



# Safety Excess Flow Valves M-VF Series

Prevents uncontrolled flows of corrosive and non-corrosive fluids with an integral manual reset  
(Manual Reset Version)

## Key Features

- High reliability
- Field adjustable
- Low pressure drop
- Right angle flow



The M-VF Series Safety Excess Flow Valves are engineered for fast automatic shut-off in case of line, hose, or fitting failures protecting plant, personnel, and instruments. Designed for protection of systems handling corrosive, toxic, radioactive, and flammable materials; the valve will instantly detect surges in the system and stop fluid flow. When the break is repaired and pressure equalized in the system, the valve will open to allow the fluid to flow through the system. The M-VF operates effectively with all fluids, liquids, or gases.

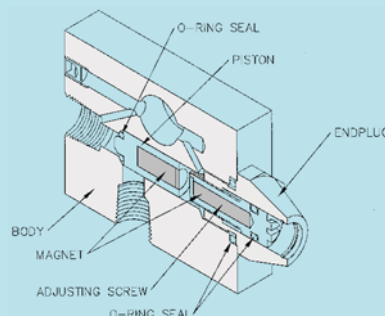
## Operating Principle

The reset valve is available in three versions: bleed to atmosphere, bleed to sample container through barbed tube, and intrinsic reset.

(1) For applications where bleed to atmosphere is acceptable, such as air and nontoxic gases, the reset valve bleeds the gas behind the piston to atmosphere. This equalizes the pressure that is inside the valve and allows for a quick reset. The reset valve can then be turned off to allow the flow to resume.

(2) For applications where the flow media must be contained, a bleed valve tube allows bleeding of the system to a sample container through a barbed tube.

(3) The intrinsic reset version offers an internal bypass feature which allows for bleeding downstream that in turn, contains all of the medium within the valve. **(Patent Number 5,445,184).**



Illustrated is the M-VF model with 1/4" ports and intrinsic reset

## Applications

- Compressed air and gas systems
- Pollution control
- Leak detection
- Gas analyzers
- Hydraulic lines
- Plant lines

## Custom Version Available

Malema welcomes the opportunity to apply its flow sensor experience to work for its customers. Please contact the factory for any special requirements; such as ports, extreme temperature and pressure capabilities, etc....

## Material Versions

- Brass
- 316 Stainless Steel

Other materials available upon request.

## Calibration range

Air	0.0177 - 130 scfm
Water	0.0026 - 20 gpm

These ranges are over different valves sizes

## Specifications

Set Point Accuracy	± 10% maximum
Repeatability	± 3%

## Port size

- 1/8"
- 1/4"
- 3/8"
- 1/2"
- 3/4"

# Safety Excess Flow Valves

## Installation and Flow Rate Adjustment

1. The preferred mounting orientation for the valve is in the horizontal position, although it can be mounted vertically.
2. Turn the adjusting screw fully counter-clockwise.
3. Connect hose or piping to outlet and operate at maximum flow rate (liquid or gas).
4. Turn the adjusting screw clockwise until the valve actuates and shuts off flow.
5. Turn the flow off. The valve will automatically reset because of its controlled bleed. For positive shut-off models, equalize the pressure on both sides of the valve. The valve will reset as the pressure is equalized and automatically return to its previously adjusted flow setting.
6. Turn the adjusting screw (one turn) counter-clockwise and system is ready to function.

Note: In high pressure environments, step 4 may need to be done iteratively under no flow conditions, after which flow can be resumed to test for valve actuation.

## Maintenance

It is beneficial to have adequate filtration in the system prior to the valve as otherwise, its functioning may be hampered by large particles interfering with the travel of the piston. Using an adjustable wrench, gently remove the end-plug from the valve body. Examine the piston, the o-rings, and the surfaces of the valve bore and clean with trichloroethene if necessary, prior to reassembling (Replacement parts are available on request).

Adequate sealing methods must be used at all connections to the valve to prevent leakage.

## Standard Specifications by Materials

Part Name	Material	
Housing, End Plug, & Adjusting Screw	Brass	316SS
Magnets in Adjusting Screw & Pistons	Alnico 5	
O-rings	Viton	
Piston	316SS	316SS
Pressure and Temperature Specifications	1500	3000
Maximum Operating (psig)	3000	5000
Burst (psig)	149 C	149 C (300°F)
Maximum Operating Temperature	(300°F)	

## Flow Range Table

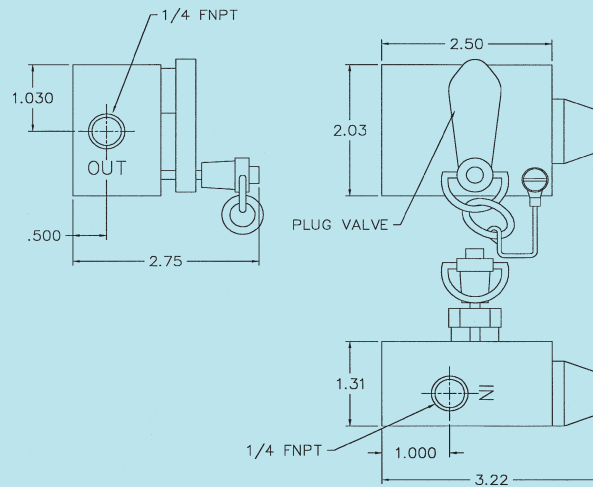
Port Size (FNPT)	Shut Off Range (Air/scfm)	Shut Off Range (Water/gpm)
1/8"	0.0177 - 5	0.00264 - 0.8
1/4"	0.12 - 35	0.0264 - 3.5
3/8"	3 - 60	0.1 - 4
1/2"	5 - 75	0.5 - 10
3/4"	15 - 130	1.0 - 20

# Safety Excess Flow Valves

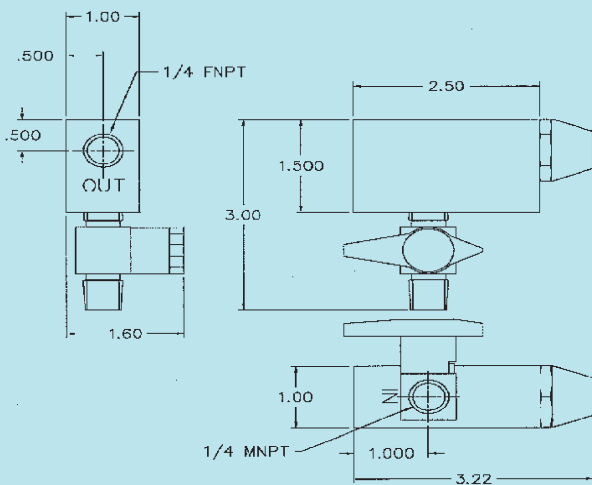
## Manual Reset Valve Specifications

Bleed to Atmosphere	Nupro Valve in 316SS, Brass with maximum pressure to 3000 psi. Temperature from -10°F to 400°. All seals are Teflon coated Viton (other seal materials are optional)
Bleed to Sample Container	Whitey Co 'BV' Series in 316SS, Carbon Steel or Alloy R-405 with maximum pressure up to 10,000 psi @ 100°F
Intrinsic Reset	316SS or Brass. packing is PFA

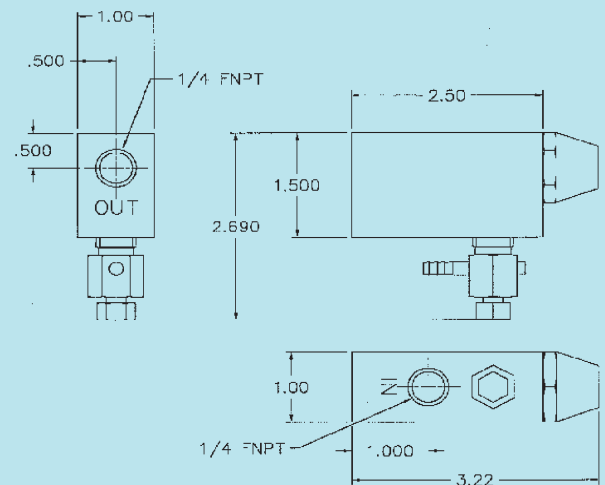
## Dimensional Drawings



Illustrated is the M-VF Model with 1/4" ports and intrinsic reset.



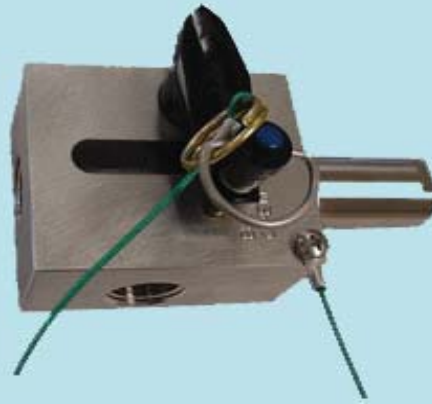
Illustrated is the M-VF Model with 1/4" ports and "Bleed to Atmosphere" option.



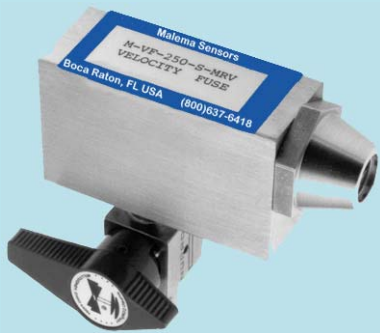
Illustrated is the M-VF Model with 1/4" ports and "Bleed to Sample Container" option.

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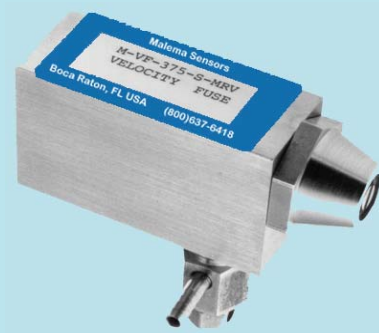
## Sample Photograph



Depicted is the M-VF with "Intrinsic Reset" option.



Depicted is the M-VF with "Bleed to Atmosphere" option.



Depicted is the M-VF with "Bleed to Sample Container" option.

## Ordering Information

Standard Part Numbering						Options				
M	-	Model	-	Material	Port	Shutoff	-	Reset*	Piston	Seals
M	-	VF	-	S	1	1	-	0	0	1
				B - Brass S - 316 Stainless Steel	1 - 1/8" 2 - 1/4" 3 - 3/8" 4 - 1/2" 6 - 3/4"	1 - Positive Shut off 2 - Bleed		0 - Standard 1 - Bleed to atmosphere 2 - Bleed to Sample Container through Barbed Tube 3 - intrinsic Reset	0 - Standard (316 SS with epoxy) 1 - All 316 SS (no epoxy)	0 - Standard (Viton®) 1 - Kalrez® 4 - Silicone 5 - EPDM 6 - Butyl 7 - Nitrile