



**BELLOFRAM**<sup>®</sup>  
*Precision Controls*

**OEM/Industrial Products**

# Precision Air Regulators



## T10

The Marsh Bellofram Type 10 Air Pressure Regulator is designed to control output pressure with accuracy of 0.1% and high-repeatability, with very low sensitivity to changes in supply pressure, ambient temperature and flow.

### Features:

- Highly Accurate Pressure Regulation to 0.1%
- Start-up Stability, Allowing Regulated Pressure to Return to Output Setting
- Automatic High Downstream Relief Capacity
- High-gain Pneumatic Servo Amplifier Regulates Wide Fluctuations in Flow



## T40

The Type 40 Air Pressure Regulator is a reliable adjustable air pressure regulator, designed for instrumentation and general purpose use. Test data for the Type 40 shows excellent performance characteristics in such areas as regulated pressure vs. flow, forward-to-reverse flow offset, supply pressure sensitivity, repeatability and stability, among others.

Careful design and selection of quality construction materials throughout ensure long, trouble-free operation, including diecast aluminum housings, finished with scratch- and weather-resistant vinyl paint. A rubberized, soft-seat valve stem provides positive shut-off, and forgives dirt or other foreign matter.

### Features:

- Sensitivity: 1" Water Column (2.5 cm)
- Low Droop at High Flow
- Multiple Mounting Options



## T110

The Type 110 Large Forward and Exhaust Flow Air Pressure Regulator combines the proven technology of the Type 10 regulator with the large pneumatic booster of the Type 79 Relay. The result is a precise, crisply responding regulator that can achieve very large forward and exhaust flows. Forward to reverse flow offset is minimized by the capsule operated, servo-control system located in the upper portion of the regulator. This servo-control system supplies a pilot pressure to the large integral pneumatic booster. The large supply and exhaust orifices of the integral booster enable this regulator to produce very high forward and exhaust flow rates. Few regulators can offer this combination of sensitivity and large flow capacity.

### Features:

- Highly Accurate Pressure Regulation
- Large Port Sizes Available – 3/8, 1/2, 3/4 and 1 NPT (BSPP and BSPT also Available)
- Adjustment Stem Locking Capability
- High Forward Flow Capacity – 150+ SCFM



## T50

The Marsh Bellofram Type 50/Type 50 NACE Precision Filter Air Set Regulators are reliable, precision filter air set pressure regulators, designed for instrumentation and general purpose use in both standard (Type 50) and corrosive environments (Type 50 NACE). The Type 50 NACE complies with NACE material requirement MRO175 for sulfide stress cracking-resistant metallic materials for oil field equipment. The rugged design and construction of the Type 50 includes the incorporation of die cast aluminum housings that are finished with vinyl paint for added protection against scratching, weathering and other challenging environments.

### Features:

- Integral 40 Micron, Self-Cleaning Filter
- Low Droop at High Flow
- Several Mounting Options
- Meets ATEX II 2 G Dc T 6 (Non-electrical Certification)

## T51FR



Type 51 High-Performance Low-Cost Precision Air Regulator offers a high-performance in a compact, low-cost package, offering output pressure ranges to 100 PSIG; 6.9 BAR (120 PSIG; 8.3 BAR in T-51FR Corrosive Tec & T51FRWT). Maximum supply pressure is 250 PSI (17.3 BAR). Materials of construction for standard Type 51 Series Regulators: Die cast aluminum for the body and dripwell; glass-reinforced thermoplastic polyester for the bonnet; acetal resin for the internals; BUNA-N for the diaphragm, gaskets and O-ring, fluorocarbon for the pintle seat, and aluminum for the drain valve (plated steel handle).

### Features:

- Wide Temperature Range model designed to work between -40° and +185° F (T51FRWT)
- Fluorocarbon pintle seat (Type 51FR, Type 51AFR & Type 51FRCT)
- Auto drain option (Type 51AFR)
- Low Droop
- No brass components

## T52



The Type 52SS NACE compliant stainless steel gas pressure regulators and filter regulators are designed for service with a wide variety of corrosive gas environments. They are offered with the industry's widest range of available port sizes, from ¼" to 1" NPT special construction features include 316 SS housing and filter assemblies, with nitrile elastomers used for the control diaphragm and the supply valve. This ruggedly built regulator operates in pressure ranges up to 150 PSIG (10.3 BAR). The Type 52SSFR and T52SSAR Regulators and the T52SSF and T52SSAF filter assemblies have built-in dripwells which trap water, oil and other contaminant's.

### Features:

- Industry's widest range of port sizes, from ¼" to 1" NPT
- Low droop
- Excellent stability and repeatability
- Tapped vent for exhaust gas capture

## T70



The Marsh Bellofram Type 70 High-Flow Air Pressure Regulator is expressly designed for applications requiring substantial flow capacity of up to 80 SCFM (2250 LPM) and accurate pressure controls. Downstream pressure can be set within 0.25 in. (6.3mm) of water column and is accurately maintained under varying conditions via an aspirator tube which adjusts air supply in accordance with flow velocity. A balanced supply valve, utilizing a patented Bellofram rolling diaphragm design, minimizes output pressure variation caused by changes in supply pressure, and offers millions of cycles.

### Features:

- High Flow Capacity – Up to 80 SCFM (2266 LPM)
- Responds Quickly to Minute Changes in Downstream Pressure
- Dampening Action of Aspirator Tube Maintains Downstream Pressure
- Honking & Buzzing Eliminated By Action of Integral Baffle and Aspirator Tube

## T77



The Type 77 Vacuum Pressure Regulator from Bellofram PCD incorporates a fixed negative 15 PSIG bias spring to maintain vacuum outputs down to 29" Hg. An adjustable opposing range spring increases controlled pressure outputs up to 150 psig. Output pressure droop under varying downstream flow conditions is minimized by use of an aspirator tube which adjusts the air supply valve opening in accordance with flow velocity. A balanced supply valve, utilizing a reinforced rolling diaphragm, minimizes output pressure variation caused by changes in supply pressure. Stack-up construction makes the Type 77 easily serviceable, without removing it from the air line.

### Features:

- Single-unit control of pressures from 29" Hg vacuum to 150 PSI
- Flow capacity up to 40 SCFM
- Dampening action of aspirator tube maintains stable output pressure
- Can be disassembled and serviced without removing from line

## Precision Air Relays

### T75



The Marsh Bellofram Type 75 and Type 75HR Pneumatic Air Relays use signal pressure to accurately control output pressure over a wide range of flow and supply pressure variations. Under these varying flow conditions, output pressure is maintained by use of an aspirator tube, which adjusts the air supply valve opening in accordance with flow velocity. A balanced supply valve, utilizing a patented Bellofram rolling diaphragm, minimizes output pressure variation caused by changes in supply pressure, with reliable operation over millions of cycles.

### T79



Type 79 1:1 ratio high-flow precision pneumatic (air) relays are designed for applications where precise flow control is required. The Type 79 can achieve flow rates of well over 200 SCFM (5695 LPM). Use of a balanced pintle design allows the Type 79 to accurately control output pressure over wide flow and supply pressure variations, while minimizing output changes caused by supply fluctuations. A high relieving version, the Type 79HR, is also available, offering 25% additional exhaust capability. A rugged design offers low droop, high accuracy and fine adjustment sensitivity.

## Electric Pressure Transducers

### T1000



Type 1000 IP and EP Transducers are electro-pneumatic transducers that reduce a supply pressure to a regulated output pressure directly proportional to an electrical input signal. The Type 1000 accepts a wide range of supply pressures, ranging from a minimum of 3 PSIG (0.2 BAR) above the maximum output up to 100 PSIG (6.9 BAR). An integral pneumatic volume booster provides high flow capacity (up to 12 SCFM/339 slpm).

### T1001



Type 1001 IP and EP Transducers from Marsh Bellofram are a patented family of electro-pneumatic instruments, used to reduce a supply pressure to a regulated output pressure which is directly proportional to a two-wire current or three-wire voltage input. This design incorporates closed loop sensing of the output pressure to achieve a typical accuracy of 0.1% and vibration stability.

### T1500



The Marsh Bellofram Type 1500 electro-pneumatic transducer converts an electrical signal to a proportional pressure output. It provides low-cost precision electro-pneumatic control to actuators, valves, positioners, final control elements and high-flow controls. Occupying a small overall footprint, Type 1500's compact size and accessibility to ports and adjustments allow the unit to be installed in space-constrained locations or in a manifold for multi-device control.

### T2000



The Marsh Bellofram Type 2000 is a highly robust transducer with typical full-scale accuracy of 0.1%, designed to provide precise electronic pressure control of humid (non-condensing) and oil-laden process gases within harsh industrial environments. With a unique design that incorporates a patented, hermetically sealed piezoceramic Bimorph and isolated electronics, the Type 2000 pressure transducer regulates an incoming supply pressure down to a precise output that is directly proportional to an electrical control signal, with available pressure ranges to 120

## Air Cylinders



Marsh Bellofram rolling diaphragm Air Cylinders are actuators made from elastomers, engineered metals and fabrics. They require no lubrication and are virtually frictionless and economical. They can be used to provide lifting, clamping, pushing, coining, turning and other linear force or actuation motions in many applications.

# BelGAS Industrial Products



## P32 Natural Gas & Propane Regulator

Superior regulation and excellent stability make the BelGAS Type P32 natural gas and propane regulator ideal for lower flow applications. Square head adjustment screw allows for easy in-field calibration. The Type P32 is available with handwheel adjustment, output pressure gauge and/or mounting bracket as options. The use of a relief valve is recommended for this product in accordance with NFPA 58.

### Features:

- 60-mesh screen
- UL listed (Standard P32)
- NACE construction available
- Non-Relieving



## P36 Preset Gas Pressure Regulator

The BelGAS Type P36 preset gas pressure regulator is available to order with the exact level of required regulation. Ideal for areas requiring tamper resistant components or where incidental re-adjustment is a concern. The use of a relief valve is recommended for this product in accordance with NFPA 58.

### Features:

- 60-mesh screen
- UL listed (Standard P36)
- Non-Relieving
- NACE construction available



## P37 Natural Gas & Propane Regulator

The BelGAS Type P37 natural gas and propane regulator contains many of the same characteristics as the Type P38, but at a reduced price. At 110 SCFM (16.5 Mbtu/hr), the P37 offers flow rates comparable to current market suppliers. The use of a relief valve is recommended for this product in accordance with NFPA 58.

### Applications:

- Pneumatic Controllers
- Valve Positioners
- Actuation
- Fuel Gas
- Compressed Air
- UL Listed



## P38 Non-Relieving Gas & Propane Regulator

The BelGAS Type P38 Spring Opposed Non-Relieving Gas and Propane Regulator is a diaphragm-operated device, using a patented balanced pintle design to eliminate unsteady changes in outlet pressure due to inlet pressure fluctuations.

### Applications:

- Pneumatic Controllers
- Valve Positioners
- Actuation
- Fuel Gas
- Compressed Air
- UL Listed



## P39 Configurable Gas Pressure Regulator

The BelGAS Type P39 configurable gas pressure regulator is the largest of its type in the industry, and most easily adjustable. In addition, our broad selection of six different outlet pressure spring ranges allows for more precise regulation of downstream pressure for better process control. Piping designs can be simplified by using any one (or all) of the regulator's three standard outlet ports.

### Applications:

- First Cut of High-Pressure Natural Gas to Control Valve Supply
- Natural Gas Instrumentation Columns
- First Cuts to Any Downstream, Low Flow Application, such as:
  - Catalytic Heaters
  - Valve Actuators
  - Pressure Controllers
  - Chemical Injection Pumps



## P70 Natural Gas and Propane Regulator

The BelGAS Type P70 natural gas and propane regulators are reliable precision units, designed for instrumentation and general purpose use. Test data for these regulators show excellent performance characteristics compared with those of similar units presently on the market. These BelGAS regulators are generally superior in regulated pressure vs. flow, forward-to-reverse flow offset, supply pressure sensitivity, repeatability and stability. Ruggedly designed and constructed, the regulators have housings of diecast aluminum. The P70 Regulator is finished with vinyl paint (which resists scratching, weathering & other physical abuse), while the P70 NACE is supplied with an epoxy paint for added corrosion protection. The P70 regulator is pressure and leak tested prior to shipment from the factory.

### Features:

- High Flow Capacity (80 SCFM)
- Self-relieving
- Standard tapped vent
- Soft relief seat for low gas consumption
- Several mounting options



## P95H Large Capacity Pressure Reducing Regulator

The BelGAS Type P95H is a direct operating, large capacity pressure reducing regulator, ideally suited for use in oil and gas, process gases, steam and liquid flow monitoring applications. Available in three different spring ranges, with metal or an elastomeric diaphragm and orifice seat materials, the compact Type P95H offers rugged construction, ease of operation and set pressures, leak-tight operation, and in-line maintenance capabilities.

### Features:

- Direct operating
- Multiple port sizes from 1/2" NPT up to 2" NPT
- Choice of metal or elastomeric diaphragm and orifice seat materials
- Large flow capabilities with set pressures
- Flange units available



## P600 Direct Operated Pressure Reducing Regulator

The BelGAS Type P600 direct operated, pressure reducing regulator can be used as a pressure loaded regulator, switching valve, or monitoring regulator. Available with a non-relieving option, an internal relief valve option or monitoring regulator option, the P600 is designed to maintain a constant, preset downstream pressure.

### Features:

- May be used as a pressure loaded regulator, switching valve, or monitoring regulator
- Available with a non-relieving option, an internal relief valve option or monitoring regulator option
- Choice of 1" or 3/4" NPT port size
- Orifice sizes: 1/8"; 3/16"; 1/4"; 3/8"; 1/2"; 9/16"
- Operating temperature range of -20°F to 180°F (-29°C to 82°C)
- Available in six available range springs



## P627 Low and High Gas Pressure Regulator

Type P627 from BelGAS is a spring loaded, direct-operated, low and high gas pressure regulator, designed to support a variety of applications in the oil and gas industries. These regulators provide durability, from the powder-coated epoxy exterior finish, as well as installation versatility, from the multi-position body and spring case configurations. These regulators are also available in an external pressure registration model (P627M), and NACE compliant construction, as well as with the choice of aluminum, steel or LCC body, as well as bonnet and diaphragm cases. The gas pressure regulators also feature a wide range of flow capacities to suit a wide range of requirements.

### Features:

- Wide Range of Flow Capacities
- Durable Powder Coated Exterior
- Multi-position body and spring case configuration
- Optional external pressure registration model (P627M); models also available with NACE-compliant construction



## P98H Back Pressure Regulator

The BelGAS Type P98H back pressure regulator is designed to monitor upstream pressure, opening to relieve excess pressure increases above set point. As a back pressure regulator, the upstream pressure is monitored and released downstream when the set point is exceeded.

### Features:

- Multiple port sizes from 1/2 NPT up to 2" NPT
- Flange Units Available



## P289 Back Pressure Regulator

The BelGAS Type P289 back pressure regulator functions as a high flow relief valve with an adjustable setpoint. It can be used in place of a standard relief valve to provide protection against over-pressurization in the downstream system. With its large diaphragm area and integral pitot tube booster, the Type P289 is designed for quick and smooth response to excessive pressure relief requirements, particularly within low-pressure settings. The Marsh Bellofram BelGAS Type P289 back pressure regulator functions as a high flow relief valve with an adjustable setpoint. The Type P289 can be used in place of a standard relief valve to provide protection against over pressurization in the downstream system. With its large diaphragm area and integral Pitot tube booster, the Type P289 is designed for quick and smooth response to excessive pressure relief requirements, particularly within low-pressure settings.

### Applications:

- Fuel Gas Relief
- Gas Gathering Relief
- Downstream System Pressure Control
- Low-pressure relief



## P119 Air and Gas Pressure Control Valve

The BelGAS Type P119 air and gas pressure control valve is a versatile, general purpose, spring loaded flow and pressure regulation control valve with on-off or throttling control and inline maintenance capabilities. Units are designed for use within oil, gas, and petrochemical (pipeline), industrial plant air and gas regulation, and other industrial environments.

### Features:

- Tight shut-off at maximum body working pressure
- Easy installation
- Leak detection and low seat leakage
- Inline maintenance
- Steel body incorporates NACE MR0175 compliant construction



## P255 High-Capacity Relief Valve

The Type P255 high-capacity relief valve is designed for use with BelGAS and other industry gas pressure regulators. A relief valve is primarily used to discharge excess system pressure to a safe point of release.

### Features:

- Zero leakage to 98% of set pressure
- Set pressure tolerance  $\pm 5\%$  of preset
- Reseal at 92% of set pressure
- Line sizes of  $\frac{3}{4}$ " and 1" NPT



## W627 Liquid Gas Regulator

The W627 is a spring loaded, direct-operated regulator for liquid service. These regulators provide durability, from the powder-coated epoxy exterior finish, as well as installation versatility, from the multi-position body and spring case configurations. These regulators are also available in an external pressure registration model.

### Features:

- Wide Range of Flow Capacities
- Durable Powder Coated Exterior
- Installation Versatility
- External Pressure Registration Model
- Iron, Steel, and Stainless Steel constructions available



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