Flow Monitors - Flow Switches
Excess Flow Valves - Flow Meters

Welcome to CTE Chem Tec Equipment.
Leading manufacturers of Flow Monitors, Flow Meters, Flow Switches, and Excess Flow Valves for 35 years.

Flow Switches (also known as Flow Monitors and Flow Sensors) give switch contact at a predetermined flow rate. Flow Meters provide varying electrical output with fluid flow. Excess Flow Valves are normally open valves that close automatically at a predetermined flow rate.

We specialize in the lower flow ranges -- i.e. 120 SCFM air, 20 GPM water, or less. Flow Switches have fixed and adjustable models. All categories have a variety of flow ranges and pipe sizes.

CTE is the only manufacturer of all Teflon® Flow Switches and Flow Meters.

Important Notice: All of our products containing reed switches are now available with digital solid state switching.

Please check out our exciting and innovative NEW PRODUCTS and ADD-ON's to our existing product line.

INSTALLATION & MAINTENANCE MANUALS are now available in PDF format.

CTE ◙ 234 S.W. 12th Avenue ◙ Deerfield Beach, Florida 33442
Tel (800) 222-2177 ◙ Fax (954) 428-8745 ◙ Email: *info@chemtec.com*

EXCESS FLOW VALVES

EFV SERIES

For preventing uncontrolled flows of gases and liquids.

CTE CHEM TEC

c UL us Recognized File E75356

CE Recognized 73/23/EEC,93/68/EEC

KEY FEATURES	APPLICATIONS
Controls excessive flows	Fitting Failure Regulator failure Hydraulic control Gas Analyzers Toxic Gas and Liquid Releases

Features

- Controlled Bleed, Resets Automatically
- Field Adjustable
- Positive Shut-off
- Attitude Variable Mounting
- Function: Restricts or Shuts Off Flow
- Output: switch contact optional
- Materials: 316ss or Brass Body

Operation

Flow enters the unit and makes a right angle to the outlet port across the nose of a magnetic piston. The piston is held in place by attraction to an adjusting screw magnet. A pressure differential is created by flow across the piston. When the differential is great enough, the piston slides to a seat at the outlet port. The flow rate at which the piston actuates can be changed externally by turning the adjusting screw, thereby changing the piston's relationship with the flow stream.

In this auto reset model after actuation, the piston rests on a metal to metal seat which allows a controlled bleed. To reset the unit, pressure must be equalized on both sides of the piston. If the source is turned off, either upstream or downstream, the bleed will equalize the pressure and the valve will automatically reopen by magnetic repulsion from the fixed magnet located in the valve body.

For positive shut-off an elastomer is used on the nose of the piston. When it comes to rest on the seat it provides a bubble tight closure. To reopen the valve there are two options.

1. The upstream pipeline must be bled to atmosphere if the line downstream is at atmosphere.

2. A by-pass line with an on/off valve must be installed to port the upstream pressure to the downstream pipeline to equalize the pressure.

Our MRS series is available with the by-pass system as an integral part of the unit.

- Actuation points for air at 68° F and 14.7 PSIG.
- Corrections must be used for other gases, line pressures and temperatures.*
- Please consult your representative or the factory.

CALIBRATION RANGE

Model	Adjustable Range Air SLPM (SCFM)	Adjustable Range Water LPM (GPM)	Port Size FNPT
EFV-125	0.5 to 155.70 (0.018 to 5.5)	0.015 to 4.5 (0.004 to 1.2)	1/8"
EFV-250	4 to 1132 (0.14 to 40)	0.100 to 15.1 (0.026 to 4.0)	1/4"
EFV-375	85 to 1840 (3.0 to 65)	0.380 to 15.1 (0.100 to 4.0)	3/8"
EFV-500	142 to 2123 (5.0 to 75)	1.90 to 37.8 (0.50 to 10.0)	1/2"
EFV-750	425 to 3681 (15.0 to 130)	3.80 to 75.7 (1.0 to 20.0)	3/4"

PRESSURE LOSS TABLE

Model	Set Point		DP to Atmosphere BARD (PSID)
	Air SLPM (SCFM)	Water LPM (GPM)	
EFV-125	0.5 (0.018) 75 (2.63) 155.7 (5.5)	0.015 (0.004) 2.65 (0.70) 4.50 (1.20)	0.08 (1.2) 0.11 (1.6) 0.21 (3.0)
EFV-250	4 (0.14) 500 (17.50) 1132 (39.62)	0.1 (0.26) 5.0 (1.32) 15.1 (3.99)	0.21 (3.0) 0.41 (6.0) 0.83 (12.0)
EFV-375	85 (2.98) 900 (31.50) 1840 (64.40)	0.38 (0.10) 10.0 (2.64) 15.1 (3.99)	0.10 (1.5) 0.28 (4.0) 0.83 (12.0)
EFV-500	142 (4.97) 1000 (35.00) 2123 (74.31)	1.9 (0.50) 25.0 (6.60) 37.8 (9.98)	0.07 (1.0) 0.28 (4.0) 0.48 (7.0)
EFV-750	425 (14.88) 1800 (63.00) 3681 (128.84)	3.8 (1.00) 4.7 (1.24) 75.7 (19.98)	0.14 (2.0) 0.21 (3.0) 0.34 (5.0)

* Consult Factory

EXCESS FLOW VALVES
EFV SERIES

For preventing uncontrolled flows of gases and liquids.

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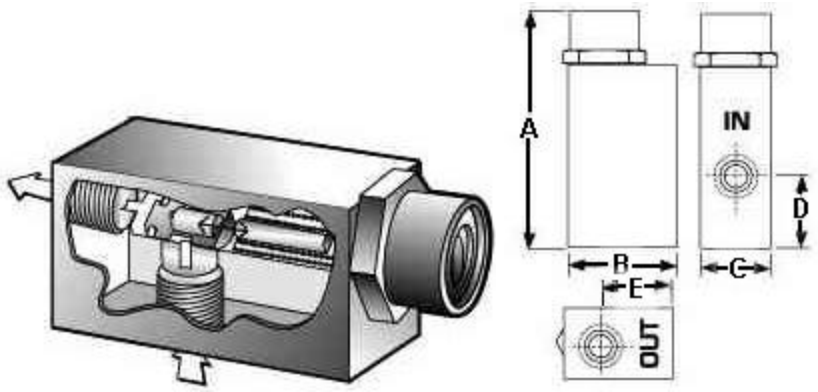
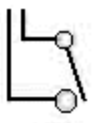


Patent No's 4,637,427; 4,630,799; 4,574,833 Others may apply.

Switch Data
SPST Hermetically Sealed Reed Switch
Max Switching Voltage DC (V) 200 AC (V) 150
Contact Rating DC (W) 50 AC (VA) 70
Max. Switching Current DC (A) 1.0 AC (A) 0.7

Leads	
SPST Leads 18 in. min. from body 22 AWG, TFE insulation.	

Above values for resistive loads only. For inductive loads, surge current and rush current -- contact protection is required; consult your local representative.

Specifications

Unit	Max. Working Pressure PSIG (BARG)	Wetted Parts	Seals
Brass	1500 (103.42)	Brass, Epoxy, Delrin **	Viton®
316ss	3000 (206.84)	316ss, Epoxy	Viton®
		** Brass Piston in 125 Unit	

Fluid Ports: Inlet/Outlet Ports - See Calibration Ranges

Temperature Operating Range: 32° to 220° F (0° to 104° C).

Installation: The 125, 250 and 375 series can be mounted in any position. The 500 and 750 series can be mounted in any position except with the outlet port down. We suggest the unit be calibrated in the attitude in which it will be installed. An actuation point approximately 3 or 4 times normal flow rate should be chosen to avoid the valve actuating from initial pressurization of the system and normal surges. If flow is kept constant, an actuation point 10% above the normal rate may be used.

MODEL	WEIGHT Lbs (Grams)	DIMENSIONS Inches (mm)				
		A	B	C	D	E
EFV125	0.25 (113.4)	2.5 (64)	1.00(25)	0.75 (19)	0.70 (17)	0.63 (16)
EFV250	0.50 (226.8)	3.3 (84)	1.50(38)	1.00 (25)	1.00 (25)	1.00 (25)
EFV375	0.50 (226.8)	3.3 (84)	1.50(38)	1.00 (25)	1.00 (25)	1.00 (25)
EFV500	1.00 (453.6)	4.0 (102)	2.00(50)	1.25 (31)	1.25 (31)	1.38 (35)
EFV750	1.50 (680.4)	4.9 (124)	2.25(57)	1.25 (31)	1.63 (41)	1.63 (41)

How to Order

EFV Model	125 Size	B Material	PSO Positive Shut-Off	ES Electric Switch Normally Open	OPTIONS Any of the following options may be added:
	125 250 375 500 750	B Brass S 316ss Other material available upon request.	Blank for Controlled Bleed Model	(ES not available on 125 model)	O2 Oxygen Cleaned HT High Temperature Unit 340° F (171° C) KZ Kalrez® Seals EPR EPR Seals Z Special Custom FP Factory Presetting (State trip point, medium, and line pressure) Welded Fittings *

* Consult Factory

Note:
All dimensions and specifications are subject to change for quality improvement. Not responsible for typing errors.

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Teflon® is a registered trademark of DuPont.

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EXCESS FLOW VALVES

MANUAL RESET EFV

With integral manual reset for preventing uncontrolled flows of gases and liquids.

Recognized File E75356

Recognized 73/23/EEC,93/68/EEC

KEY FEATURES

Positive shut off with internal reset mechanism

APPLICATIONS

Plant Lines

Regulator Failure

Fitting Failure

Toxic Gases and Liquids

Gas distribution systems

Gas Analyzers

Loss Control

Features

- Field Adjustable
- Resets Manually
- Materials: 316ss or Brass Body Standard
- Detects Excess Flows
- Detects an Increase in Viscosity of Media
- Function: Shuts Off Flow
- Output: Switch Contact (Optional)

Operation

Flow enters the unit and makes a right angle to the outlet port across the nose of a magnetic piston. The piston is held in place by attraction to an adjusting screw magnet. A pressure differential is created by flow across the piston. When the differential is great enough, the piston slides to a seat at the outlet port. The flow rate at which the piston actuates can be changed externally by turning the adjusting screw, thereby changing the piston's relationship with the flow stream.

The piston makes a bubble tight seal when it comes in contact with the seat. To reopen the unit, turn the balancing valve handle on the side. This ports the upstream pipeline to the downstream pipeline. When the pressure is equalized on each side of the piston, it will reset. The unit is returned to normal operation by closing the balancing valve.

- Actuation points for air at 68° F and 14.7 PSIG.
- Corrections must be used for other gases, line pressures and temperatures.*
- Please consult your representative or the factory.

CALIBRATION RANGE

Model	Adjustable Range Air SLPM (SCFM)	Adjustable Range Water LPM (GPM)	Port Size FNPT
EFV-125	0.5 to 155.70 (0.018 to 5.5)	0.015 to 4.5 (0.004 to 1.2)	1/8"
EFV-250	4 to 1132 (0.14 to 40)	0.100 to 15.1 (0.026 to 4.0)	1/4"
EFV-375	85 to 1840 (3.0 to 65)	0.380 to 15.1 (0.100 to 4.0)	3/8"
EFV-500	142 to 2123 (5.0 to 75)	1.90 to 37.8 (0.50 to 10.0)	1/2"
EFV-750	425 to 3681 (15.0 to 130)	3.80 to 75.7 (1.0 to 20.0)	3/4"

PRESSURE LOSS TABLE

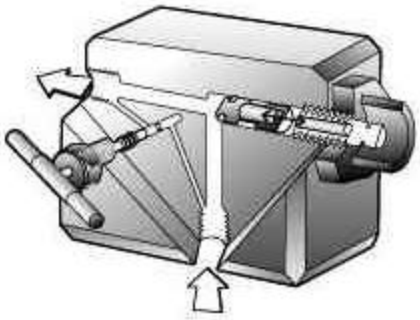
Model	Set Point		DP to Atmosphere BARD (PSID)
	Air SLPM (SCFM)	Water LPM (GPM)	
EFV-125	0.5 (0.018) 75 (2.63) 155.7 (5.5)	0.015 (0.004) 2.65 (0.70) 4.50 (1.20)	0.08 (1.2) 0.11 (1.6) 0.21 (3.0)
EFV-250	4 (0.14) 500 (17.50) 1132 (39.62)	0.1 (0.26) 5.0 (1.32) 15.1 (3.99)	0.21 (3.0) 0.41 (6.0) 0.83 (12.0)
EFV-375	85 (2.98) 900 (31.50) 1840 (64.40)	0.38 (0.10) 10.0 (2.64) 15.1 (3.99)	0.10 (1.5) 0.28 (4.0) 0.83 (12.0)
EFV-500	142 (4.97) 1000 (35.00) 2123 (74.31)	1.9 (0.50) 25.0 (6.60) 37.8 (9.98)	0.07 (1.0) 0.28 (4.0) 0.48 (7.0)
EFV-750	425 (14.88) 1800 (63.00) 3681 (128.84)	3.8 (1.00) 4.7 (1.24) 75.7 (19.98)	0.14 (2.0) 0.21 (3.0) 0.34 (5.0)

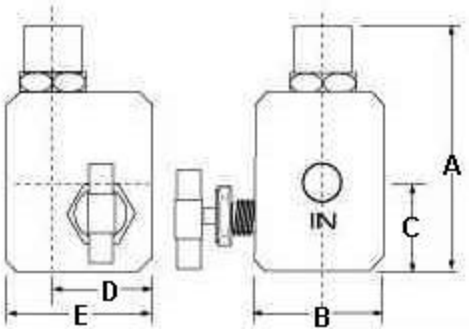
*Consult Factory

EXCESS FLOW VALVES

MANUAL RESET EFV

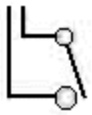
With integral manual reset for preventing uncontrolled flows of gases and liquids.





Patent No's 4,637,427; 4,630,799; 4,574,833 Others may apply.

Switch Data
SPST Hermetically Sealed Reed Switch
Max Switching Voltage DC (V) 200 AC (V) 150
Contact Rating DC (W) 50 AC (VA) 70
Max. Switching Current DC (A) 1.0 AC (A) 0.7

Leads	
SPST Leads 18 in. min. from body 22 AWG, TFE insulation.	

Above values for resistive loads only. For inductive loads, surge current and rush current -- contact protection is required; consult your local representative.

Specifications

Unit	Max. Working Pressure PSIG (BARG)	Wetted Parts	Seals	Balancing Valves Packing
Brass	1500 (103.42)	Brass, Epoxy, Delrin**	Viton®	Teflon®
316ss	3000 (206.84)	316ss, Epoxy	Viton®	Teflon®
		** Brass Piston in 125 Unit		

Fluid Ports: Inlet/Outlet Ports - See Calibration Ranges

Temperature Operating Range: 32° to 220° F (0° to 104° C).

Installation: The 125, 250 and 375 series can be mounted in any position. The 500 and 750 series can be mounted in any position except with the outlet port down. We suggest the unit be calibrated in the attitude in which it will be installed. An actuation point approximately 3 or 4 times normal flow rate should be chosen to avoid the valve actuating from initial pressurization of the system and normal surges. If flow is kept constant, an actuation point 10% above the normal rate may be used.

MODEL	WEIGHT Lbs (Grams)	DIMENSIONS Inches (mm)				
		A	B	C	D	E
EFV125	1.50 (0.68)	2.72 (69)	1.50 (38)	0.75 (19)	1.12(28)	1.62 (41)
EFV250	4.62 (2.095)	3.71 (95)	2.00 (50)	1.50 (38)	1.94 (49)	2.75 (70)
EFV375	4.62 (2.095)	3.71 (95)	2.00 (50)	1.50 (38)	1.94 (49)	2.75 (70)
EFV500	4.75 (2.152)	4.46 (114)	2.00 (50)	1.75 (45)	1.94 (49)	2.75 (70)
EFV750	7.06 (3.204)	5.34 (136)	2.00 (50)	2.13 (54)	2.13 (54)	3.00 (77)

How to Order

EFV Model	125 Size	B Material	MRS	ES Electric Switch Normally Open	OPTIONS Any of the following options may be added:
	125 250 375 500 750	B Brass S 316ss	Manual Reset Model	(ES not available on 125 model)	O2 Oxygen Cleaned HT High Temperature Unit 340° F (171° C) KZ Kalrez® Seals EPR EPR Seals Z Special Custom FP Factory Presetting (State trip point, medium, and line pressure) Welded Fittings *

* Consult Factory

Note:
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Teflon® is a registered trademark of DuPont

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EXCESS FLOW VALVES

HIGH PRESSURE EFV

For preventing uncontrolled flows of gases and liquids.

CTE CHEM TEC

Recognized File E75356

Recognized 73/23/EEC,93/68/EEC

KEY FEATURES	APPLICATIONS
Controls high pressure excessive flows	CNG Delivery High Pressure Plant Lines Hydraulic Systems

Features

- Controlled Bleed Resets Automatically
- Field Adjustable
- Positive Shut-off option
- Materials: 316ss
- Maximum Pressure 6000 PSIG
- Detects Excess Flows
- Detects Increases in Media Viscosity
- Function: Restricts or shuts Off flow
- Output: Switch Contact (Optional)

Operation

Flow enters the unit and makes a right angle to the outlet port across the nose of a magnetic piston. The piston is held in place by attraction to an adjusting screw magnet. A pressure differential is created by flow across the piston. When the differential is great enough, the piston slides to a seat at the outlet port. The flow rate at which the piston actuates can be changed externally by turning the adjusting screw, thereby changing the piston's relationship with the flow stream.

In this auto reset model after actuation, the piston rests on a metal to metal seat that allows a controlled bleed. To reset the unit, pressure must be equalized on both sides of the piston. If the source is turned off, either upstream or downstream, the bleed will equalize the pressure and the valve will automatically reopen by magnetic repulsion from the fixed magnet located in the valve body.

For positive shut-off an elastomer is used on the nose of the piston. When it comes to rest on the seat it provides a bubble tight closure. To reopen the valve there are two options.

1. The upstream pipeline must be bled to atmosphere if the line downstream is at atmosphere.

2. A by-pass line with an on/off valve must be installed to port the upstream pressure to the downstream pipeline to equalize the pressure.

- Actuation points for air at 68° F and 14.7 PSIG.
- Corrections must be used for other gases, line pressures and temperatures.*
- Please consult your representative or the factory.

CALIBRATION RANGE

Model	Adjustable Range Air SLPM (SCFM)	Adjustable Range Water LPM (GPM)	Port Size FNPT
HPEFV-250	4 to 1132 (0.14 to 40)	0.100 to 15.1 (0.026 to 4.0)	1/4"
HPEFV-500	142 to 2123 (5.0 to 75)	1.90 to 37.8 (0.50 to 10.0)	1/2"
HPEFV-750	425 to 3681 (15.0 to 130)	3.80 to 75.7 (1.0 to 20.0)	3/4"

PRESSURE LOSS TABLE

Model	Set Point		DP to Atmosphere BARD (PSID)
	Air SLPM (SCFM)	Water LPM (GPM)	
HPEFV-250	4 (0.14) 500 (17.50) 1132 (39.62)	0.1 (0.26) 5.0 (1.32) 15.1 (3.99)	0.21 (3.0) 0.41 (6.0) 0.83 (12.0)
HPEFV-500	142 (4.97) 1000 (35.00) 2123 (74.31)	1.9 (0.50) 25.0 (6.60) 37.8 (9.98)	0.07 (1.0) 0.28 (4.0) 0.48 (7.0)
HPEFV-750	425 (14.88) 1800 (63.00) 3681 (128.84)	3.8 (1.00) 4.7 (1.24) 75.7 (19.98)	0.14 (2.0) 0.21 (3.0) 0.34 (5.0)

Diagrams and Specifications are on the next page.

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HIGH PRESSURE EFV

For preventing uncontrolled flows of gases and liquids.

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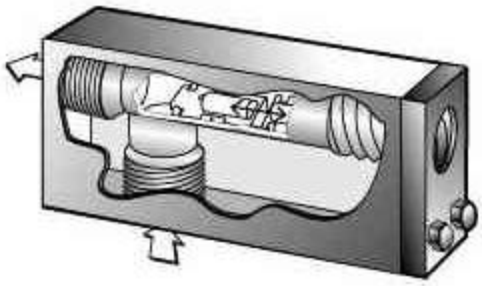
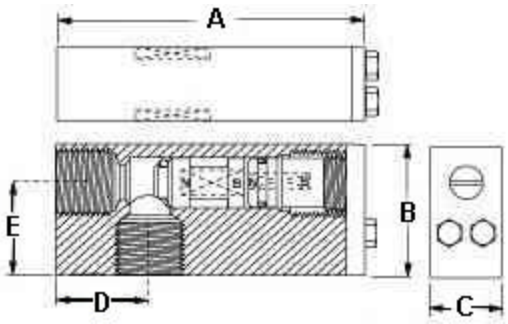
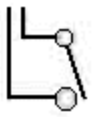




Patent No's 4,637,427; 4,630,799; 4,574,833 Others may apply.

Switch Data
SPST Hermetically Sealed Reed Switch
Max Switching Voltage DC (V) 200 AC (V) 150
Contact Rating DC (W) 50 AC (VA) 70
Max. Switching Current DC (A) 1.0 AC (A) 0.7

Leads	
SPST Leads 18 in. min. from body 22 AWG, TFE insulation.	

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Specifications

Unit	Max. Working Pressure PSIG (BARG)	Wetted Parts	Seals
316ss	6000 (413.4)	316ss, Epoxy	Viton®

Fluid Ports: Inlet/Outlet Ports - See Calibration Ranges

Temperature Operating Range: 32° to 220° F (0° to 104° C).

Installation: The 250 series may be mounted in any position. 500 and 750 series can be mounted in any position except with the outlet port down. We suggest the unit be calibrated in the attitude in which it will be installed. An actuation point two to three times the normal flow rate should be chosen to avoid the valve actuating from initial pressurization of the system and normal surges. If flow is kept constant, an actuation point 10% above the normal rate may be used.

MODEL	WEIGHT Lbs (Grams)	DIMENSIONS Inches (mm)				
		A	B	C	D	E
EFV250	1.47 (0.667)	3.75 (149)	1.50 (38)	1.00 (25)	1.00 (25)	1.00 (25)
EFV500	2.625 (1.190)	4.25 (108)	2.00 (51)	1.25 (32)	1.25 (32)	1.37 (35)
EFV750	3.44 (1.560)	5.25 (133)	2.25 (57)	1.25 (32)	1.625 (41)	1.625 (41)

How to Order

HPEFV Model	250 Size	S Material	PSO Positive Shut-Off	ES Electric Switch	OPTIONS Any of the following options may be added:
	250 500 750	S 316ss Other material available upon request.	Blank for Controlled Bleed Model	Normally Open*	O2 Oxygen Cleaned HT High Temperature Unit 340° F (171° C) KZ Kalrez® Seals EPR EPR Seals Z Special Custom Option FP Factory Presetting (State trip point, medium, and line pressure) Welded Fittings *

* Consult Factory

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