ANDERSON GREENWOOD M6A NATURAL GAS MANIFOLDS

FEATURES

• Easy Installation in meter tubing with no additional support generally required.
• Upstream or downstream ¼” FNPT ports for connecting the static pressure to the meter.
• Hard or field-replaceable soft seats for bubble-tight performance in abrasive applications.
• Bonnet-to-body and stem threads isolated from process corrosion - important in sour gas applications.
• Stem backout prevention eliminates accidental removal while under pressure.
• FKM O-ring with PTFE back-up ring standard stem packing with long life assured by mirror finish stem in the packing area.
• Integral hard back seat forms a secondary seal for the stem threads when valve is fully opened.
• Rolled stem threads increase strength and extend life.

GENERAL APPLICATION

The M6A is for differential pressure transmitters in natural gas applications and is usually supported in the vertical meter tubing from the orifice flange union. Static pressure and calibration test connections are standard.

TECHNICAL DATA

| Materials:  | CS, SS, Monel®, Hastelloy® |
| Seats:     | Metal or soft |
| Connections | ½” NPT and socket weld |
| Instrument | ½” NPT and socket weld |
| Pressure (max.): | 6000 psig (414 barg) |
| Temperature (max.): | 500°F (260°C) |

Five valve manifolds with a 3/16” (4.8mm) orifice for differential pressure natural gas services to 6000 psig (414 barg)
The M6A offers the option of metal or soft seats. All stem threads are rolled and lubricated to prevent galling and reduce operating torque. All bonnets are assembled with a bonnet locking pin to prevent accidental removal while in service and a protective dust cap is fitted to contain stem lubricant and prevent the influx of contaminants.

Soft-seated bonnet assemblies
The soft-seated bonnet assemblies have a one-piece rotating stem and plug with standard stem packing provided by an FKM O-ring and PTFE back-up ring.

Metal-seated bonnet assemblies
The metal-seated bonnet assemblies have a rotating stem with free swivel ball-type seat for long service life. The specially hardened ball seat is ideal for natural gas service. The stem seal is a patented PTFE packing gland which is adjustable in service.

### STANDARD MATERIALS

<table>
<thead>
<tr>
<th>Valve</th>
<th>Seat</th>
<th>Body</th>
<th>Bonnet</th>
<th>Stem</th>
<th>Ball</th>
<th>Flow washer</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS°</td>
<td>Soft</td>
<td>A108</td>
<td>A108</td>
<td>A581-303</td>
<td>N/A</td>
<td>316</td>
</tr>
<tr>
<td>CS°</td>
<td>Integral</td>
<td>A108</td>
<td>A108</td>
<td>A581-303</td>
<td>17-4PH</td>
<td>N/A</td>
</tr>
<tr>
<td>SS</td>
<td>Soft</td>
<td>A479-316</td>
<td>A479-316</td>
<td>A276-316</td>
<td>N/A</td>
<td>316</td>
</tr>
<tr>
<td>SS</td>
<td>Integral</td>
<td>A479-316</td>
<td>A479-316</td>
<td>A276-316</td>
<td>316</td>
<td>N/A</td>
</tr>
<tr>
<td>SG2</td>
<td>Soft</td>
<td>A479-316</td>
<td>A479-316</td>
<td>Monel® 400</td>
<td>N/A</td>
<td>316</td>
</tr>
<tr>
<td>SG2</td>
<td>Integral</td>
<td>A479-316</td>
<td>A479-316</td>
<td>Monel® 400</td>
<td>Monel® K500</td>
<td>N/A</td>
</tr>
<tr>
<td>SG3°</td>
<td>Hastelloy® C-276</td>
<td>Hastelloy® C-276</td>
<td>Hastelloy® C-276</td>
<td>Hastelloy® C-276</td>
<td>Eligløy®</td>
<td>Hastelloy®</td>
</tr>
</tbody>
</table>
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SPECIFICATIONS

PRESSURE AND TEMPERATURE RATINGS

<table>
<thead>
<tr>
<th>Valve</th>
<th>Packing</th>
<th>Seat material</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS1, SS, SG1, Monel®</td>
<td>PTFE</td>
<td>PEEK</td>
<td>3000 psig at 200°F (207 barg at 93°C)</td>
</tr>
<tr>
<td>CS1, SS, SG1, SG3®</td>
<td>PTFE®</td>
<td>Delrin®</td>
<td>3000 psig at 300°F (207 barg at 149°C)</td>
</tr>
<tr>
<td>CS1, SS, SG1, SG3®</td>
<td>PTFE®</td>
<td>PEEK</td>
<td>6000 psig at 200°F (414 barg at 93°C)</td>
</tr>
<tr>
<td>Monel®</td>
<td>PTFE</td>
<td>PEEK</td>
<td>5300 psig at 200°F (365 barg at 93°C)</td>
</tr>
<tr>
<td>CS1, SS, SG1, SG3®</td>
<td>PTFE®</td>
<td>PEEK</td>
<td>100 psig at 150°F (69 barg at 66°C)</td>
</tr>
<tr>
<td>CS1, SS, SG1, SG3®</td>
<td>PTFE®</td>
<td>PEEK</td>
<td>200 psig at 500°F (14 barg at 260°C)</td>
</tr>
<tr>
<td>CS1, SS, SG1, SG3®</td>
<td>PTFE®</td>
<td>PEEK</td>
<td>6000 psig at 200°F (414 barg at 93°C)</td>
</tr>
<tr>
<td>CS1, SS, SG1, SG3®</td>
<td>PTFE®</td>
<td>PEEK</td>
<td>6000 psig at 300°F (365 barg at 149°C)</td>
</tr>
</tbody>
</table>

**MINIMUM TEMPERATURE**

- Carbon steel: -20°F (-29°C)
- 316 SS O-ring seal: -20°F (-29°C)
- 316 SS, Monel®, Hastelloy®, PTFE packed: -70°F (-57°C)
- 316 SS, Monel®, Hastelloy®, Grafoil® packed: -70°F (-57°C)

**NOTE**
1. M6A Monel® ratings are: 6000 psig at 200°F [414 barg at 93°C]
   4000 psig at 500°F [276 barg at 260°C].

**NOTES**
1. CS parts are zinc chromate plated to prevent corrosion.
2. PCTFE [Polychlorotrifluoroethylene] is the exact equivalent of Kel-F®.
3. Block valves only.
4. SG [Sour Gas] meets the requirements of NACE MR0175/ISO 15156
   (for Chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103.
5. SG3 [Sour Gas] meets the requirements of NACE MR0175/ISO 15156
   (for Chloride conditions > 50 mg/l [ppm]).

PRESSURE VS. TEMPERATURE

**Soft seat**

- PEEK - CS, SS
- PEEK - Monel®
- Delrin® - PCTFE
- PTFE

**Metal seat**

- M6AHIS
- M6AVIM
- M6AVIC / M6AHIC / M6AVIS / M6AVU
- M6AHIM
- Denotes intersection data
## Selection Guide

**Example:** M6A V D S -4 -50

**Valve type:** ¼ inch (4.8 mm) orifice

**Pipe x pipe**

### Packing

- **V** PTFE
- **R** O-ring
- **H** GRAFOIL®
- **E** Low emissions graphite

### Seat

- **V** PTFE (block valves only)
- **D** Delrin®
- **E** PEEK
- **K** PCTFE

### Body material

- **C** CS
- **S** SS, A479-316
- **M** Monel®

### Process connections

- **4** ½-inch FNPT
- **4B** ½-inch socket weld (F-out x F-in)

### Options

- **-AM** AGCO Mount kit for 2-inch pipe stand
- **-BC** Accessory bracket for mounting conduit with AGCO Mount
- **-BP** Accessory bracket for mounting purge meters with AGCO Mount
- **-CL00** Cleaned for chlorine service
- **-HD** Hydrostatic testing (100 percent) (MSS SP-61)
- **-OC00** Cleaned for oxygen service
- **-SG** Sour Gas meets the requirements of NACE MR0175/ISO 15156 for chloride conditions ≤ 50 mg/l (ppm) and NACE MR0103
- **-SG3** (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 for chloride conditions > 50 mg/l (ppm)
- **-SS** All 316 SS construction
- **-PV** Plug-vent