADC input channels with ± 10 VDC fixed range**
- **24-bit Sensor Input Resolution**
- **TCP/IP Communication**
- **Power Requirements: 100-240 VAC, 50/60 Hz @ 1 KVA, single phase**
- **GCTS offers backup battery packs for uninterrupted ePVC operation**

***Max Flow Rate is rated at 5% of rated pressure. Max flow rate is reduced with increased pressures.**