



ADVANCED PRESSURE TECHNOLOGY

SERIES KT 10

SINGLE STAGE HIGH PRESSURE REGULATOR

HIGH RELIABILITY AND SAFETY BY DESIGN

- ◆ 10,000 psig inlet (690 bar)
5 to 10,000 psig outlet
(0.35 to 690 bar)
- ◆ Stainless steel or brass construction
- ◆ Self relieving and
non-relieving versions*
- ◆ Machined from bar stock
- ◆ Field repairable
- ◆ Fine adjustment control
- ◆ Piston sensing element
- ◆ Low flow, 0.06 C_v
(HF option, 0.12 C_v)
- ◆ Pneumatic actuator option for
pneumatic outlet pressure control
- ◆ Installation and operating instructions
available at www.aptech-online.com
in the Tech Briefs section

*Self relieving model vents pressure above set point automatically for ease of pressure adjustment and for added safety. Non-relieving model does not vent.

**Specific device rating is the lowest of the ratings of body, seat and option selected.

***Device delivery pressure cannot exceed its source pressure rating.

MATERIALS OF CONSTRUCTION

	KT 10S	KT 10C	KT 10B
Body	SS, 316	SS, 300 series	Brass
Inlet filter	SS, 316	SS, 316	Bronze
Piston and trim	SS, 300 series	SS, 300 series	SS, 300 series
Seat, main valve	Polyimide (option available)	Polyimide (option available)	Polyimide (option available)
Seat, vent valve	PCTFE	PCTFE	PCTFE
O-rings	Fluoroelastomer / FKM (optional)	Fluoroelastomer / FKM (optional)	Fluoroelastomer / FKM (optional)
Rings, back up	PTFE	PTFE	PTFE

All specifications subject to change without notice.



ENGINEERING DATA

Operating Parameters

Source pressure**

SS body	10,000 psig (690 bar)
Brass body	6,000 psig (414 bar)
Polyimide seat	10,000 psig (690 bar)
PEEK seat	6,000 psig (414 bar)
HF option	6,000 psig (414 bar)

Delivery pressure***

5 to 500 psig (0.34 to 34 bar)
5 to 800 psig (0.34 to 55 bar)
10 to 1,500 psig (0.7 to 103 bar)
15 to 2,500 psig (1 to 172 bar)
25 to 4,000 psig (1.7 to 276 bar)
50 to 6,000 psig (3.5 to 414 bar)
100 to 10,000 psig (7 to 690 bar)

Design proof pressure

150% of maximum rating

Design burst pressure

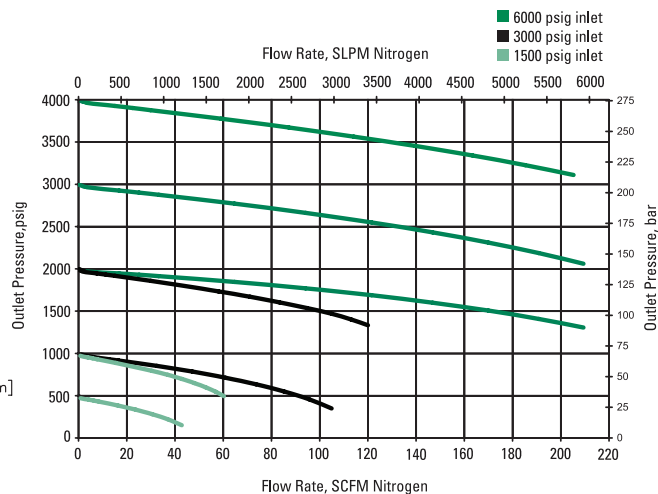
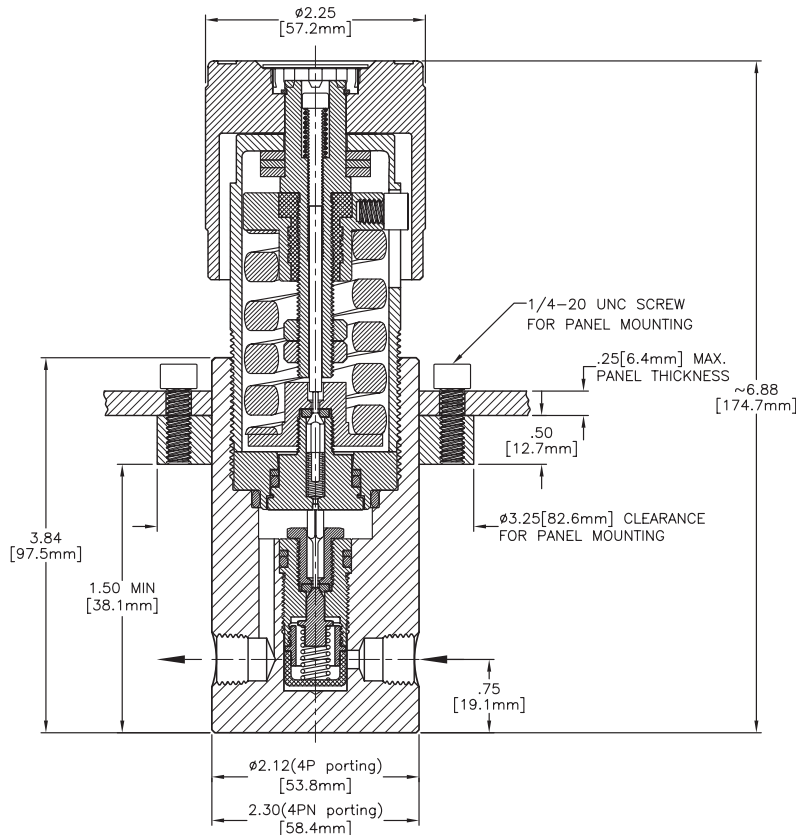
400% of maximum rating

Other Parameters

Inlet /outlet ports	1/4" NPT (options available)
Flow coefficient C _v	0.06 (opt HF 0.12)
Operating temperature	-40 to +160F (-40 to +71C)
Leak rate	Bubble tight
Self relieving*	Standard, non-relieving optional (must be specified)

Shipping weight (approx.) 5 lbs

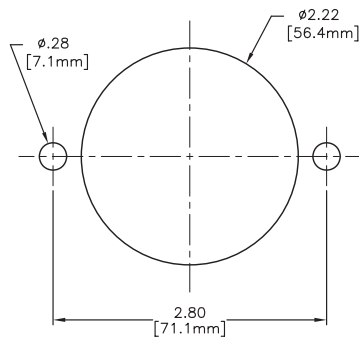
SERIES KT 10 — QUALITY, RELIABILITY & PERFORMANCE!



All dimensions in inches.
Metric dimensions (mm) are for reference only.

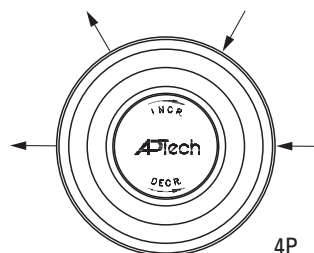
Pneumatic Actuator Note: Please refer to installation and operating instructions for dimensional and operating information related to this option.

Panel Installations



Panel mount cut out dimension

Porting



TOP VIEW

CAUTION: Product selection is the sole responsibility of the user, regardless of any recommendations or suggestions made by the factory. The user shall make selections based upon their own analysis and testing with regard to function, material compatibility and product ratings. Proper installation, operation and maintenance are also required to assure safe, trouble free performance.

ORDERING INFORMATION

KT 10 Series	L Pressure Range	1 Self-Relieving Non-Relieving	C Body Material	4P Ports	4 Connection	60 20 Gauge (Source/Delivery)	PK Options
KT 10F = 5-500 psig (0.34 to 34 bar)				4P = 4 ports	4 = 1/4 inch NPT MS33649 porting available	0 = No gauge 6 = 600 psig/bar 10 = 1,000 psig/bar 20 = 2,000 psig/bar 40 = 4,000 psig/bar 60 = 6,000 psig/bar Q = 10,000 psig/bar	HF = High flow PK = PEEK main valve seat UE = Polyurethane O-rings BN = Buna-N O-rings EP = Ethylene propylene O-rings P = Panel installation**
KT 10H = 5-800 psig (0.34 to 55 bar)							
KT 10J = 10-1,500 psig (0.7 to 103 bar)							
KT 10L = 15-2,500 psig (1 to 172 bar)							
KT 10N = 25-4,000 psig (1.7 to 276 bar)							
KT 10P = 50-6,000 psig (3.5 to 414 bar)							
KT 10R = 100-10,000 psig (7 to 690 bar) SS only							
1 = Self relieving (venting) 0 = Non-relieving (non-venting) 2 = Pneumatic actuator (non-venting)*							
B = Brass (4P porting only) C = Stainless steel (SS), 300 series S = Stainless steel (SS) 316							

*Pneumatic actuator is only available with H, J, N & R pressure ranges.

**Panel mount not available with pneumatic actuator option.

HMI14371/May2014



ADVANCED PRESSURE TECHNOLOGY

SERIES KT 10—WELDED* SINGLE STAGE HIGH PRESSURE REGULATOR HIGH RELIABILITY AND SAFETY BY DESIGN

- ◆ 4,500 psig inlet (310 bar)
5 to 4,000 psig outlet (0.35 to 280 bar)
- ◆ Stainless steel 316L construction,
electropolished and passivated body
- ◆ Self relieving and
non-relieving versions**
- ◆ Machined from bar stock
- ◆ Field repairable
- ◆ Fine adjustment control
- ◆ Piston sensing element
- ◆ Low flow, 0.06 C_v
(HF option, 0.12 C_v)
- ◆ Optional seat and seal
materials available
- ◆ Pneumatic actuator option for
pneumatic outlet pressure control
- ◆ Installation and operating instructions
available at www.aptech-online.com
in the Tech Briefs section

MATERIALS OF CONSTRUCTION

Body	KT 10S
Inlet filter	SS, 316L
Piston and trim	SS, 316
Seat, main valve	SS, 300 series
Seat, vent valve	Polyimide (option available)
O-rings	PCTFE
Rings, back up	Fluoroelastomer / FKM (option available)
	PTFE

All specifications subject to change without notice.



ENGINEERING DATA

Operating Parameters

Source pressure	4,500 psig (310 bar)
Delivery pressure	5 to 500 psig (0.35 to 35 bar) 5 to 800 psig (0.35 to 56 bar) 10 to 1,500 psig (0.7 to 95 bar) 15 to 2,500 psig (1 to 175 bar) 25 to 4,000 psig (1.7 to 280 bar)
Design proof pressure	150% of maximum rating
Design burst pressure	400% of maximum rating

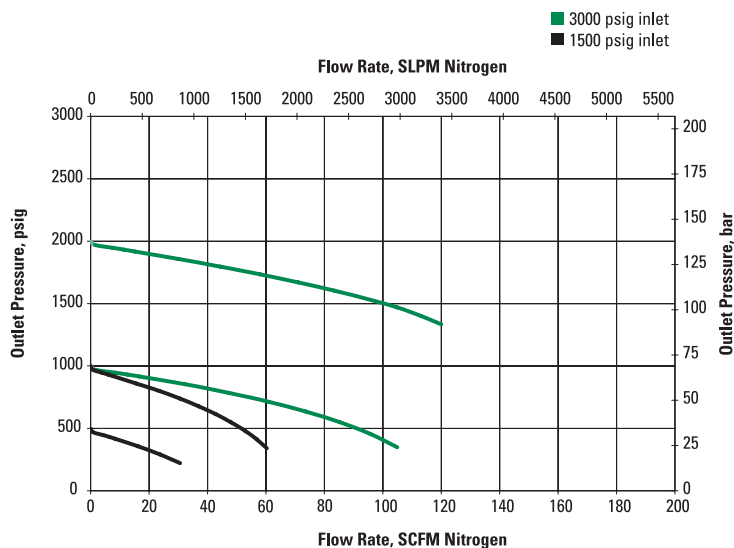
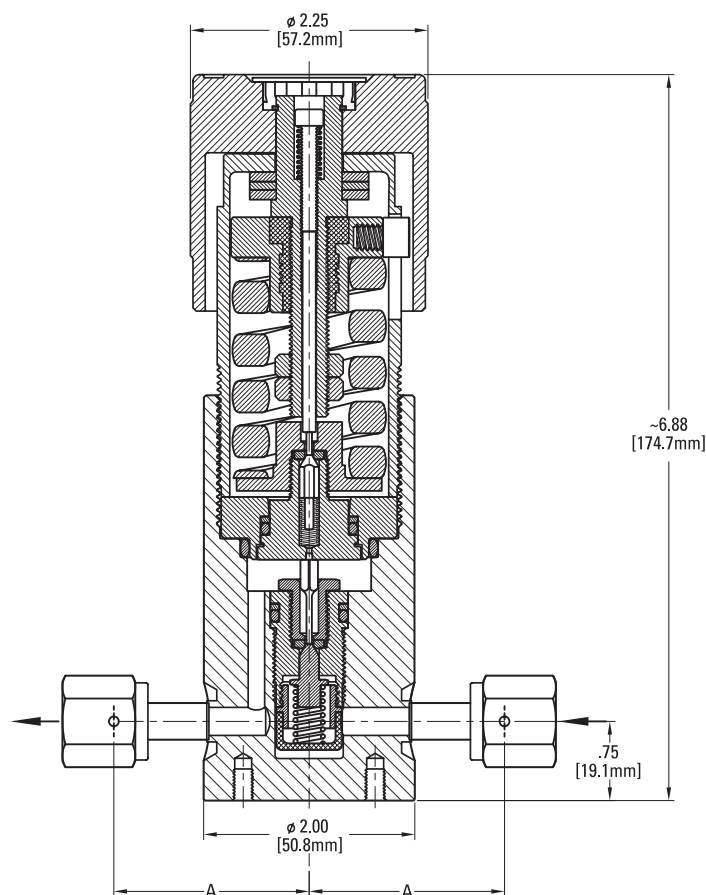
Other Parameters

Inlet /outlet ports	1/4 inch face seal
Flow coefficient C _v	0.06 (opt HF 0.12)
Operating temperature	-40 to +160F (-40 to +71C)
Leak rate*	Bubble tight
Supply pressure effect	Refer to Installation and Operating Instructions
Self relieving**	Standard, non-relieving optional (must be specified)
Shipping weight (approx.)	5 lbs

*This series is not assembled in a Class 100 cleanroom nor is it helium leak tested, though it is of welded construction.

**Self relieving model vents pressure above set point to atmosphere automatically for ease of pressure adjustment and for added safety. Non-relieving model does not vent.

SERIES KT 10 — SERVICE AND SUPPORT BEYOND COMPARE

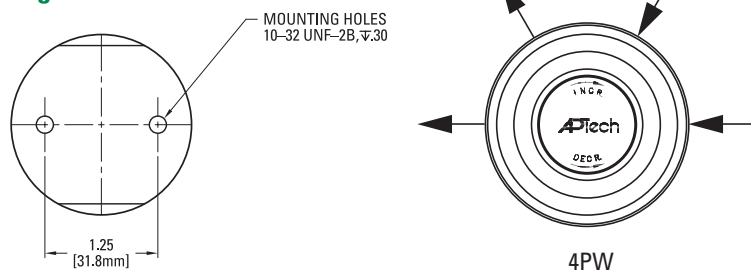


All dimensions in inches.
Metric dimensions (mm) are for reference only.

Pneumatic Actuator Note: Please refer to installation and operating instructions for dimensional and operating information related to this option.

Connection	A	
	inch	mm
FV4, MV4	1.85 ±.02	47.0

Porting



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ORDERING INFORMATION

KT 10 Series	L Pressure Range	1 Relieving Non-Relieving	S Body Material	4PW Ports	FV4 FV4 Connection Inlet Outlet	40 20 Gauge (Source/Delivery)	PK Options
KT 10F = 5-500 psig (0.35 to 35 bar) KT 10H = 5-800 psig (0.35 to 56 bar) KT 10J = 10-1,500 psig (0.7 to 95 bar) KT 10L = 15-2,500 psig (1 to 175 bar) KT 10N = 25-4,000 psig (1.7 to 280 bar)				4PW = 4 ports	MV4 = 1/4 inch face seal male FV4 = 1/4 inch face seal female *Standard gauge ports are MV4 (FV4 available)	0 = No gauge 6 = 600 psig/bar 10 = 1,000 psig/bar 20 = 2,000 psig/bar 40 = 4,000 psig/bar	HF = High flow PK = PEEK main valve seat UE = Polyurethane O-rings BN = Buna-N/NBR O-rings EP = Ethylene propylene O-rings
	1 = Self relieving (venting) 0 = Non-relieving (non-venting) 2 = Pneumatic actuator (non-venting)*						
	S = 316L stainless steel						

*Pneumatic actuator is only available with H, J, & N pressure ranges.

HMI14511/November2014



ADVANCED PRESSURE TECHNOLOGY

SERIES KT 12

SINGLE STAGE, HIGH FLOW, HIGH PRESSURE REGULATOR

- ◆ 6,000 psig inlet (414 bar)
5 to 2,500 psig outlet (0.35 to 172 bar)
- ◆ Stainless steel or brass construction
- ◆ Self relieving and non-relieving versions**
- ◆ Machined from bar stock
- ◆ Field repairable
- ◆ Fine adjustment control
- ◆ Piston sensing element
- ◆ High flow, 0.8 C_v
Higher flow, HF option, 2.0 C_v
- ◆ High flow with high delivery pressure
- ◆ Balanced poppet design
- ◆ Pneumatic actuator option for pneumatic outlet pressure control
- ◆ Installation and operating instructions available at www.aptech-online.com in the Tech Briefs section

**Self relieving model vents pressure above set point automatically for ease of pressure adjustment and for added safety. Non-relieving model does not vent.

MATERIALS OF CONSTRUCTION

MATERIAL OPTION

Body
Seat, valve
O-rings
Back up rings
Other parts
Poppet spring

C

SS, 300 series
PCTFE
Fluoroelastomer / FKM
PTFE
SS; 300 series, or PH 15-7 Mo
302 SS (HF option 17-7 PH)

B

Brass
PCTFE
Fluoroelastomer / FKM
PTFE
SS; 300 series, or PH 15-7 Mo
302SS (HF option 17-7 PH)

All specifications subject to change without notice.



ENGINEERING DATA

Operating Parameters

Source pressure*

SS body 6,000 psig (414 bar)

Brass body 5,000 psig (345 bar)

Delivery pressure

5 to 120 psig (0.35 to 8.3 bar)*

5 to 300 psig (0.35 to 21 bar)

5 to 600 psig (0.35 to 41 bar)

10 to 1,000 psig (0.7 to 69 bar)

15 to 1,500 psig (1.0 to 103 bar)

25 to 2,500 psig (1.7 to 172 bar)

Design proof pressure

150% of maximum rating

Design burst pressure

400% of maximum rating

Other Parameters

Inlet /outlet ports

1/2" and 3/4" NPT (options available)

Flow coefficient C_v

0.8 (opt HF 2.0)

C_v vent valve

0.06 (self relieving option only)

Operating temperature

-40 to +160F (-40 to +71C)

Leak rate

Bubble tight

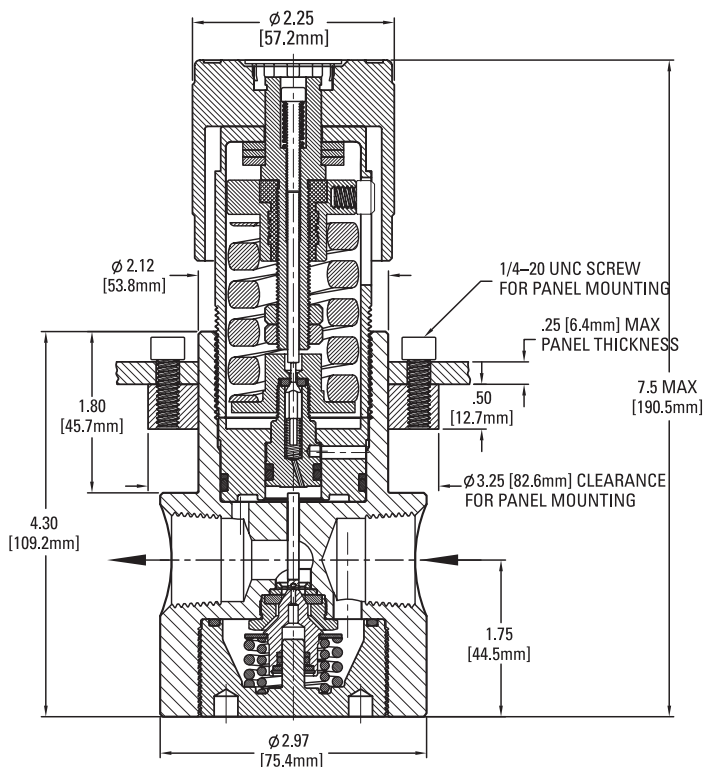
Self relieving**

Standard, non-relieving optional
(must be specified)

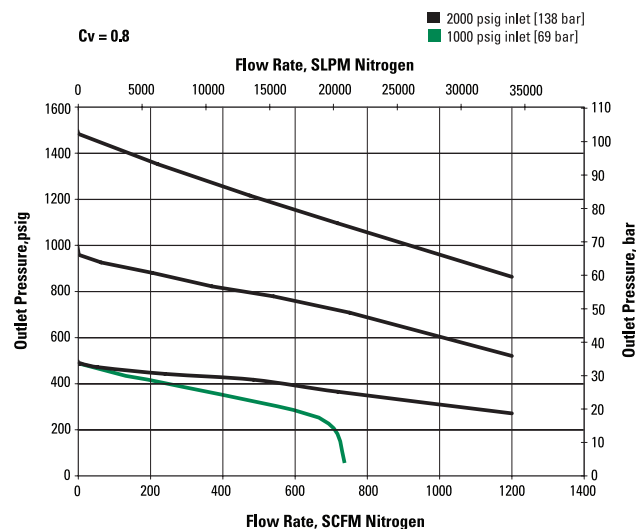
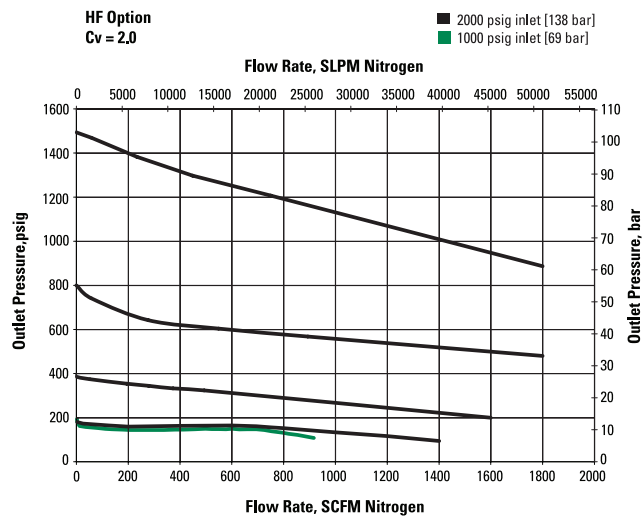
Shipping weight (approx.) 8 lb (3.6 kg)

*Source pressure for 120 psig max. delivery pressure option limited to 3500 psig (241 bar) max.

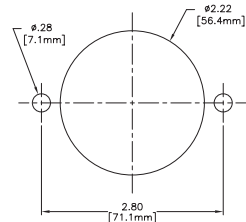
SERIES KT 12 — QUALITY, RELIABILITY & PERFORMANCE!



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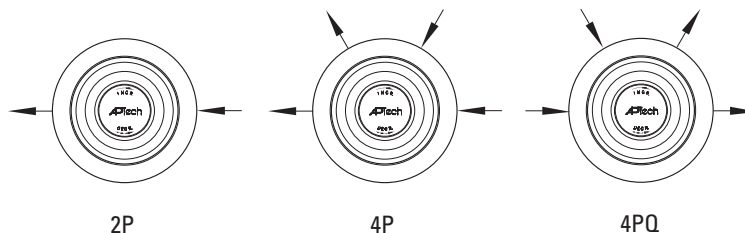


Panel Installations



Panel mount cut out dimension

Porting



ORDERING INFORMATION

KT 12 Series	J Pressure Range	1 Relieving Non-Relieving	C Material	4P Ports	8 Connection (Inlet/Outlet)	60 20 Gauge Source Delivery	P Options
KT 12B = 5-120 psig (0.35 to 8.3 bar)				2P = 2 ports	8 = 1/2 inch NPT	0 = No gauge	HF = High flow
KT 12E = 5-300 psig (0.35 to 21 bar)				4P = 4 ports	12 = 3/4 inch NPT	4 = 400 psig/bar	P = Panel installation**
KT 12G = 5-600 psig (0.35 to 41 bar)				4PQ = 4 ports		6 = 600 psig/bar	Note: HF option not recommended for H ₂ service.
KT 12I = 10-1,000 psig (0.7 to 69 bar)						10 = 1,000 psig/bar	
KT 12J = 15-1,500 psig (1.0 to 103 bar)						20 = 2,000 psig/bar	
KT 12L = 25-2,500 psig (1.7 to 172 bar)						40 = 4,000 psig/bar	
						60 = 6,000 psig/bar	
1 = Self relieving (venting)			Pneumatic Actuator Note: Please refer to installation and operating instructions for dimensional and operating information related to this option.			Gauge ports are 1/4 inch female NPT.	
0 = Non-relieving (non-venting)							
2 = Pneumatic actuator (non-venting)*							
B = Brass							
C = Stainless steel (SS), 300 series							

*Pneumatic actuator is only available with G, J and L pressure ratings.

**Panel mount not available with pneumatic actuator option.

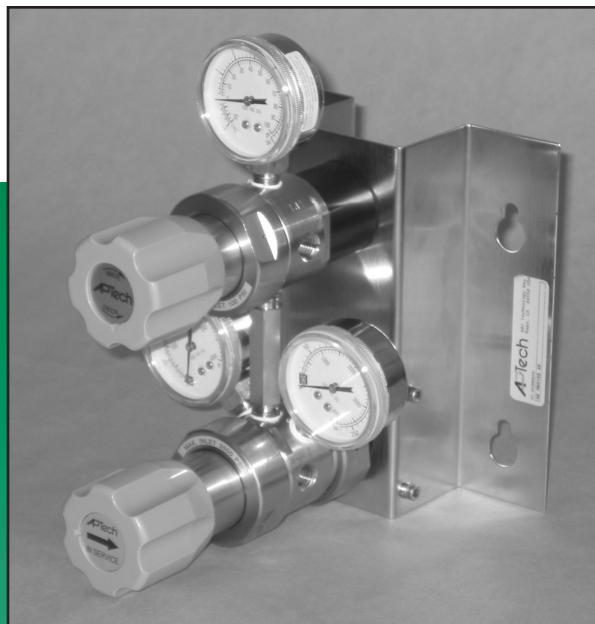
HMI13190/March2013



ADVANCED PRESSURE TECHNOLOGY

SERIES AK M80 CROSSOVER MANIFOLD ASSURES CONTINUOUS GAS SUPPLY

- ◆ Automatically switches from one cylinder to another when the primary cylinder empties
- ◆ Allows changing of cylinders during operation
- ◆ Simple, worry free, pressure based system
- ◆ Vacuum to 3,500 psig (241 bar) inlet, 250 psig (17 bar) outlet
- ◆ Flow capacity* to 50 slpm (1.8 scfm)
- ◆ Stainless Steel or Brass construction
- ◆ Diffusion resistant 316 SS diaphragm
- ◆ Cleaned for O₂ service
- ◆ Mounting bracket standard
- ◆ Two inlet and one outlet gauges standard
- ◆ Installation and operating instructions available at www.aptech-online.com in the Tech Briefs section



ENGINEERING DATA

Operating Parameters

Source pressure	Vacuum to 3,500 psig (241 bar)
Delivery pressure	1 to 30 psig (0.07 to 2 bar) M80 02 10 to 100 psig (0.7 to 7 bar) M80 10 15 to 150 psig (1 to 10 bar) M80 15 25 to 250 psig (1.7 to 17 bar) M80 25
Proof pressure	4,500 psig (307 bar)
Burst pressure	10,000 psig (690 bar)

Other Parameters

Inlet/outlet ports	1/4" NPT
Flow coefficient, Cv	0.05
Operating temperature	-40 to +160F (-40 to +71C)
Leak rate	1 x 10 ⁻⁹ sccs
Supply pressure effect	0.05 psig per 100 psig source pressure change
Weight	9.1 lb

MATERIALS OF CONSTRUCTION

	AK M80 B	AK M80 S	AK M80 SH
Body	brass	SS 316	SS 316
Poppet and diaphragm	SS 316	SS 316	Ni-Cr-Mo alloy / UNS N06022
Seat	PCTFE**	PCTFE**	PCTFE**
Bonnet	SS 303	SS 303	SS 303

* Flow rating based upon N₂ @ 200 psig inlet, varying gas type and, or inlet/outlet pressures may effect rating.

** Optional seat materials available, Polyimide and PEEK.

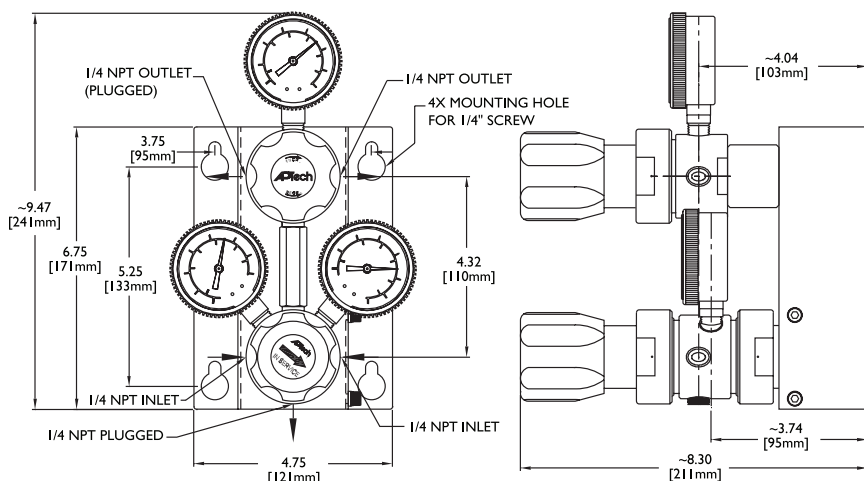
All specifications subject to change without notice.

M80 ASSURES PEACE OF MIND THROUGH CONSTANT GAS DELIVERY

Operations Overview

The M80 crossover manifold system is comprised of three pressure regulators – two separate first stage regulators housed in a common body and a second stage regulator. The two first stage regulators are each attached to separate source cylinders. The second stage is attached to a common outlet of the two first stage regulators. One of the first stage regulators has an adjustment knob that rotates 270 degrees to enable source side selection. The other first stage is preset to an appropriate setting for the system outlet range. The source selection knob adjusts the intermediate outlet pressure to be either 15 psig above or below the preset side. An arrow on the selection knob points to the cylinder side delivering gas and away from the standby cylinder. The intermediate outlet pressure of the first stage delivery side is approximately 15 psig (1 bar) higher than the standby side. Rotating the knob to point to the standby side, changes the pressure differential such that the standby side now becomes the delivery side. The process delivery pressure outlet is adjusted with the knob of the second stage regulator.

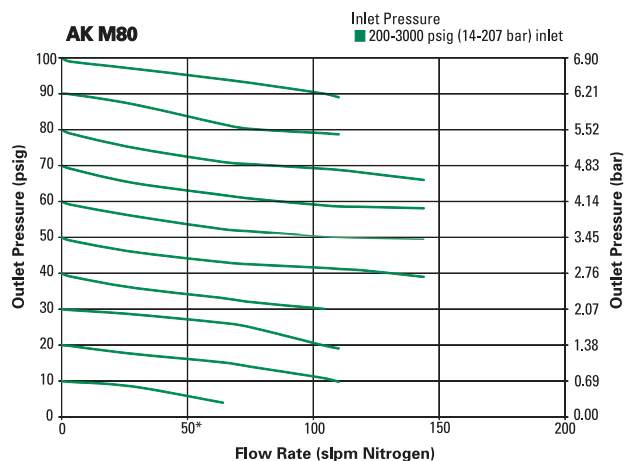
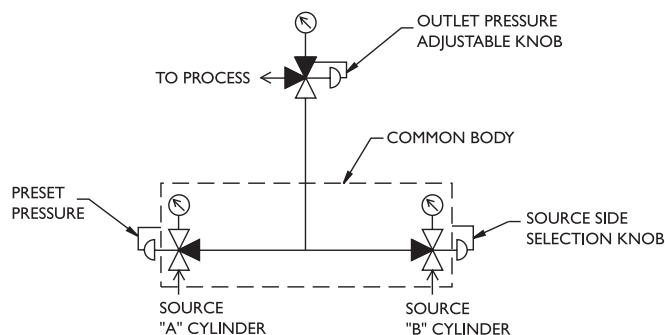
As the delivery side cylinder becomes empty and the pressure drops below the pressure of the standby side, gas begins to flow from the standby side. The source selection knob is then turned to what was the standby side and the empty cylinder may now be replaced without interrupting process flow.



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*Exceeding 50 slpm N2 may cause gas to be drawn from both A & B sides at the same time.

All dimensions in inches [mm]. Metric dimensions are for reference only.



ORDERING INFORMATION

Series AK M80 10	S Material	40 Inlet Gauges	VS Options
AK M80 02 = 1 - 30 psig (.07 to 2 bar) AK M80 10 = 2 - 100 psig (.7 to 7 bar) AK M80 15 = 15 - 150 psig (1 to 10 bar) AK M80 25 = 25 - 250 psig (1.7 to 17 bar)	S = Stainless steel 316 (SS) SH = SS with Ni-Cr-Mo alloy internals B = Brass	4 = 0-400 psig 6 = 0-600 psig 10 = 0-1,000 psig 20 = 0-2,000 psig 30 = 0-3,000 psig 40 = 0-4,000 psig Outlet Gauge, will be supplied to match outlet range, do not specify in part number	PK = PEEK seat VS = Polyimide seat

AP Tech has product options and variations which are not documented in data sheets. If you have a model number that is not defined by the ordering information, please consult the factory or your local representative.