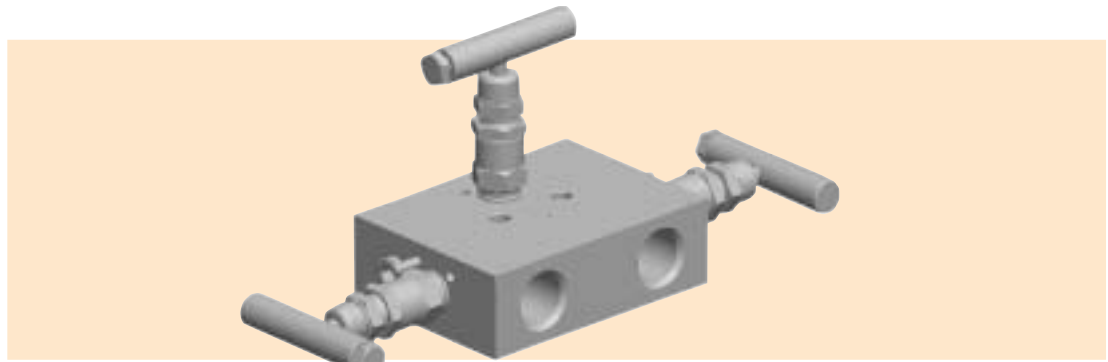


Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds



Product Brief

The KM1 is a 3-valve manifold designed for applications where direct mounting to an instrument is impractical or undesirable. This style manifold is mounted to the lines from the instrument and signal rather than directly to the instrument; a KMC Mount is also available. These manifolds are often used in conjunction with small differential pressure indicators, recording orifice meters, etc., that have connections other than the standard 2-1/8-inch (54 mm) distance between taps. A 3/16-inch (4.8 mm) orifice is provided. The standard manifold has integral metal seats, and soft seats (roddable) are available in various materials.

Features/Benefits

- **Isolated stem threads.** Adjustable packing below stem threads keeps process fluid away. Ensures leakproof, long service life.
- **Bubble-tight shutoff.**
- **Replaceable seat design.** Standard 3/16-inch diameter orifice.
- **Space-saving design.**
- **One valve does the work of three.** Saves money and labor.
- **Bonnet cap protection.** Increases valve life by protecting stem threads from atmospheric corrosion.
- **Rolled stem threads** for increased strength and life.
- **No more stem blowouts.** Backseat stem design prevents blowout problems.
- **Less parts** mean less leak points and less fugitive emissions.
- **1/4-inch test ports.**

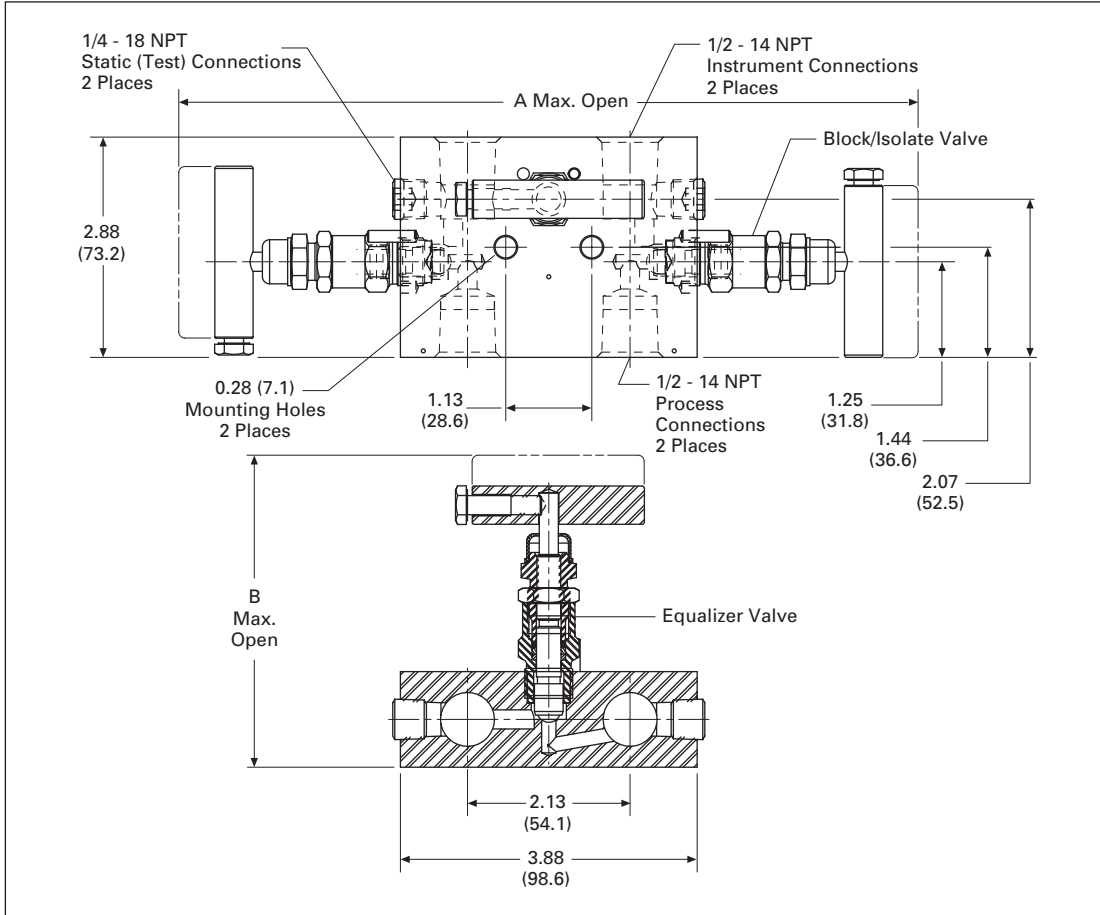


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Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds

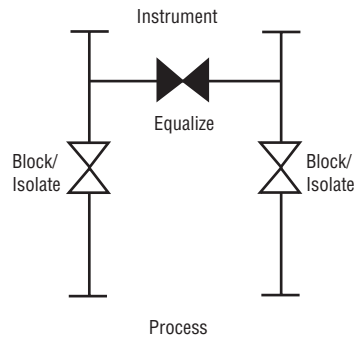
KM1 Specifications

Metal Seat Dimensions in Inches (mm)



Dimensions in Inches (mm)

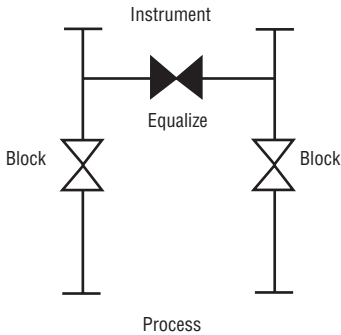
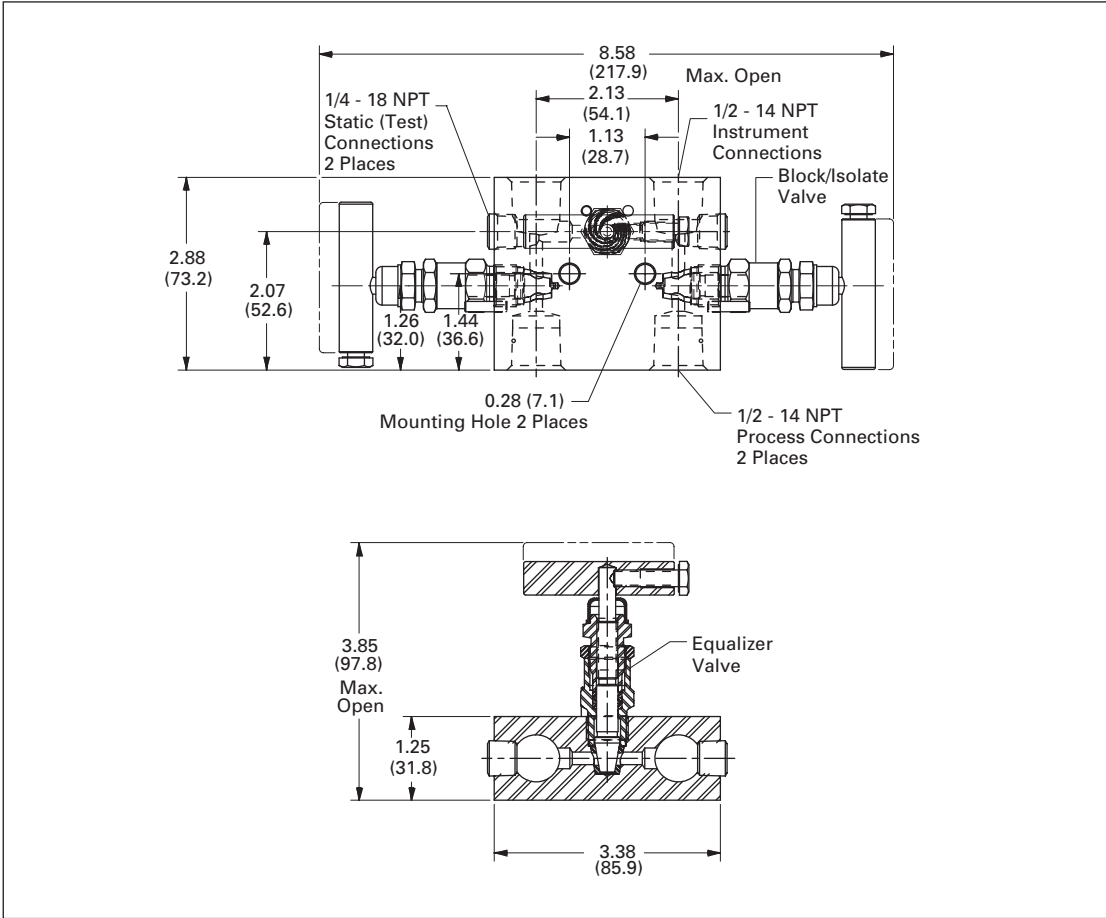
Packing	A	B
GRAFOIL®/Low Emissions Graphite	10.38 (263.7)	4.50 (114.3)
Teflon®	9.08 (230.6)	3.85 (97.8)



Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds

KM1 Specifications

Soft Seat Dimensions in Inches (mm)



Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds

KM1 Standard Materials

Metal Seat

Valve ①	Packing	Body and Bonnet	Stem and Ball
CS ②	Teflon, O-ring	A108 Body A108 Bonnet	A581-303 Stem 17-4PH Ball
CS ①	GRAFOIL/Low Emissions Graphite	A105 Body A105 Bonnet	A581-303 Stem 17-4PH Ball
SS	Teflon, O-ring	A479-316 Body A479-316 Bonnet	A276-316 Stem 316 SS Ball
SS	GRAFOIL/Low Emissions Graphite	A479-316 Body A479-316 Bonnet	A276-316 Stem 316 SS Ball
Monel®	Teflon	Monel 400 Body Monel R405 Bonnet	Monel 400 Stem Monel K500 Ball
Monel	GRAFOIL/Low Emissions Graphite	Monel 400 Body Monel R405 Bonnet	Monel 400 Stem Monel K500 Ball
SG ③, SG3 ④	Teflon	A479-316 Body A479-316 Bonnet	Monel 400 Stem Monel K500 Ball
SG ③, SG3 ④	GRAFOIL/Low Emissions Graphite	A479-316 Body A479-316 Bonnet	Monel 400 Stem Monel K500 Ball

Soft Seat

Valve ①	Packing	Body and Bonnet	Stem	Seat
CS ②	Teflon or Viton® O-ring w/ Teflon backup	A108 CS	A581-303	Delrin® ⑤
SS	Teflon or Viton O-ring w/ Teflon backup	A479-316	A276-316	Delrin ⑤
SG ③	Teflon	A479-316	Monel 400	Delrin ⑤
SG3 ④	Teflon	Hastelloy® C276	Hastelloy C276	Delrin ⑤

- ① Approximate valve weight: 4.0 lb (1.8 kg).
0.187-inch (4.8 mm) diameter orifice.
Metal Seat: Cv = .52, full open.
Soft Seat: Cv = .83, full open.
- ② CS parts are zinc cobalt-plated to prevent corrosion.
- ③ SG (Sour Gas) meets the requirements of NACE MR0175-2002.
- ④ SG3 (Sour Gas) meets the requirements of NACE MR0175-2003.
- ⑤ PCTFE (Polychlorotrifluoroethylene is equivalent of Kel-F®), PEEK and Teflon are also available.

Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds

KM1 Pressure and Temperature Ratings

Metal Seat

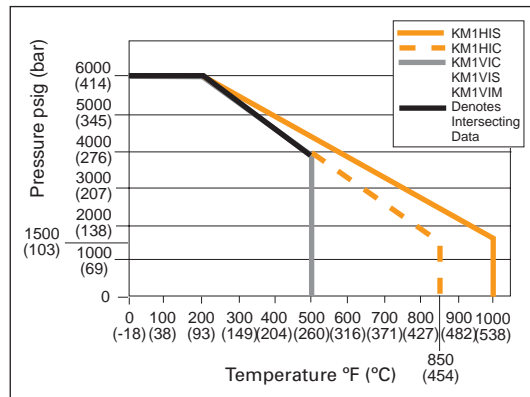
Valve	Packing	Ratings	
CS	Teflon, O-ring	6000 psig at 200°F (414 bar at 93°C)	4000 psig at 500°F (276 bar at 260°C)
CS	GRAFOIL/Low Emissions Graphite	6000 psig at 200°F (414 bar at 93°C)	1500 psig at 850°F (103 bar at 454°C)
SS, SG	Teflon, O-ring	6000 psig at 200°F (414 bar at 93°C)	4000 psig at 500°F (276 bar at 260°C)
SS, SG	GRAFOIL/Low Emissions Graphite	6000 psig at 200°F (414 bar at 93°C)	1500 psig at 1000°F (103 bar at 538°C)
Monel	Teflon	6000 psig at 200°F (414 bar at 93°C)	4000 psig at 500°F (276 bar at 260°C)
Monel	GRAFOIL/Low Emissions Graphite	6000 psig at 200°F (414 bar at 93°C)	1500 psig at 800°F (103 bar at 427°C)

Soft Seat

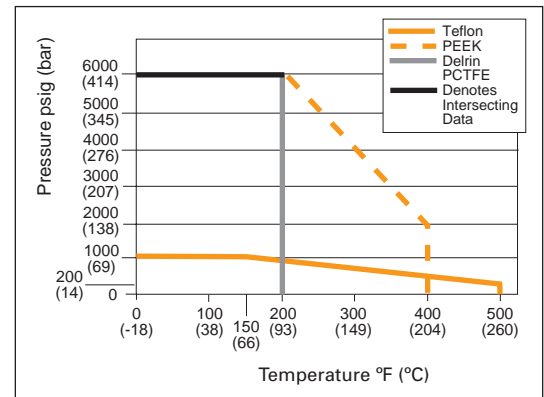
Seat	Ratings	
Delrin and PCTFE	6000 psig at 200°F (414 bar at 93°C)	
PEEK	6000 psig at 200°F (414 bar at 93°C)	2000 psig at 400°F (138 bar at 204°C)
Teflon	1000 psig at 150°F (69 bar at 66°C)	200 psig at 500°F (14 bar at 260°C)

Pressure vs. Temperature

Metal Seat



Soft Seat



Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds

Ordering Information – KM1 Metal Seat and Soft Seat

KM1	<u>H</u> 1.	<u>I</u> 2.	<u>S</u> 3.	– <u>4</u> 4.	– <u>SG</u> 5.
<p>1. Packing</p> <p>V – Teflon H – GRAFOIL E – Low Emissions Graphite R – O-ring (Viton) (Soft Seat Only)</p>	<p>S – SS, A479-316 M – Monel (Metal Seat Only) W – 316L SS J – Hastelloy</p>		<p>BP – Accessory Bracket – Mount Purge Meters with Option AM BL – Bonnet Lock Device CL – Cleaned for Chlorine Service OC – Cleaned for Oxygen Service HD – Hydrostatic Testing (100 Percent) (MSS-SP-61) MS – Monel Stem PHB – Phenolic Black Handle SG – Sour Gas Meets the Requirements of NACE MR0175-2002 (SS Valves Only) (Not Available for O-ring Packed Valves) SG3 – Sour Gas Meets the Requirements of NACE MR0175-2003 ST – Stellite Ball Ended Stem SP – Special Requirements – Please Specify</p>		
<p>2. Seat</p> <p>I – Integral (Body Material) D – Delrin V – Teflon E – PEEK K – PCTFE ①</p>	<p>4. Connection</p> <p>4 – 1/2-Inch FNPT</p>		<p>3. Options</p> <p>AL – Low Temperature Lubricant (Low Temperature Service -70°F) Not Available for CS Valves AM – KMC Mount Kit for Pipestand Mounting BC – Accessory Bracket – Mount Conduit with Option AM</p>		
<p>3. Body Material ①</p> <p>C – CS, A108 (Teflon Packed) CS, A105 (GRAFOIL and Low Emissions Graphite Packed)</p>					

① Call Kerotest for optional materials.

Ordering Information – KM1 (Power Industry)

KM1HP	<u>S</u> 1.	– <u>4</u> 2.	– <u>XP</u>	– <u>SP</u> 3.
<p>1. Body Material</p> <p>C – CS, A105 S – SS, A479-316 W – 316L SS J – Hastelloy</p>	<p>3TC4 – 3/8-Inch Tube Stub x 1/2-Inch FNPT x 1/2-Inch FNPT ① 3TB4 – 3/8-Inch Tube S.W. x 1/2-Inch FNPT x 1/2-Inch FNPT 4TC4 – 1/2-Inch Tube Stub x 1/2-Inch FNPT x 1/2-Inch FNPT ② 4TB4 – 1/2-Inch Tube S.W. x 1/2-Inch FNPT x 1/2-Inch FNPT 4B – 1/2-Inch FSW x 1/2-Inch FSW</p>		<p>3. Options</p> <p>AM – KMC Mount Kit for Pipestand Mounting SP – Special Requirements – Please Specify</p>	
<p>2. Connection</p> <p>4 – 1/2-Inch FNPT x 1/2-Inch FNPT x 1/2-Inch FNPT</p>				

① Tube stubs are 6-inch long x 0.065-inch wall.

② Tube stubs are 6-inch long x 0.095-inch wall.

Manifold ratings:

SST6000 psig @ 100°F (414 bar @ 38°C) 2915 psig @ 1000°F (201 bar @ 538°C)

STL6170 psig @ 100°F (425 bar @ 38°C) 3430 psig @ 800°F (236 bar @ 427°C)

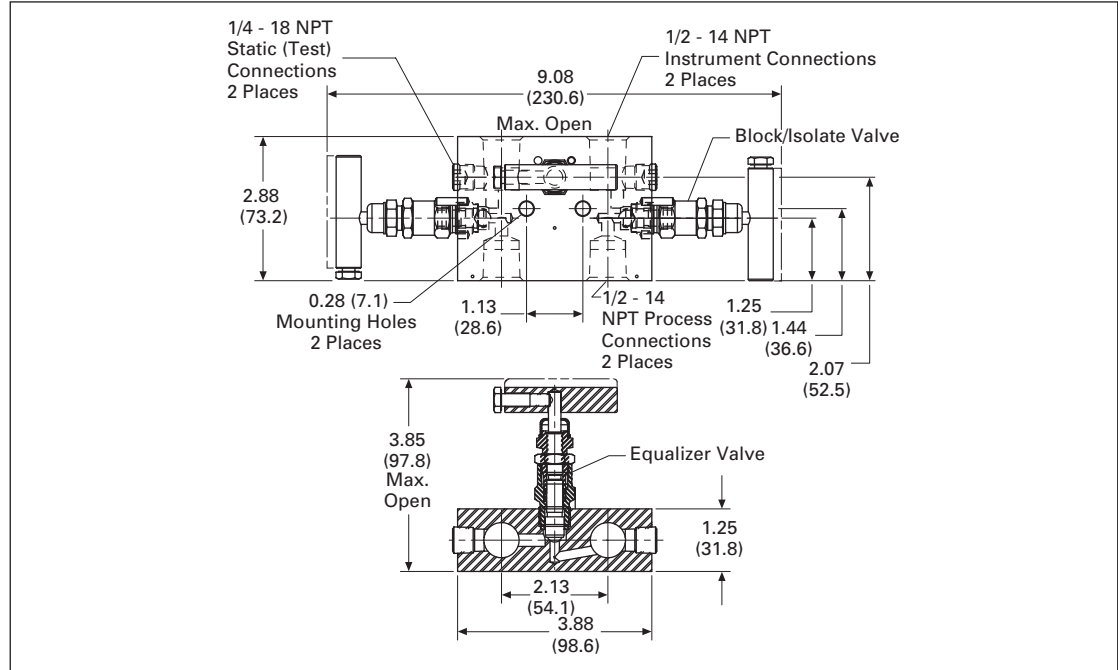
KM1 ASME B31.1 and B31.3 Specifications meet MSS-SP-105.

Note: All manifolds come standard with GRAFOIL packing, integral seats, bonnet locks, and are subjected to hydrostatic testing.

Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds

KM110 Specifications

Dimensions in Inches (mm)



Standard Materials

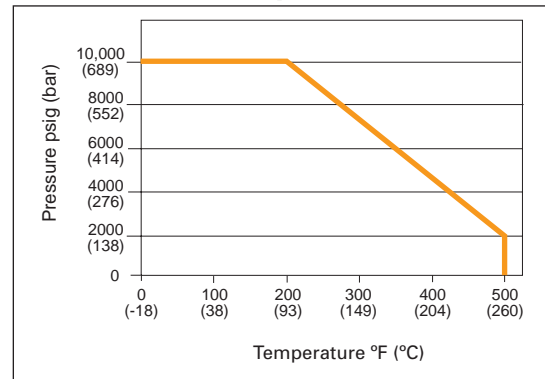
Valve ①	Body and Bonnet	Stem and Ball	Packing
SS	A479-316 Body A479-316 Bonnet	A276-316 Stem 316 SS Ball	Teflon
SG ②	A479-316 Body A479-316 Bonnet	Monel 400 Stem Monel K500 Ball	Teflon
SG3 ③	Hastelloy C276 A479-316 Bonnet	Hastelloy C276 A479-316 Bonnet	Teflon

Pressure and Temperature Ratings

Valve ①	Packing	Ratings
SS	Teflon	10,000 psig at 200°F (689 bar at 93°C) 4000 psig at 500°F (276 bar at 260°C)
SG ②	Teflon	10,000 psig at 200°F (689 bar at 93°C)
SG3 ③	Teflon	4000 psig at 500°F (276 bar at 260°C)

- ① Approximate valve weight: 4.0 lb (1.8 kg).
0.187-inch (4.8 mm) diameter orifice.
Cv = .52, full open.
- ② SG (Sour Gas) meets the requirements of NACE MR0175-2002.
- ③ SG3 (Sour Gas) meets the requirements of NACE MR0175-2003.

Pressure vs. Temperature



Kerotest KM1 & KM110 3-Valve Differential Pressure Manifolds

Ordering Information

KM110	V 1.	I 2.	S 3.	-	4 4.	-	SG 5.
1. Packing	4. Connection		MS – Monel Stem PHB – Phenolic Black Handle SG – Sour Gas Meets the Requirements of NACE MR0175-2002 SG3 – Sour Gas Meets the Requirements of NACE MR0175-2003 ST – Stellite Ball Ended Stem SP – Special Options – Please Specify				
V – Teflon	4 – 1/2-Inch FNPT						
2. Seat	5. Options						
I – Integral (Body Material)	AL – Low Temperature Lubricant (Low Temperature Service) AM – KMC Mount Kit for Pipestand Mounting BC – Accessory Bracket – Mount Conduit with Option AM BP – Accessory Bracket – Mount Purge Meters with Option AM BL – Bonnet Lock Device CL – Cleaned for Chlorine Service OC – Cleaned for Oxygen Service HD – Hydrostatic Testing (100 Percent) (MSS-SP-61)						
3. Body Material ①							
S – SS, A479-316							

① Call Kerotest for optional materials.

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Kerotest Manufacturing Corp.

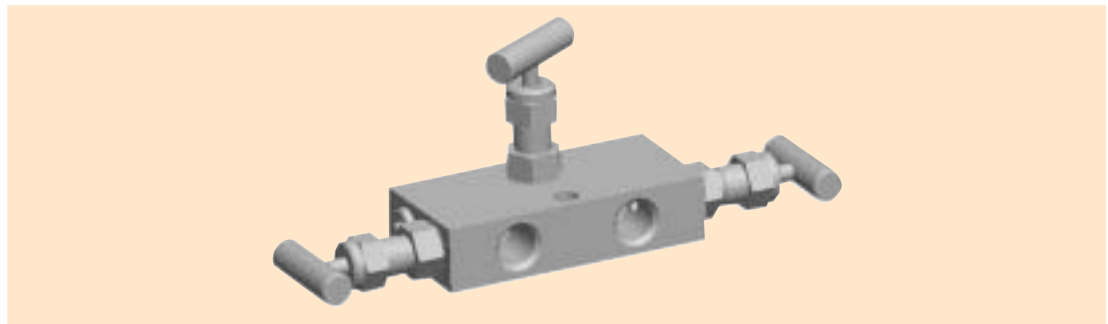
5500 Second Avenue, Pittsburgh, PA 15207

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email: sales@kerotest.com

www.kerotest.com

Kerotest KMM1 3-Valve Differential Pressure Mini-Manifold



Product Brief

The KMM1 is a miniature 3-valve manifold designed for remote installation in confined spaces. It is ideal for cabinet mounting and also for portable devices due to its low profile and efficient flow characteristics. This style manifold is often used to set differential pressure switches and other instruments during process or plant start-up. Both hard and soft seat versions are available. The KMM1 manifold is installed in the lines between the process and the instrument, and also used with miniature differential pressure-measuring devices.

Features/Benefits

- **Bubble-tight shutoff.**
- **Replaceable seat design.**
- **Space-saving, compact design.**
- **One valve does the work of three.**
Saves money and labor.
- **O-ring stem seal option** isolates the stem threads from the process, preventing galling and corrosion due to exposure to the process.
- **Rolled stem threads** for increased strength and life.
- **No more stem blowouts.** Backseat stem design prevents blowout problems.
- **Less parts** mean less leak points and less fugitive emissions.
- **1/8-inch test ports.**

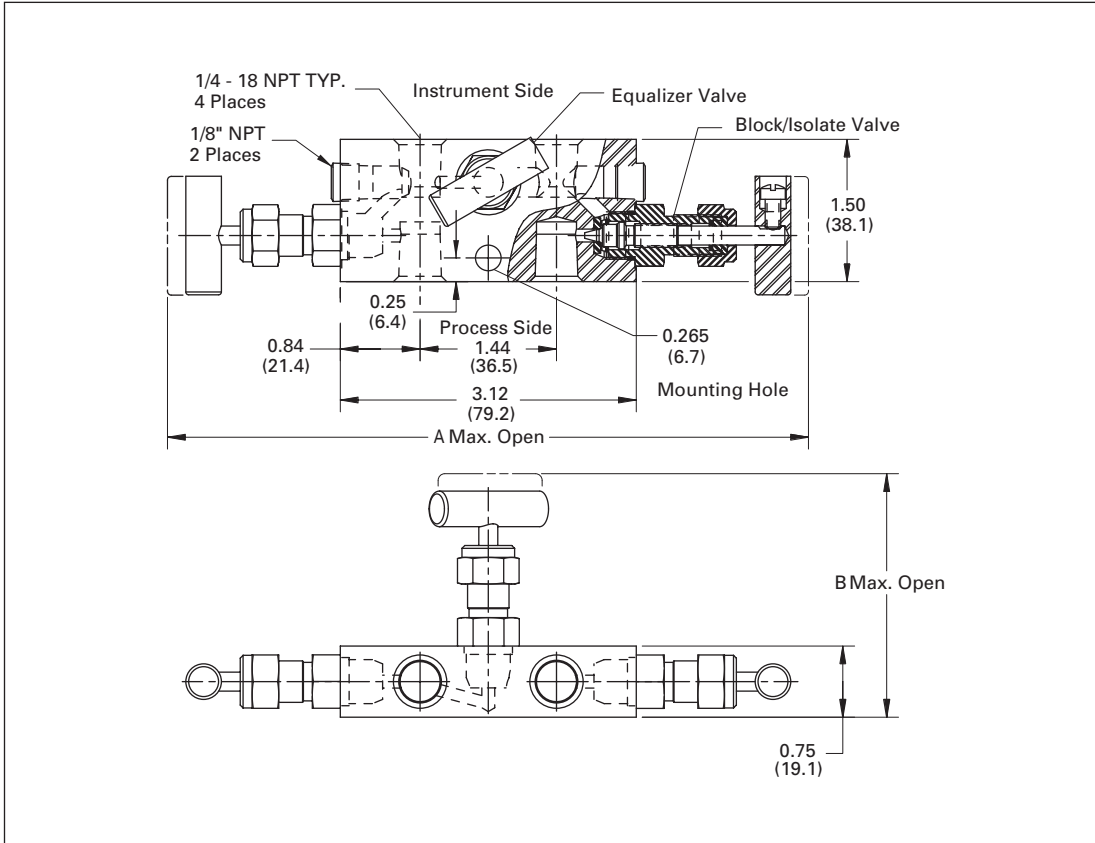


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Kerotest KMM1 3-Valve Differential Pressure Mini-Manifold

Specifications

Dimensions in Inches (mm)



Dimensions in Inches (mm)

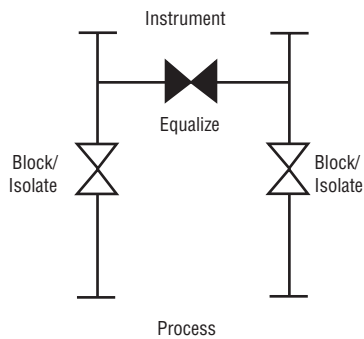
Packing	A	B
O-ring	5.62 (142.7)	2.00 (50.8)
Teflon®	6.82 (173.2)	2.60 (66.0)

Notes:

Approximate valve weight: 1.0 lb (0.4 kg)
0.136-inch (3.5 mm) diameter orifice.

Hard Seat: Cv = .25, full open.

Soft Seat: Cv = .24, full open.



Kerotest KMM1 3-Valve Differential Pressure Mini-Manifold

Standard Materials

Valve	Body	Bonnet	Stem	Flow Washer ^①
CS ^②	A108	A108	A581-303	316
Brass	B16	B16	A581-303	316
SS	A276-316	A479-316	A276-316	316
SG ^③	A276-316	A479-316	Monel [®] R405	316

Pressure and Temperature Ratings

Valve	Packing	Soft Seat Delrin [®] /PTFE ^④	Soft Seat PEEK	Metal Seat
CS ^②	BUNA-N O-ring	3000 psig at 200°F (207 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)
CS ^②	Teflon	3000 psig at 200°F (207 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)
			3000 psig at 300°F (207 bar at 149°C)	4000 psig at 500°F (276 bar at 260°C)
Brass	BUNA-N O-ring	3000 psig at 200°F (207 bar at 93°C)	3000 psig at 200°F (207 bar at 93°C)	3000 psig at 200°F (207 bar at 93°C)
Brass	Teflon	3000 psig at 200°F (207 bar at 93°C)	3000 psig at 300°F (207 bar at 149°C)	3000 psig at 400°F (207 bar at 204°C)
SS	Viton [®] O-ring	3000 psig at 200°F (207 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)
SS	Teflon	3000 psig at 200°F (207 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)
			3000 psig at 300°F (207 bar at 149°C)	4000 psig at 500°F (276 bar at 260°C)
SG ^③ SG3 ^⑤	Teflon	3000 psig at 200°F (207 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)	6000 psig at 200°F (414 bar at 93°C)
			3000 psig at 300°F (207 bar at 149°C)	4000 psig at 500°F (276 bar at 260°C)

^① Soft seated valves only.

^② CS is zinc cobalt-plated to prevent corrosion.

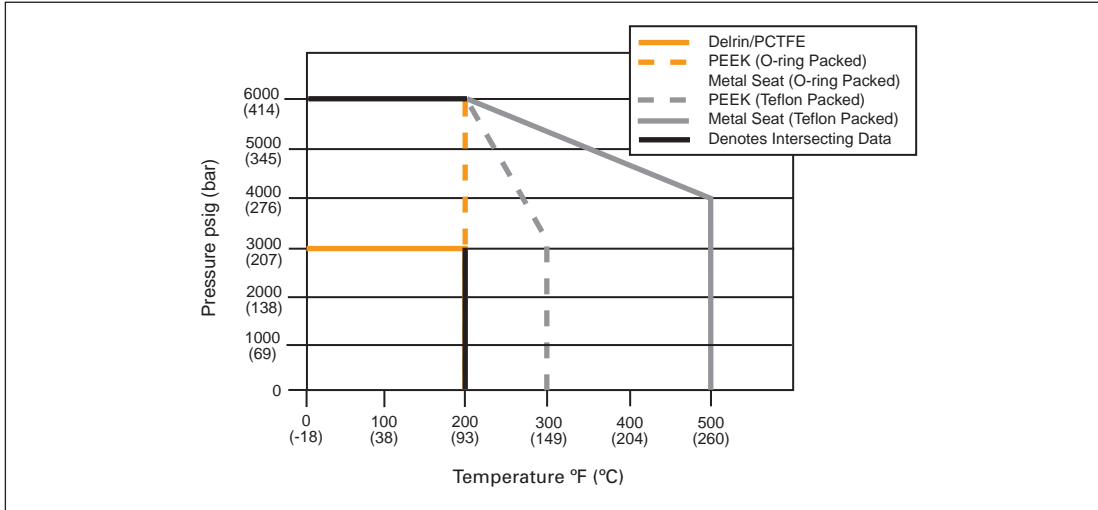
^③ SG (Sour Gas) meets the requirements of NACE MR0175-2002.

^④ PCTFE (Polychlorotrifluoroethylene) is the equivalent of Kel-F[®].

^⑤ SG3 (Sour Gas) meets the requirements of NACE MR0175-2003.

Kerotest KMM1 3-Valve Differential Pressure Mini-Manifold

Pressure vs. Temperature



Ordering Information

KMM1 **V** **D** **S** - **2** - **SG**

1. 2. 3. 4. 5.

<p>1. Packing</p> <p>V – Teflon R – O-ring</p>	<p>3. Body Material</p> <p>C – CS, A108 B – Brass B16 S – SS, A276-316 J – Hastelloy®</p>	<p>5. Options</p> <p>SG – Sour Gas Meets the Requirements of NACE MR0175-2002 (SS Valves Only) (Not Available for O-ring Packed Valves)</p> <p>SG3 – Sour Gas Meets the Requirements of NACE MR0175-2003</p>
<p>2. Seat</p> <p>D – Delrin K – PCTFE E – PEEK I – Integral (Body Material)</p>	<p>4. Connection</p> <p>2 – 1/4-Inch FNPT</p>	

All product names referenced herein are trademarks of their respective companies.

Kerotest Manufacturing Corp.

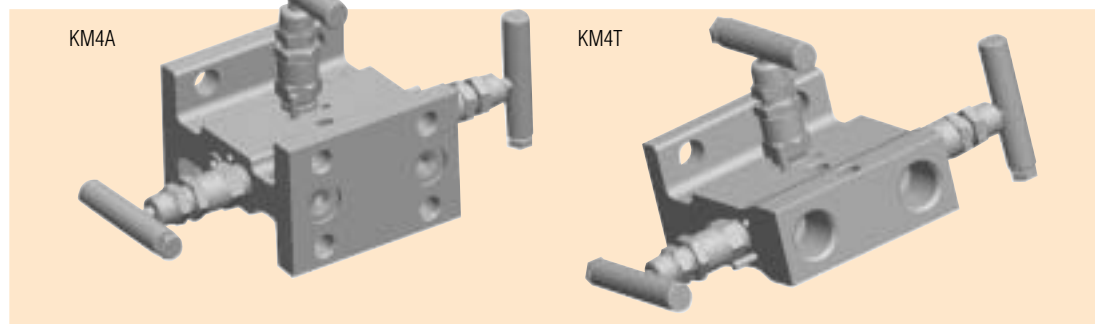
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Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds



Product Brief

The KM4 style 3-valve manifold is designed for either direct (4A) or remote (4T) mounting to differential pressure transmitters with 2-1/8 inch (54 mm) centers. It contains two (2) main block valves plus an equalizing valve.

Features/Benefits

- **Bubble-tight shutoff.** Every valve 100% tested.
- **Space-saving design.** One valve replaces three. Less parts equals less leaks, equals less fugitive emissions.
- **Roddable** design of soft seat valves often eliminates purge-style cleaning, simplifying maintenance.
- **Blowout-proof stem.** Stem design prevents accidental back-out, eliminates blowout problems.
- **Rolled stem and bonnet threads** increase strength, wear resistance and life.
- **Highly polished** stems yield easier operation and increased packing life.
- **Metal-to-metal bonnet-to-body seal** maintains pressure integrity, eliminates bonnet thread process corrosion, and ensures a reliable seal.
- **Stem threads isolated** from the process fluid. Packing adjustment below the threads prevents thread corrosion.
- **Multiple packing options** available including Teflon® and GRAFOIL® packing.
- **Bonnet cap** protects stem threads from atmospheric corrosion, increases valve life.
- **Direct pipestand mounting** to 2-inch pipe. Requires KMC Mounting Kit. Permits complete piping installation without the transmitter and simplified instrument removal.
- **Soft seat** is field-replaceable with valve in line. Metal seats also available.

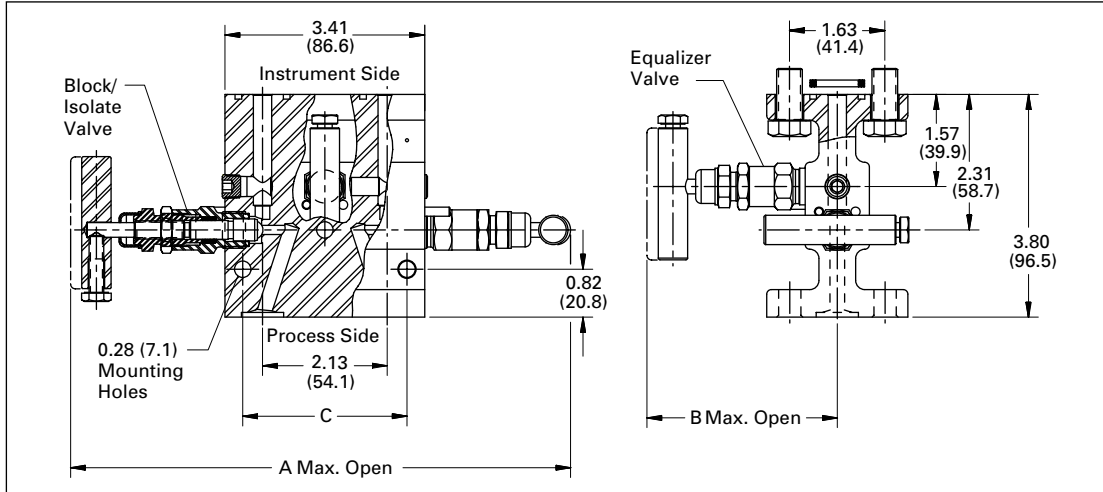


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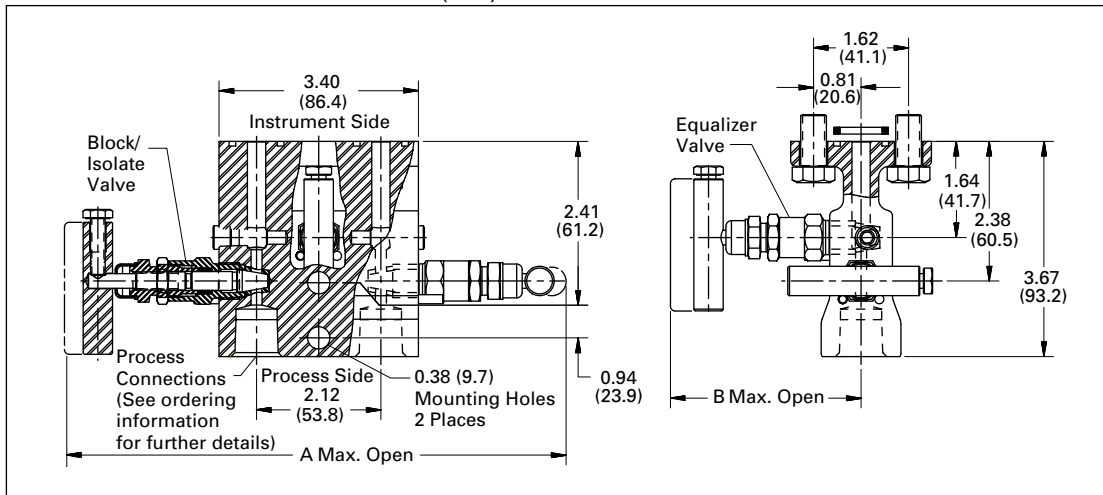
Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds

Specifications

KM4A Metal Seat Dimensions in Inches (mm)



KM4T Soft Seat Dimensions in Inches (mm)



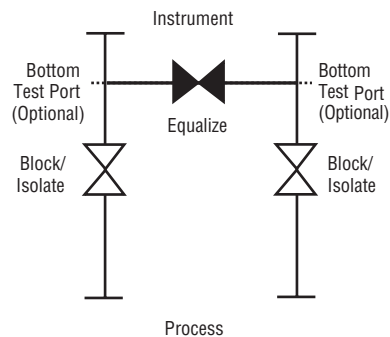
Dimensions, Inches [mm]

Valve ①	A	B	C
Soft Seat – Teflon Packed	8.60 (218)	3.20 (81)	1.06 (27)
Metal Seat – Teflon Packed	8.60 (218)	3.20 (81)	2.80 (71)
Metal Seat – GRAFOIL Packed	9.90 (251)	3.85 (98)	2.80 (71)

① Approximate valve weight: KM4A = 4.7 lb (2.1 kg)
KM4T = 4.5 lb (2.0 kg)

Metal Seat: 0.156-inch (4.0 mm) diameter orifice.
CV = .36, full open.

Soft Seat: 0.187-inch (4.8 mm) diameter orifice.
CV = .83, full open.



Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds

Standard Materials

Metal Seat

Valve	Body ①	Bonnet	Stem	Ball
CS ②	A576-10L18	A108 CS	A581-303	17-4 PH
CS ②	A576-10L18	A105 CS	A581-303	17-4 PH
SS	A479-316	A479-316	A276-316	316 SS
SG ③	A479-316	A479-316	Monel 400	Monel K500
Monel®	Monel 400	Monel R405	Monel 400	Monel K500
Hastelloy®	Hastelloy C276	Hastelloy C276	Hastelloy C276	Stellite
SG3 ④	Hastelloy C276	Hastelloy C276	Hastelloy C276	Stellite

Soft Seat

Valve	Body	Bonnet	Stem	Seat
CS ②	A576-10L18	A108 CS	A581-303	Delrin®
SS	A479-316	A479-316	A276-316	Delrin
SG ③	A479-316	A479-316	Monel 400	Delrin
SG3 ④	Hastelloy C276	Hastelloy C276	Hastelloy C276	Delrin

① Instrument mounting kit furnished with the KM4 includes four (4) A193-B7 bolts and two (2) Teflon or GRAFOIL flange gaskets to match bonnet packing.

② CS parts are zinc cobalt-plated to prevent corrosion.

③ SG (Sour Gas) meets the requirements of NACE MR0175-2002.

④ SG3 (Sour Gas) meets the requirements of NACE MR0175-2003.

Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds

Pressure and Temperature Ratings

Metal Seat

Valve	Packing	Ratings ①	
CS ②	Teflon	6000 psig at 200°F 4000 psig at 500°F	(414 bar at 93°C) (276 bar at 260°C)
CS ②	GRAFOIL Graphite	6000 psig at 200°F 4000 psig at 600°F	(414 bar at 93°C) (276 bar at 316°C)
SS	Teflon	6000 psig at 200°F 4000 psig at 500°F	(414 bar at 93°C) (276 bar at 260°C)
SS	Graphite GRAFOIL	6000 psig at 200°F 1500 psig at 1000°F	(414 bar at 93°C) (103 bar at 538°C)
SG ③ or SG3 ④	Teflon	6000 psig at 200°F 4000 psig at 500°F	(414 bar at 93°C) (276 bar at 260°C)
SG ③ or SG3 ④	GRAFOIL	6000 psig at 200°F 1500 psig at 1000°F	(414 bar at 93°C) (103 bar at 538°C)
Monel	Teflon	5300 psig at 200°F 4200 psig at 500°F	(360 bar at 93°C) (290 bar at 260°C)
Hastelloy	Teflon	6000 psig at 200°F 4000 psig at 500°F	(414 bar at 93°C) (276 bar at 260°C)

Soft Seat

Valve	Packing	Ratings ①	
CS ②	Teflon	6000 psig at 200°F	(414 bar at 93°C)
SS	Viton® O-ring with Teflon Backup ring	6000 psig at 200°F	(414 bar at 93°C)
SG ③ or SG3 ④	Teflon	6000 psig at 200°F	(414 bar at 93°C)

① 316 SS bolts lower pressure ratings to a maximum of 4500 psig (310 bar). Consult factory for full rating with 316 SS bolts.

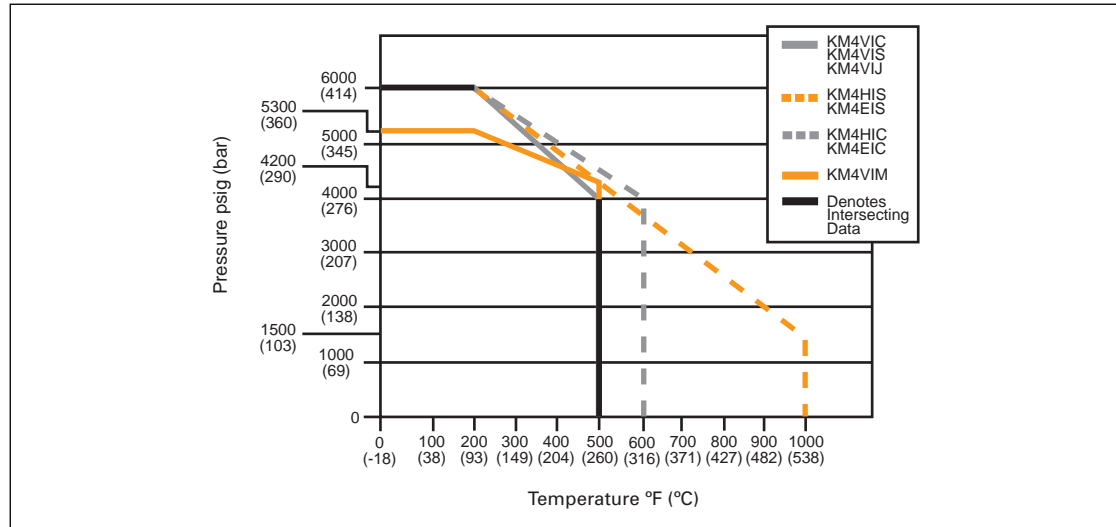
② CS parts are zinc cobalt-plated to prevent corrosion.

③ SG (Sour Gas) meets the requirements of NACE MR0175-2002.

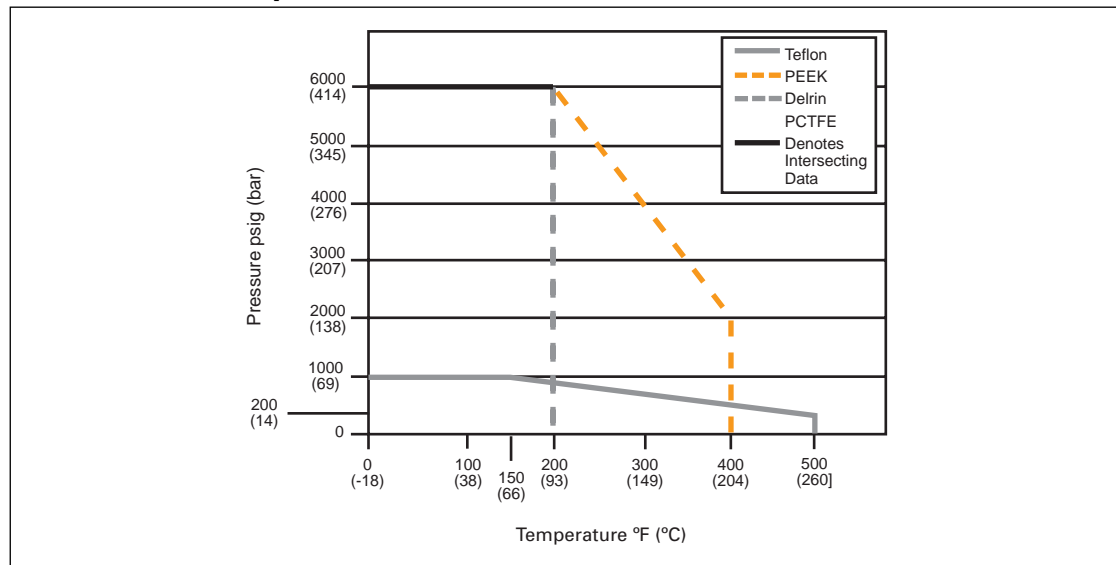
④ SG3 (Sour Gas) meets the requirements of NACE MR0175-2003.

Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds

Pressure vs. Temperature – Metal Seat



Pressure vs. Temperature – Soft Seat



Note: 316 SS bolts lower pressure ratings to a maximum of 4500 psig (310 bar). Consult factory for full rating with 316 SS bolts.

Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds

Ordering Information – Soft Seat

KM4T	V	D	S	–	4	–	SG
1.	2.	3.	4.		5.		6.
<p>1. Valve Type</p> <p>KM4A – 3-Valve Manifold, Flange x Flange KM4T – 3-Valve Manifold, FNPT x Flange</p>	<p>2. Bonnet Packing</p> <p>V – Teflon R – O-ring (Viton)</p>	<p>3. Seat</p> <p>D – Delrin K – PCTFE E – PEEK V – Teflon</p>	<p>4. Body Material</p> <p>C – CS ①, A576-10L18 W – SS, A479-316L S – SS, A479-316 J – Hastelloy</p>	<p>5. Process Connections (KM4T Only)</p> <p>4 – 1/2-Inch FNPT AT ② – Integral Single Ferrule Tube Fittings (4AT 1/2-Inch, 316 SS) ATD ② – Integral Dual Ferrule Tube Fittings (4ATD 1/2-Inch, 316 SS)</p>	<p>6. Options</p> <p>AL – Low Temperature Lubricant (-70°F) Not Available for CS Valve AM – KMC Mount Kits (For Pipestand Mounting of Manifold) (CS) BC – Accessory Bracket-Mount Conduit with Option KM BL – Bonnet Lock Device BP – Accessory Bracket – Mount Purge Meters with Option AM CL – Cleaned for Chlorine Service HD – Hydrostatic Testing (100%) (MSS-SP-61) MS – Monel Stem (Standard on Monel Valves and SG Valves) OC – Cleaned for Oxygen Service PHB – Phenolic Black Handle R3V – Add for Use with Rosemount® Model 3051C (SS 18-8 Bolts) SB – Steam Block (CS) AMS – AM, Stainless Steel Bracket</p>	<p>SG – Sour Gas Meets the Requirements of NACE MR0175-2002 (SS Valves Only) (Not Available for O-ring Packed Valves) SG3 – Sour Gas Meets the Requirements of NACE MR0175-2003 SSA ③ – SS Flange Bolt (Grade 18-8) – Maximum Pressure Rating 4500 psig (310 bar) SSC ③ – 316 Flange Bolt (B8M) – Maximum Pressure Rating 4500 psig (310 bar) TB – Test Ports – Bottom of Manifold (1/4-Inch FNPT) (Option Not Available for KM4A with Option AM) TR68 – Add for Use with Rosemount Models 1151DP 6, 7, 8 and 1151HP 6, 7, 8 and any DP Transmitter with Bolt Spacing Between 2.13-Inch (54 mm) and 2.28-Inch (58 mm) SP – Special Requirements – Please Specify</p>	

① CS parts are zinc cobalt-plated to prevent corrosion.

② Integral tube fitting design.

③ 316 SS bolts lower pressure ratings to a maximum of 4500 psig (310 bar). Consult factory for full rating with 316 SS bolts.

Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds

Ordering Information – Metal Seat

KM4T	<u>V</u>	<u>I</u>	<u>S</u>	-	<u>4</u>	-	<u>SG</u>
1.	2.	3.	4.		5.		6.
<p>1. Valve Type</p> <p>KM4A–3-Valve Manifold, Flange x Flange KM4T– 3-Valve Manifold, FNPT x Flange</p>	<p>2. Bonnet Packing</p> <p>V – Teflon H – GRAFOIL E – Low Emissions Graphite (Except M45A)</p>	<p>3. Seat</p> <p>I – Integral (Body Material)</p>	<p>4. Body Material</p> <p>C – CS, A576-10L18 S – SS, A479-316 M – Monel 400 (KM4A and KM4T Only) J – Hastelloy W – SS, A479-316L</p>	<p>5. Process Connections (KM4T Only)</p> <p>4 – 1/2-Inch FNPT AT^① – Integral Single Ferrule Tube Fittings (4AT1/2-Inch, 316 SS) ATD^① – Integral Dual Ferrule Tube Fittings (4ATD 1/2-Inch, 316 SS)</p>	<p>6. Options</p> <p>AL – Low Temperature Lubricant (-70°F) Not Available for CS Valves AM – KMC Mount Kits (CS) (For Pipestand Mounting of Manifold) BC – Accessory Bracket – Mount Conduit with Option AM BL – Bonnet Lock Device BP – Accessory Bracket – Mount Purge Meters with Option AM CL – Cleaned for Chlorine Service HD – Hydrostatic Testing (100%) (MSS-SP-61) LP – Street Elbows and Top Purge Ports MS – Monel Stem (Standard on Monel Valves and SG Valves) OC – Cleaned for Oxygen Service PB – Bottom Purge Ports (1/4-Inch FNPT) (Not Available with Option SB) (KM4T Metal Seat Only) (Option Not Available for KM4A with Option AM) PHB – Phenolic Black Handle PT – Top Purge Ports (1/4-Inch FNPT) (Metal Seat Only) (If Elbows are Required, Specify Option LP, not Option PT) AMS – AM, Stainless Steel Bracket</p>	<p>R3V – Add for Use with Rosemount Model 3051C (SS 18-8 Bolts) SB – Steam Block (CS) SG – Sour Gas Meets the Requirements of NACE MR0175-2002 (SS Valves Only) (Not Available for O-ring Packed Valves) SG3 – Sour Gas Meets the Requirements of NACE MR0175-2003 SSA^② – SS Flange Bolt (Grade 18-8) Maximum Pressure Rating 4500 psig (310 bar) SSC^② – 316 Flange Bolt (B8M) – Maximum Pressure Rating 4500 psig (310 bar) ST – Stellite Ball Ended Stem TB – Test Ports – Bottom of Manifold (1/4-Inch FNPT) (Option Not Available for KM4A with Option AM) TR68 – Add for Use with Rosemount Models 1151DP 6, 7, 8 and 1151HP 6, 7, 8 and any DP Transmitter with Bolt Spacing Between 2.13-Inch (54 mm) and 2.28-Inch (58 mm) (Metal Seat Only) SP – Special Requirements – Please Specify</p>	

① Integral tube fitting design.

② 316 SS bolts lower pressure ratings to a maximum of 4500 psig (310 bar). Consult factory for full rating with 316 SS bolts.

Kerotest KM4A & KM4T 3-Valve Differential Pressure Manifolds

Ordering Information – Power Industry Applications ^①

KM4THP 1.	S 2.	–	4 3.	–	XP	–	AM 4.
1. Valve Type KM4AHP – 3-Valve Manifold, Flange x Flange KM4THP – 3-Valve Manifold, FNPT x Flange	2. Body Material S – SS, A479-316 ^②	3. Connections (Process x Instrument x Vent) 4 – 1/2-Inch FNPT x Flange x 1/4-Inch FNPT 4AT – 1/2-Inch KMC Tube x Flange x 1/4-Inch FNPT 4B – 1/2-Inch Pipe S.W. x Flange x 1/4-Inch FNPT 4TB – 1/2-Inch Tube S.W. x Flange x 1/4-Inch FNPT	4. Options AM – KMC Mount Kits (CS) (For Pipestand Mounting of Manifold) TB – Bottom Test Ports on KM4THP Only SP – Special Requirements – Please Specify				

^① All Manifolds come standard with GRAFOIL packing, integral seats, bonnet locks, and are subject to hydrostatic testing.

^② Manifold ratings: SST 6170 psig at 100°F (425 bar at 38°C) / 3430 psig at 800°F (236 bar at 427°C).

Note: Integral tube fitting design. Test bottom ports standard.

All product names referenced herein are trademarks of their respective companies.

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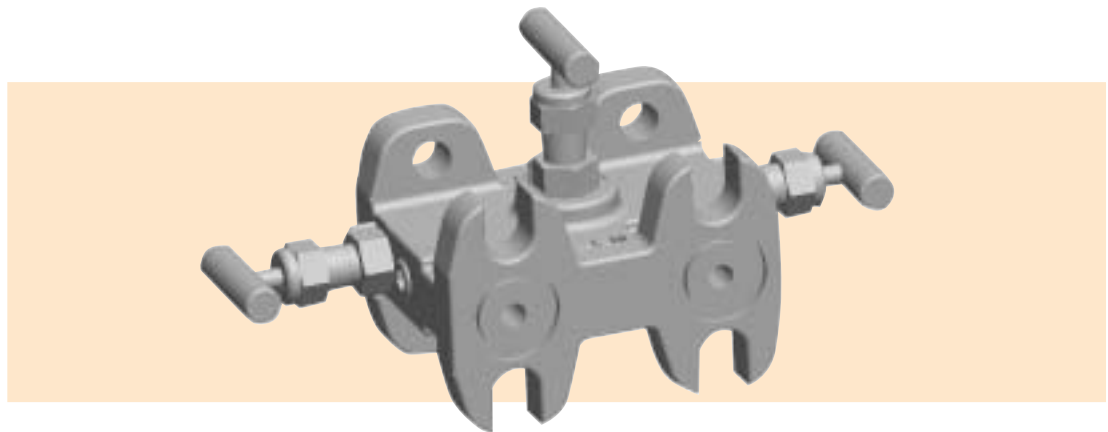
5500 Second Avenue, Pittsburgh, PA 15207

(412) 521-7688 FAX: (412) 521-7853

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www.kerotest.com

Kerotest KMM4A 3-Valve Differential Pressure Mini-Manifold



Product Brief

The KMM4A style 3-valve mini-manifold is designed as a compact, low-cost alternative to full size 3-valve manifolds. It is suitable for close, direct or remote mounting. It contains two (2) main block valves plus an equalizing valve.

Features/Benefits

- **Bubble-tight shutoff.** Every valve 100% tested.
- **Compact, space-saving design.** One valve replaces three. Less parts equals less **leaks**, equals less **fugitive emissions**.
- **Blowout-proof stem.** Stem design prevents accidental back-out, eliminates blowout problems.
- **Rolled stem and bonnet threads** increase strength, wear resistance and life.
- **Highly polished stems** yield easier operation and increased packing life.
- **Metal-to-metal bonnet-to-body seal** maintains pressure integrity, and eliminates bonnet thread process corrosion.
- **Direct pipestand mounting** to 2-inch pipe. Requires KMC Mounting Kit. Permits complete piping installation without the transmitter and simplified instrument removal.
- **Soft seat** is field-replaceable with valve in line. Metal seats also available.
- **Stem threads isolated** from the process fluid by O-ring stem seal. Prevents stem thread corrosion.

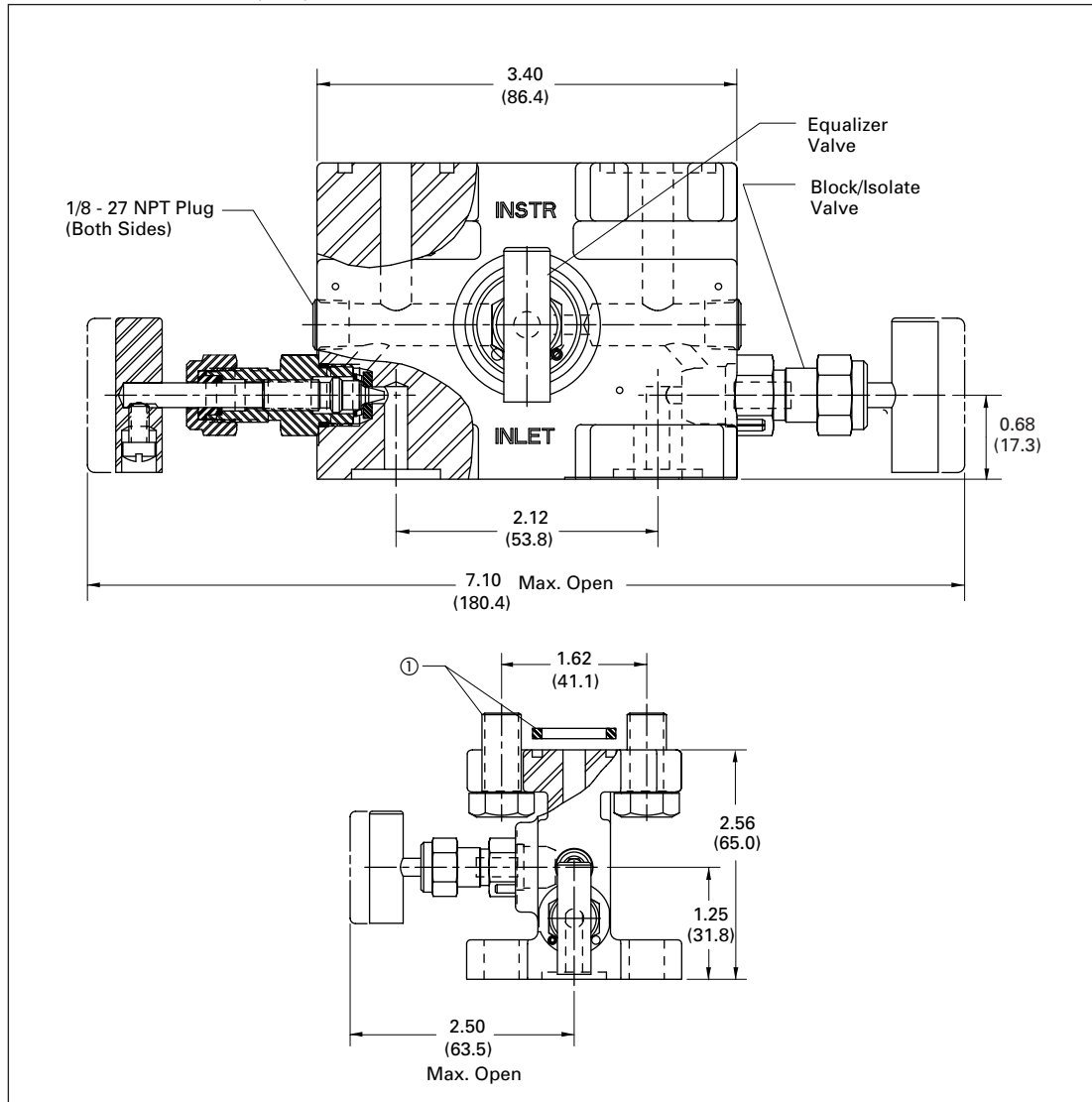


An Employee Owned Total Quality Management Company

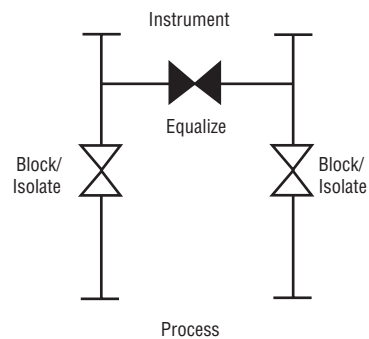
Kerotest KMM4A 3-Valve Differential Pressure Mini-Manifold

Specifications

Dimensions in Inches (mm)



① Mounting kit furnished with the KMM4A consists of four (4) bolts and two (2) Teflon® gaskets.



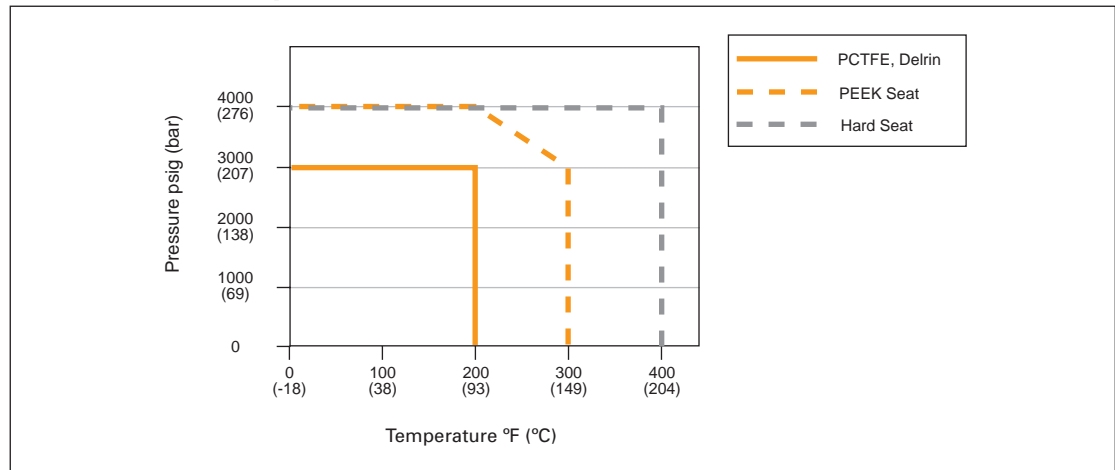
Kerotest KMM4A 3-Valve Differential Pressure Mini-Manifold

Standard Materials

Valve	Seat	Body	Bonnet	Stem	Stem Seal ①	Seat	Flow Washer
SS	Hard Seat	A351-CF8M SS	A479-316 SS	A276-316 SS	Teflon or O-ring	SS	N/A
SG ②	Hard Seat	A351-CF8M SS	A479-316 SS	Monel® R405	Teflon or O-ring	SS	N/A
SS	Soft Seat	A351-CF8M SS	A479-316 SS	A276-316 SS	Teflon or O-ring with Teflon Backup Ring	Delrin® ③	316
SS ②	Soft Seat	A351-CF8M SS	A479-316 SS	A276-316 SS	Teflon or O-ring with Teflon Backup Ring	Delrin ③	316

- ① Bonnet assembly with O-ring Stem Seal is 0.60 inches (15.2 mm) shorter than Bonnet with Teflon Stem Seal.
 ② SG (Sour Gas) all SS wetted parts are RC22 or less to meet requirements of NACE MR0175-latest revision.
 ③ PCTFE (Polychlorotrifluoroethylene is equivalent to Kel-F) and PEEK are also available.

Pressure vs. Temperature



Pressure and Temperature Ratings

Valve	Ratings	
Metal Seat	4000 psig at 400°F	(276 bar at 204°C)
Delrin and PCTFE Seat	3000 psig at 200°F	(207 bar at 93°C)
PEEK Seat	4000 psig at 200°F	(276 bar at 93°C)
	3000 psig at 300°F	(207 bar at 149°C)

Kerotest KMM4A 3-Valve Differential Pressure Mini-Manifold

Ordering Information

KMM4A	<u>V</u> 1.	<u>D</u> 2.	<u>S</u> 3.	-	<u>B2</u> 4.	-	<u>AM</u> 5.
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1. Stem Seal

V – Teflon
R – Viton® O-ring

2. Seat

I – Integral
D – Delrin (Standard)
K – PCTFE
E – PEEK

3. Body Material

S – SS, A351-CF8M

4. Installation Kits

B1 – Rosemount® 2024 (Four 18-8 SS Bolts/Washers, Teflon Seals) 7/16 – 20 x 1.25-Inch Bolts
B2 – Rosemount 2024 (Four 18-8 SS Bolts/Washers, Teflon Seals) 7/16 – 20 x 1.50-Inch Bolts
B3 – Foxboro 843 d/p (Standard) (Four A193-B7 Bolts/Washers)
B4 – Rosemount 3051C (Four 18-8 SS Bolts/Washers)

5. Options

AL – Low Temperature Lubricant
AM – KMC Mount Kit for Pipestand Mounting
BC – Accessory Bracket – Mount Conduit with Option AM

AMS – KMC Mount Kit for Pipestand Mounting with Stainless Steel Bracket
BP – Accessory Bracket – Mount Purge Meters with Option AM
CL – Cleaned for Chlorine Service
OC – Cleaned for Oxygen Service
HD – Hydrostatic Testing (100%) (MSS-SP-61)
MS – Monel Stem
PHB – Phenolic Black Handle
PHG – Phenolic Green Handle
PHR – Phenolic Red Handle
SG – Sour Gas Meets the Requirement of NACE MR0175-Latest Revision (Not Available for O-ring Packed Valves)
SSA – SS Flange Bolt (Grade 18-8)
SSC – 316 Flange Bolt (B8M)
SP – Special Requirements – Please Specify

Installation Kits

Kit	Part Number	Kit Contents	Typical Transmitter Reference
B1	60001039	4 Bolts 7/16 – 20 x 1.25-Inch, 18-8 SST, 4 Washers, 18-8 SST, 2 Gaskets Teflon	Rosemount 2024
B2	60001040	4 Bolts 7/16 – 20 x 1.5-Inch, 18-8 SST, 4 Washers, 18-8 SST, 2 Gaskets Teflon	Rosemount 2024
B3 (Standard)	60001041	4 Bolts 7/16 – 20 x 1.00-Inch, 18-8 SST, 4 Washers, 18-8 SST, 2 Gaskets Teflon	Foxboro 843 d/p
B4 (R3V)	60001042	4 Bolts 7/16 – 20 x 2.25-Inch, 18-8 SST, 4 Washers, 18-8 SST, 2 Gaskets Teflon	Rosemount 3051C

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