Modular Instrumentation System

Kenmac Series Modular 85 System

- Provides a standard modular instrumentation interface and mounting system:
  - 2- and 4- valve pressure and differential pressure manifolds
  - Instrument monoflanges for isolation and vent functions
  - Single and double purge blocks
  - Electric heaters, steam trace blocks, seal pots, filling connectors, protective shade, mounting plates, and ancillary components (transmitter not included)
**Modular 85 System**
- A standard series of 2- and 4-valve manifolds for pressure and differential pressure measurement
- Instrument monoflanges provide isolation and vent functions for local instrument or indicator mounting
- Metal-to-metal seals and parallel threads in accordance with BS 2779 (ISO 228/1)
- Allows pre-assembly that can reduce field installation time and cost
- Hydrostatic test certificates complete with full chemical and physical material certifications available

**Instrument Manifolds**

**Features**
- Bar handle on isolating valves
- Equalizing and venting valves fitted with antitamper feature
- All valves color coded and labeled
- PTFE stem packing is standard
- Process and vent connection: 1/4 in. ISO parallel thread (G1/4) with locking pin feature
- Supplied complete with locking pins, gaskets, and four M8 mounting plate screws
- Factory installed and tested Swagelok® tube fittings with locking pin and gasket available
- Pressure-temperature ratings:
  - 6000 psig (413 bar) at 100°F (37°C)
  - 4000 psig (275 bar) at 400°F (204°C)
- Unless otherwise noted, metal components supplied for the modular 85 system are manufactured from 316 stainless steel. Other materials may be specified upon request.
- Instrument mounting face in accordance with DIN 19213
- Cast manifold body CF8M/ASTM A351

Stainless steel handle with square drive stem and locknut

Stem threads above packing protected from system media

Safety back seating needle seals in fully open position and provides blowout protection

Choice of packing and bonnet seal materials

For isolating or throttling of media flow; nonrotating, hardened needle for positive shutoff
**Instrument Manifolds**

**Four-Valve Differential-Pressure Manifold**
- Two isolating, one equalizing, and one venting valves
- Direct mounting to instrument on 2 1/8 in. (54 mm) centers and mounting plate
- Installation allows vent port to be higher than the process ports for liquid service, and below for gas service; manifolds marked for liquid and gas service
- Bolt and seal kit K7179 included with each manifold purchased

**Ordering Information**

<table>
<thead>
<tr>
<th>Description</th>
<th>Ordering Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1/4 (as shown)</td>
<td>M5156S0001</td>
</tr>
<tr>
<td>G1/4 with 3/8 in. Swagelok tube fittings installed</td>
<td>M5156S0003</td>
</tr>
<tr>
<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>M5156S0005</td>
</tr>
<tr>
<td>Bolt and seal kit</td>
<td>K7179</td>
</tr>
</tbody>
</table>

**Four-Valve Differential-Pressure Manifold**
- For applications where cross-contamination of process fluids is not permitted
- Two isolating and two venting valves
- Direct mounting to instrument on 2 1/8 in. (54 mm) centers and mounting plate
- Installation allows vent port to be higher than the process ports for liquid service, and below for gas service; manifolds marked for liquid and gas service
- Bolt and seal kit K7179 included with each manifold purchased

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<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>G1/4</td>
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<td>G1/4 with 3/8 in. Swagelok tube fittings installed</td>
<td>M5705S0003</td>
</tr>
<tr>
<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>M5705S0005</td>
</tr>
<tr>
<td>Bolt and seal kit</td>
<td>K7179</td>
</tr>
</tbody>
</table>
Instrument Manifolds

Two-Valve Pressure Manifold
- For absolute and gauge pressure transmitters
- One isolating and one venting valve
- Installation allows vent port to be higher than the process port for liquid service, and below for gas service; manifolds marked for liquid and gas service
- Bolt and seal kit K7180 included with each manifold purchased

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<tr>
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<tbody>
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<td>G1/4 (as shown)</td>
<td>M6006S0001</td>
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<tr>
<td>G1/4 with 3/8 in. Swagelok tube fittings installed</td>
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<tr>
<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>M6006S0005</td>
</tr>
<tr>
<td>Bolt and seal kit</td>
<td>K7180</td>
</tr>
</tbody>
</table>

Two-Valve Differential Pressure Manifold
- For low-pressure applications and level measure on atmospheric tanks with differential pressure cell
- One isolating and one venting valve
- Direct mounting to instrument on 2 1/8 in. (54 mm) centers, and mounting plate
- Installation allows vent port to be higher than the process port for liquid service, and below for gas service; manifolds marked for liquid and gas service
- Bolt and seal kit K7179 included with each manifold purchased

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<tr>
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<tr>
<td>G1/4 (as shown)</td>
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<tr>
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<td>M5706S0003</td>
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<tr>
<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>M5706S0005</td>
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<tr>
<td>Bolt and seal kit</td>
<td>K7179</td>
</tr>
</tbody>
</table>
Instrument Manifolds

Pressure Manifold

- For direct connecting to pressure transmitters or pressure gauges and mounting plates
- One isolating and one venting valve
- Integral gauge adapter, 1/2 in. NPT for 360° positioning, 1/2 in. ISO parallel thread (G1/2) option

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<table>
<thead>
<tr>
<th>Description</th>
<th>Ordering Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1/4 (process), 1/2 in. positionable male NPT (instrument)</td>
<td>M5713S1001</td>
</tr>
<tr>
<td>G1/4 (process), 1/2 in. positionable female NPT (instrument)</td>
<td>M5713S2001</td>
</tr>
<tr>
<td>G1/4 with 3/8 in. Swagelok tube fitting installed (1/2 in. male NPT) (as shown)</td>
<td>M5713S1003</td>
</tr>
<tr>
<td>G1/4 with 10 mm Swagelok tube fitting installed (1/2 in. female NPT)</td>
<td>M5713S2005</td>
</tr>
</tbody>
</table>

Instrument Monoflanges

Two-Valve Isolating and Venting Instrument Monoflange Gauge Block

- Suitable for direct connection to horizontal and vertical pipes
- 1/2 in. ASME B16.5 flange
- Low-pressure version: 150/300/600 lb rating
  1440 psig (99.2 bar) at 100°F (37°C)
  1030 psig (71.0 bar) at 400°F (204°C)
- High-pressure version: 900/1500/2500 lb rating
  6000 psig (413 bar) at 100°F (37°C)
  4280 psig (294 bar) at 400°F (204°C)
- Integral gauge adapter, 1/2 in. female NPT or 1/2 in. ISO parallel thread (G1/2) for 360° positioning
- Supplied complete with 0.08 in. (2.0 mm) thick mounting strip for name plate, fixing screws
- Factory installed and tested Swagelok tube fittings with locking pin and gasket available
- Vent connection: 1/4 in. ISO parallel thread (G1/4) or 1/4 in. NPT option
- Cast manifold body CF8M/ASTM A351

Ordering Information

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<thead>
<tr>
<th>Description</th>
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<td>Low-Pressure Monoflanges</td>
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<tr>
<td>G1/4 (1/2 in. female NPT)</td>
<td>M7101S1212C</td>
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<tr>
<td>G1/4 with 3/8 in. Swagelok tube fitting installed (1/2 in. female NPT)</td>
<td>M7101S1212H</td>
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<tr>
<td>G1/4 with 10 mm Swagelok tube fitting installed (1/2 in. female NPT)</td>
<td>M7101S1212K</td>
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<tr>
<td>High-Pressure Monoflanges</td>
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<tr>
<td>G1/4 (1/2 in. female NPT)</td>
<td>M7101S2212C</td>
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<tr>
<td>G1/4 with 3/8 in. Swagelok tube fitting installed (1/2 in. female NPT)</td>
<td>M7101S2212H</td>
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<tr>
<td>G1/4 with 10 mm Swagelok tube fitting installed (1/2 in. female NPT)</td>
<td>M7101S2212K</td>
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</table>
Purge Blocks

Features
- Complete with one venting valve, one integral filter, one or two soft-seated check valves
- Suitable for connecting to instrument impulse lines on 2 1/8 in. (54 mm) centers
- Brackets and fixing bolts supplied for mounting to 2 in. pipe stand
- Venting valve fitted with antitamper feature
- Integral filter screen: 750 μm.
- Check valve spring: nickel alloy

Self-Venting Single Purge Block
For pressure measurement and differential pressure measurement

Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Ordering Number</th>
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<tbody>
<tr>
<td>G1/4 inlet and vent G1/4 with 3/8 in. Swagelok tube</td>
<td>M5709S3001</td>
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<td>fitting installed outlet</td>
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<td>G1/4 with 3/8 in. Swagelok</td>
<td>M5709S3003</td>
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<td>tube fittings installed</td>
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<tr>
<td>G1/4 inlet and vent G1/4 with 10 mm Swagelok tube</td>
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<tr>
<td>fittings installed outlet</td>
<td></td>
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<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>M5709S5005</td>
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<tr>
<td>outlet</td>
<td></td>
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Self-Venting Double Purge Block
Suitable for differential pressure measurement and for connecting to instrument impulse lines on 2 1/8 in. (54 mm) centers

Ordering Information

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<tbody>
<tr>
<td>G1/4 with 3/8 in. Swagelok tube fittings installed</td>
<td>M5708S3003</td>
</tr>
<tr>
<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>M5708S5005</td>
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</tbody>
</table>
## Modular Instrumentation System

### Accessories

#### Seal Pot with Integral Vent Valve
- Liquid chamber of 50 cm³
- Valve fitted with high-temperature graphite packing and seals
- Process and vent connections: 1/4 in. ISO parallel thread (G1/4) with locking pins and gasket
- Pressure-temperature ratings: 6000 psig (413 bar) at 100°F (37°C) 3000 psig (206 bar) at 842°F (450°C)
- Factory-installed and tested Swagelok tube fittings with locking pin and gasket available

#### Electric Heater Block
- For use where heating of manifolds and instrument bodies is required for winterization purposes
- Nominal voltage: 110/230 V (ac)
- Power: 250 W max
- Area classification: Zone 1 Gas Group IIA, IIB, and IIC
- Type of Protection: Explosion proof ATEX certified II 2 G EEExd IIC T3 and T4

#### Steam Tracing Block
- For use where heating of transmitter bodies and manifold is required.
- Bolts directly to manifold body
- 10 mm or 3/8 in. Swagelok tube fitting
- Pressure-temperature ratings: 290 psig (19.9 bar) at 410°F (210°C)
- Factory-installed and tested Swagelok tube fittings with locking pin and gasket available

#### Filling Connector
- With integral, soft-seated nonreturn valve
- Suitable for direct bolting to the flange face of pressure transmitters
- 6 mm or 1/4 in. tube fitting with retained cap
- Supplied complete with 2 x 7/16-20 bolts, PTFE flange seal, plug, and retaining chain
- Pressure-temperature ratings: 6000 psig (413 bar) at 100°F (37°C) 4000 psig (275 bar) at 400°F (204°C)

#### Mounting Plate Assembly (Type A)
- Allows mounting of manifold, connection box, or air filter/regulator, nameplate, and protection shade to a 2 in. pipe stand
- Supplied complete with fasteners, clamps, and brackets
- Drilled to suit all components as indicated in the modular system, process connections, and steam tracer tubing, etc.

#### Mounting Plate Assembly (Type B)
- Allows mounting of manifold, connection box, or air filter/regulator, and nameplate to a 2 in. pipe stand
- Supplied complete with fasteners, clamps, and brackets
- Drilled to suit all components as indicated in the modular system, process connections, and steam tracer tubing, etc.

### Ordering Information

#### Seal Pot with Integral Vent Valve
<table>
<thead>
<tr>
<th>Description</th>
<th>Ordering Number</th>
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<tbody>
<tr>
<td>G1/4 ISO parallel thread</td>
<td>S986S0001</td>
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<tr>
<td>G1/4 with 3/8 in. Swagelok tube fittings installed</td>
<td>S986S0003</td>
</tr>
<tr>
<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>S986S0005</td>
</tr>
</tbody>
</table>

#### Electric Heater Block
Ordering number: S900001

#### Steam Tracing Block
<table>
<thead>
<tr>
<th>Description</th>
<th>Ordering Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1/4 ISO parallel thread</td>
<td>K5829S1001</td>
</tr>
<tr>
<td>G1/4 with 3/8 in. Swagelok tube fittings installed</td>
<td>K5829S1003</td>
</tr>
<tr>
<td>G1/4 with 10 mm Swagelok tube fittings installed</td>
<td>K5829S1005</td>
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</tbody>
</table>

#### Filling Connector
<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>G1/4 with 1/4 in. Swagelok tube fitting installed</td>
<td>K5837S0003</td>
</tr>
<tr>
<td>G1/4 with 6 mm Swagelok tube fitting installed</td>
<td>K5837S0005</td>
</tr>
</tbody>
</table>

#### Mounting Plate Assembly (Type A)
Ordering number: K5839S

#### Mounting Plate Assembly (Type B)
Ordering number: K6261S
Safe Product Selection
When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Caution: Do not mix or interchange parts with those of other manufacturers.

Packing adjustment may be required during the service life of the valve.

Valves that have not been cycled for a period of time may have a higher initial actuation torque.

Accessories

Port Protector

- 1/4 in. ISO parallel thread (G1/4) plug with integral 750 μm filter screen

Ordering number: K5840S

Purge Orifice Nipple

- Restricted orifice nipple and data tag plate supplied for 6 and 10 mm; 1/4 and 3/8 in. tubing
- Specify orifice size requirements when ordering

Ordering Information

<table>
<thead>
<tr>
<th>Tube Size</th>
<th>Ordering Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 mm</td>
<td>K5981S-1M</td>
</tr>
<tr>
<td>10 mm</td>
<td>K5981S-3M</td>
</tr>
<tr>
<td>3/8 in.</td>
<td>K5981S-3D</td>
</tr>
<tr>
<td>1/4 in.</td>
<td>K5981S-2D</td>
</tr>
</tbody>
</table>

Manifold Kidney
Flange Blank

- For protecting process lines when removing the differential pressure instrument.

Ordering number: K5982S

Antitamper Key

- Fits all vent and equalizing valves within the system
- Order separately

Ordering number: S004468

Tube Fittings

See the Swagelok Gaugeable Tube Fittings and Adapter Fittings catalog, MS-01-140, for information.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok representative.

Purge Orifice Nipple

For extra protection of electronic instruments against environmental conditions
- Mounts directly to mounting plate assembly
- Fire-retardant fiberglass construction with stainless steel fasteners

Ordering number: K5983-06

Protective Shade

- For extra protection of electronic instruments against environmental conditions
- Mounts directly to mounting plate assembly
- Fire-retardant fiberglass construction with stainless steel fasteners

Ordering number: K5983-06

Antitamper Key

- Fits all vent and equalizing valves within the system
- Order separately

Ordering number: S004468

Tube Fittings

See the Swagelok Gaugeable Tube Fittings and Adapter Fittings catalog, MS-01-140, for information.

Tubing

For information on Swagelok stainless steel or super duplex tubing, contact your authorized Swagelok sales and service representative.

Accessories

Port Protector

- 1/4 in. ISO parallel thread (G1/4) plug with integral 750 μm filter screen

Ordering number: K5840S

Purge Orifice Nipple

- Restricted orifice nipple and data tag plate supplied for 6 and 10 mm; 1/4 and 3/8 in. tubing
- Specify orifice size requirements when ordering

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<tr>
<th>Tube Size</th>
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<tr>
<td>6 mm</td>
<td>K5981S-1M</td>
</tr>
<tr>
<td>10 mm</td>
<td>K5981S-3M</td>
</tr>
<tr>
<td>3/8 in.</td>
<td>K5981S-3D</td>
</tr>
<tr>
<td>1/4 in.</td>
<td>K5981S-2D</td>
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Manifold Kidney
Flange Blank

- For protecting process lines when removing the differential pressure instrument.

Ordering number: K5982S

Antitamper Key

- Fits all vent and equalizing valves within the system
- Order separately

Ordering number: S004468

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