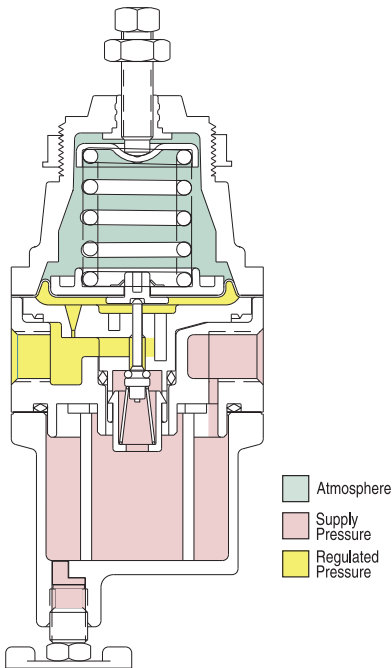


# Type 51

## Pressure Regulator Series

### Features

- Excellent regulation, stability and repeatability
- Corrosion-resistant construction (no brass components, Type 51FR and Type 51AFR)
- NACE Constructed (Type 51FRCT Corrosive Tec)
- Low droop
- Small package size
- Panel, bracket or pipe mounting
- Fluorocarbon pintle seat (Type 51FR, Type 51AFR and Type 51FRCT)
- Auto drain option (Type 51AFR)
- Meets ATEX  $\text{Ex II 2 G Dc T 6}$  (Non-electrical certification)



### Description

The Bellofram Type 51 Precision Air Regulator series offers a high-performance regulator in a compact, low cost package. It operates in output pressure ranges up to 100 PSIG / 6.9 BAR (120 PSIG / 8.3 BAR in T-51FR Corrosive Tec), with a maximum supply pressure of 250 psi (17.3 BAR).

### Materials of Construction for Standard Type 51 Series Regulators

Diecast 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).

### Materials of Construction for Corrosive Tec Type 51FRCT

Aluminum alloy bonnet, body, and filter bowl, 316 stainless steel internals, Inconel alloy range spring, nitrile diaphragm (fluorocarbon optional), 316 stainless steel valve assembly, and finished with an epoxy paint. All metallic parts for this unit conform to NACE material requirements #MR-01-75.

### Materials of Construction for 51FRWT

Aluminum alloy bonnet, body, and filter bowl, acetal resin, plated steel and aluminum internals. Nitrile diaphragm and finished with an vinyl paint.



T51 FRCT

T51 R

## Type 51

### Pressure Regulator Series



From industry to industry, Marsh Bellofram's Type 51 Series of Regulators offer a low-cost, high performance option for a wide range of applications.

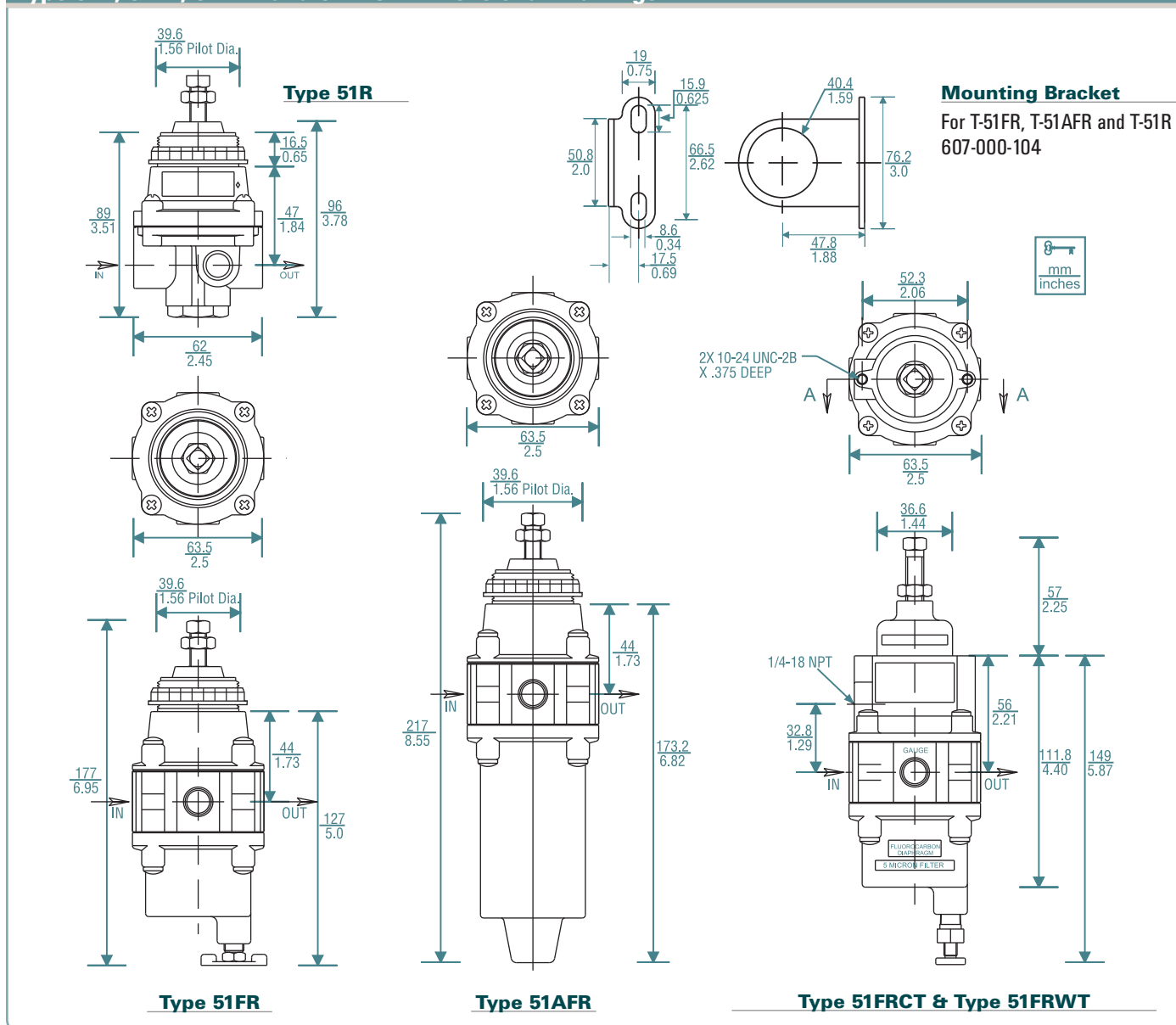
### Type 51 Options

	• = option is available s = option is standard	Type 51FRWT	Type 51R	Type 51FR	Type 51AFR	Type 51FRCT
1	Fluorocarbon Pintle		•	s	s	s
2	Non-Relieving	•	•	•	•	•
3	Knob Sq. Head Adj. Screw	•	•	•	•	•
4	5 Micron Filter		s	s	s	s
5	Epoxy Finish	•	•	•	•	s
6	Tapped Vent Coalescing Filter	•				s
7	Mounting Bracket	•	•	•	•	•
8	Pressure Gauge	•	•	•	•	•
9	Tamper Resistant Cover Panel Nut Mount	•		s	s	•
10	Soft Relief Seat Low Bleed					•
11	Fluorocarbon Diaphragm		•	•	•	•

These regulators are available standard (Type 51R) or as filter-regulators (Type 51FR and Type 51FRCT) and are even available with an automatic drain, for automated flushing out of contaminants (Type 51 AFR). These versatile regulators provide excellent regulation for a wide range of applications, including pneumatic instruments, controllers, chucks, and actuators. They can be through-panel mounted with the supplied mounting nut, bracket-mounted with the optional bracket or, due to their light weight, mounted by their ports. The Corrosive Tec is supplied with a tapped bonnet vent, to allow for the capture of exhaust air.

	Type 51FR Filter			
	Type 51R	and Type 51AFR Auto Filter	Type 51FRCT Corrosive Tec	Type 51FRWT
Maximum Supply Pressure	250 PSIG (17.3 BAR)	250 PSIG (17.3 BAR)	250 PSIG (17.3 BAR)	250 PSIG (17.3 BAR)
Output Pressure Range	0-30 PSIG (0-2.1 BAR) 0-60 PSIG (0-4.1 BAR) 0-100 PSIG (0-6.9 BAR)	0-30 PSIG (0-2.1 BAR) 0-60 PSIG (0-4.1 BAR) 0-100 PSIG (0-6.9 BAR)	0-30 PSIG (0-2.1 BAR) 0-60 PSIG (0-4.1 BAR) 0-120 PSIG (0-8.3 BAR)	0-30 PSIG (0-2.1 BAR) 0-60 PSIG (0-4.1 BAR) 0-120 PSIG (0-8.3 BAR)
Supply Pressure Sensitivity @ 25 psig / 1.7 BAR change in supply	0.20 PSIG (0.01 BAR) output change	0.45 PSIG (0.03 BAR) output change	0.45 PSIG (0.03 BAR) output change	0.45 PSIG (0.03 BAR) output change
Sensitivity	1" (2.5 cm) of water	1" (2.5 cm) of water	1" (2.5 cm) of water	1" (2.5 cm) of water
Repeatability	0.1 PSIG (0.01 BAR)	0.1 PSIG (0.01 BAR)	0.1 PSIG (0.01 BAR)	0.1 PSIG (0.01 BAR)
Flow @ 100 psig (6.9 BAR) Supply 20 psig (1.4 BAR) outlet	15 SCFM (425 LPM)	20 SCFM (566 LPM)	20 SCFM (566 LPM)	20 SCFM (566 LPM)
Exhaust Capacity @ 5 psig (0.34 BAR) above setpoint	0.1 SCFM (2.8 LPM)	0.1 SCFM (2.8 LPM)	0.1 SCFM (2.8 LPM)	0.1 SCFM (2.8 LPM)
Temperature Range	-0 to 125 °F (-18 to 52 °C)	-0 to 125 °F (-18 to 52 °C)	0 to 180 °F (-18 to 82 °C)	-40 to 185 °F (-40 to 85 °C)
Air Consumption	6 SCFH (2.84 LPM) Maximum	6 SCFH (2.84 LPM) Maximum	6 SCFH (2.84 LPM) Maximum	6 SCFH (2.84 LPM) Maximum
Port Size	1/4 NPT	1/4 NPT	1/4 NPT	1/4 NPT
Materials of Construction	Aluminum, Plated Steel, Brass, Acetal Resin, Buna-N /Polyester, Music Wire	Aluminum, Plated Steel, Acetal Resin, Buna-N / Polyester, Music Wire, Fluorocarbon	Aluminum, Stainless Steel, Inconel, Buna-N / polyester, Fluorocarbon, acetal, polyphenylene sulfide	Aluminum, Plated Steel, Acetal Resin, Buna-N /Polyester, Music Wire

### Type 51R, 51FR, 51AFR and 51FRCT Dimensional Drawings



## Type 51 Ordering Information

	Part Number	Port Size (NPT)	Set Point Range	
			BAR	psig
T51R	960-222-000	1/4	0-2.1	0-30
	960-223-000		0-4.1	0-60
	960-224-000		0-6.9	0-100
T51FR	960-175-000	1/4	0-2.1	0-30
	960-176-000		0-4.1	0-60
	960-177-000		0-6.9	0-100
T51AFR	960-284-000	1/4	0-2.1	0-30
	960-285-000		0-4.1	0-60
	960-286-000		0-6.9	0-100
T51 FRCT	960-303-000	1/4	0-2.1	0-30
	960-304-000		0-4.1	0-60
	960-305-000		0-8.3	0-120
T51 FRWT	960-048-000	1/4	0-2.1	0-30
	960-049-000		0-4.1	0-60
	960-050-000		0-8.3	0-120

## Type 51 Option Ordering Matrix

Replace last three digits of part number with digits from table below.

Option	1	2	3	4	5	6	7	8	9	10	11
1 Fluorocarbon Pintle	001	021	031	041	051	061	071	081	091	101	111
2 Non-Relieving	002	032	042	052	062	072	082	092			112
3 Knob		003	043	053	063	073	083			103	113
4 5 Micron Filter			004	054		074	084	094	104	114	
5 Epoxy Finish				005	065	075	085	095	105	115	
6 Coalescing Filter (Type 51AFR only)					006	076	086	096	106	116	
7 Mounting Bracket						007	087	097	107	117	
8 Pressure Gauge							008	098	108	118	
9 Tamper-Resistant Cover								009	109	119	
10 Soft Relief Seat									010	110	
11 Fluorocarbon Diaphragm											011

## Type 51 Regulator Options and Accessories

**Non-Relieving**

Used in applications where it is desirable to relieve pressure downstream and not at the regulator. Non-relieving regulators should not be used for low or no flow applications.

**Knob**

Replaces the standard square head adjusting screw. (except Type 51FRCT)

**5 Micron Filter**

Replaces the 40 micron filter for more complete air filtration. (Except Type 51R)

**Epoxy Finish**

An epoxy paint applied to the body and dripwell of the regulator exterior surfaces to provide increased corrosion resistance. (Standard for Type 51FRCT)

**Mounting Bracket**

Plated steel bracket for side mounting. (316 SS for Type 51FRCT)

**Coalescing Filter**

Replaces the 40 micron filter for both moisture and particulate filtration. (Type 51AFR only)

**Pressure Gauge**

Dual scale (psi/kPa) 2" (50mm) gauges. Ranges include 0-60 psi (0-4.1 BAR), 0-100 psi (0-6.9 BAR) and 0-120 psi (0-8.3 BAR). When specified with regulator, the correct range will be supplied.

**Fluorocarbon Elastomers**

Diaphragm, as well as gaskets and O-rings, are made with a special elastomer to prevent deterioration from elements in the air supply, such as flame retardant synthetic lubricants normally destructive to the standard BUNA-N material.

**Tamper Resistant Cover**

A 316 stainless steel hexagonal cover placed over the adjusting screw and threaded onto the bonnet of the regulator with a wrench, prevents ordinary hand adjustments. Supplied with an O-ring that is designed to seal the adjusting screws threads in captured bleed applications. (T-51FRCT and T-51FRWT)

**Low Bleed Diaphragm (Soft Relief Seat)**

Used in applications where it is desirable to minimize the standard bleed rate of the regulator while maintaining the ability to relieve excess pressure at the regulator. Bleed rate is reduced from less than 6 SCFH (2.8 LPM) to less than 0.1 SCFH (0.05 LPM). (Type 51FRCT only)

