SERIES

Offline Fluid Conditioning System SERIES

COOL LOOP

COOL POWER SOLUTIONS FOR ALL FLUID POWER INDUSTRIES

We COOL what you POWER

www.thermaltransfer.com TTPSales@thermasys.com

Thermal Transfer Products
A ThermaSys® Company
Applications

Oil and Gas
- Oil Lubrication Transfer services

Power
- Turbine and compressors lubrication
- Seal oil applications and services
- Jacking oil systems,
- Filtration, lube services
- Oil transfer

Wind Energy
- High viscosity lubrication and filtration

Gear Box Lube Oil
- High viscosity lube
- Air emulsion

Industrial
- Fluid Power, HPU (Hydraulic Power Units)
- Injection moulding machines
- High and low pressure filtration systems
- Hydro power
- Paper industry

Micron Filtration

Utilize a modern in-line filter housing and cartridge
- Utilizes a standard cartridge element
- Filter Options:
  - 10 micron fiberglass, standard
  - 3, 6, and 25 micron fiberglass, optional
  - Consult factory for high viscosity fluids
- 8 1000 filtration efficiency
- Filtration indicator
  - Visual
  - Visual/Electrical
  - Electrical

- Ideal for independent cooling and filtering of system oils
- Low to medium pressure applications utilizing screw technology
- Low noise screw pump
- Pump flows ranging from 9.5 gpm to 45 gpm
- Bar and Plate Brazed Aluminum
  - P-BAR core with optional T-Bar core
- Best heat transfer per given envelope size while minimizing pressure drop
- Standard SAE ports - NPT and BSPP port adapters available
- Optional cartridge-style filters with both visual and electrical bypass indicator options
- Optional temperature sensors
**Materials**

- Mounting Feet – Steel
- Standard Core – Brazed Aluminum Plate and Bar (T-Bar is optional)
- Tanks – 5052 Aluminum
- Nose Bar and Little Bar – 3003-H Aluminum
- Air Fin, Plate, Turbulator and End Plate – 3003-O Aluminum
- Fanguard and Shroud – Steel
- Connectors – Aluminum
- Fan – Aluminum Hub, Plastic Blades
- Motor – NEMA

**Fluid Compatibility**

- Petroleum
- Water/ethylene glycol
- Cutting oils (contact TTP)
- Water-oil emulsions
- Water-Ethylene Glycol emulsions
- Mineral oil HLP and HLVP
- Ecologic fluids HETG-HEPG-HEE
- Lubrication high viscosity oils
- MIL-H, SKYDROL/HFDR phosphate ester*

*Standard pump seals are not compatible with phosphate ester. Special pumps with EPDM seals are required. Consult factory for details.

**Rating**

- Maximum Operating Pressure 250 PSI (17 BAR)
- Maximum Operating Temperature 300°F (150°C) without filter
- 230°F (110°C) with filter
- Maximum Viscosity
  - P-BAR 150 cst
  - T-BAR 320 cst

**Temperature Sensors**

- Thermostat Oil Temperature Sensor
  - Discrete
  - No power required
  - Low cost
  - Mounts in accessory ports

- Electronic Oil Temperature Sensor
  - Analog & discrete
  - On board dial set up
  - Multi-channel adjustable

**Dimension Range**

<table>
<thead>
<tr>
<th>Model</th>
<th>HEIGHT</th>
<th>WIDTH</th>
<th>DEPTH</th>
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Dimensions are in inches (millimeters).

*Shown with optional filter

Screw Pump Technology offering significant maintenance and performance advantages

- Reliable, high performance, low noise
- Run without pulsation, providing long life to your application
- Positive displacement rotary pump with axial flow design
- Only three moving parts
- Rolling action eliminates noise and vibration

Screw pumps meet the need of having a silent hydraulic component, unique pump design offers the characteristics of a gear pump and the silence of a screw pump.
### Dimensions

**COL-8 through COL-400**

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<td>3.70 (94)</td>
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</tbody>
</table>

**Note:** We reserve the right to make reasonable design changes without notice. All dimensions in inches (millimeters), unless noted otherwise.

TTPSales@thermasys.com   262.554.8330   www.thermaltransfer.com
### Model Specifications

**Model** | **A** | **B** | **C** | **D** | **E** | **F** | **G** (Pump Inlet) | **H** (Pump Outlet) | **I** | **J** | **K** | **L** | **M** | **N** | **O** | **P** | **Q** | **R** | **S** | **T** | **U**
COL-725-80 | 23.49 (597) | 30.32 (770) | 35.00 (889) | 6.50 (165) | 21.60 (549) | #20 SAE | 2” SAE Flange | 1 1/2” SAE Flange | 27.95 (710) | 25.48 (647) | 30.18 (767) | 4.25 (108) | 5.00 (127) | 21.10 (538) | 25.59 (650) | 24.07 (611) | 11.98 (304) | 9.16 (233) | 1.19 (30) | 3.70 (94) |
COL-725-100 | 23.49 (597) | 30.32 (770) | 35.00 (889) | 6.50 (165) | 21.60 (549) | #20 SAE | 2 1/4” SAE Flange | 2” SAE Flange | 27.95 (710) | 25.48 (647) | 30.18 (767) | 4.25 (108) | 5.00 (127) | 21.10 (538) | 25.59 (650) | 24.07 (611) | 11.98 (304) | 9.16 (233) | 1.19 (5) | 3.70 (94) |
COL-950-80 | 27.94 (710) | 37.01 (940) | 35.25 (895) | 9.50 (241) | 24.55 (624) | 2 1/2” SAE Flange | 2” SAE Flange | 1 1/2” SAE Flange | 34.26 (870) | 29.93 (760) | 35.87 (911) | 6.05 (154) | 9.20 (234) | 25.55 (649) | 31.50 (800) | 22.69 (576) | 18.00 (467) | 9.51 (242) | 1.38 (35) | 5.51 (140) |
COL-950-100 | 27.94 (710) | 37.01 (940) | 35.25 (895) | 9.50 (241) | 24.55 (624) | 2 1/2” SAE Flange | 2” SAE Flange | 1 1/2” SAE Flange | 34.26 (870) | 29.93 (760) | 35.87 (911) | 6.05 (154) | 9.20 (234) | 25.55 (649) | 31.50 (800) | 22.69 (576) | 18.00 (467) | 9.51 (242) | 1.38 (35) | 5.51 (140) |
COL-1200-80 | 27.94 (710) | 40.94 (1040) | 35.25 (895) | 9.50 (241) | 24.55 (624) | 2 1/2” SAE Flange | 2” SAE Flange | 1 1/2” SAE Flange | 38.19 (970) | 29.93 (760) | 40.30 (1024) | 6.05 (154) | 9.20 (234) | 25.55 (649) | 35.43 (880) | 26.05 (662) | 24.00 (610) | 8.47 (215) | 1.38 (35) | 5.51 (140) |
COL-1200-100 | 27.94 (710) | 40.94 (1040) | 35.25 (895) | 9.50 (241) | 24.55 (624) | 2 1/2” SAE Flange | 2” SAE Flange | 1 1/2” SAE Flange | 38.19 (970) | 29.93 (760) | 40.30 (1024) | 6.05 (154) | 9.20 (234) | 25.55 (649) | 35.43 (880) | 26.05 (662) | 24.00 (610) | 8.47 (215) | 1.38 (35) | 5.51 (140) |
COL-1600-80 | 36.01 (915) | 40.94 (1040) | 35.25 (895) | 9.50 (241) | 32.62 (829) | 2 1/2” SAE Flange | 2” SAE Flange | 1 1/2” SAE Flange | 38.19 (970) | 37.85 (962) | 40.30 (1024) | 6.05 (154) | 9.20 (234) | 33.62 (854) | 35.43 (880) | 25.45 (646) | 24.00 (610) | 8.47 (215) | 1.38 (35) | 5.51 (140) |
COL-1600-100 | 36.01 (915) | 40.94 (1040) | 35.25 (895) | 9.50 (241) | 32.62 (829) | 2 1/2” SAE Flange | 2” SAE Flange | 1 1/2” SAE Flange | 38.19 (970) | 37.85 (962) | 40.30 (1024) | 6.05 (154) | 9.20 (234) | 33.62 (854) | 35.43 (880) | 25.45 (646) | 24.00 (610) | 8.47 (215) | 1.38 (35) | 5.51 (140) |

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**Performance Curves**

**Single Motor 50hz/1500 RPM**

**Selection Procedure**

**Step 1** Determine Heat Load. Most applications can have a cooler sized for 1/3 of the input HP (KW).

**Step 2** Determine Entering Temperature Difference. (Actual E.T.D.)

\[ E.T.D. = \text{Entering oil temperature} \, ^\circ \text{F (°C)} - \text{Entering ambient air temperature} \, ^\circ \text{F (°C)} \]

The entering oil temperature is generally the maximum desired system oil temperature.

Entering air temperature is the highest ambient air temperature the application will see.

**Step 3** Select Model From Curves. Enter the Performance Curves at the bottom with the GPM (LPM) oil flow and proceed upward to the adjusted Heat Rejection from Step 3. Any Model or Curve on or above this point will meet these conditions.

Listed Performance Curves are based on 46 cSt oil. If your application conditions are different, consult factory for assistance.

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**Single Motor 60hz/1800 RPM**

*Note: T-Bar cores derate performance 15-25%. Consult factory for sizing information.*
**Performance Curves / Selection Procedure**

### Dual Motor 50hz/1500 RPM

![Graph of Dual Motor 50hz/1500 RPM](image)

### System Pressure Drop

<table>
<thead>
<tr>
<th>Model</th>
<th>Oil Flow Rate GPM (LPM)</th>
<th>Estimated Pressure Drop with Filter PSI (BAR)</th>
<th>Estimated Pressure Drop without Filter PSI (BAR)</th>
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<tbody>
<tr>
<td>COL-8-20</td>
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<td>14 (1.0)</td>
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<td>21.0 (79)</td>
<td>28 (2.0)</td>
<td>17 (1.2)</td>
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<td>COL-16-20</td>
<td>9.5 (36)</td>
<td>14 (1.0)</td>
<td>5 (0.3)</td>
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<td>COL-16-40</td>
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<td>12 (0.8)</td>
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Total pressure drop is estimated using 46 cStk oil. 10 micron mesh filter is used in calculating filter pressure drop.

### Oil Pressure Drop Correction

![Graph of Oil Pressure Drop Correction](image)

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<th>Model</th>
<th>50 Hz Flow Rate GPM (LPM)</th>
<th>60 Hz Flow Rate GPM (LPM)</th>
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**Entering Temperature Difference °F (°C)**

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<th>70 (39)</th>
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**Kinematic Viscosity SUS (cStk)**

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Specifications

**Pump/Fan Motor Data (COL-8 – COL-400)**

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<th>Model</th>
<th>Actual Displacement Cuin (CC)</th>
<th>GPM (LPM) Flow</th>
<th>Operating Pressure PSI (BAR)</th>
<th>Motor HP</th>
<th>RPM</th>
<th>Voltage 208-230/460</th>
<th>PH/HZ</th>
<th>Full Load Amps 208-230/460</th>
<th>Frame Size</th>
<th>Fan CFM (CMM)</th>
<th>Air Flow</th>
<th>Overall Sound dB(A) at 3 ft (1 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL-8</td>
<td>1.22 (20)</td>
<td>9.5 (36)</td>
<td>130 (9)</td>
<td>1.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>4.5-4.4/2.2</td>
<td>145TC</td>
<td>418 (11.83)</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.44 (40)</td>
<td>21 (79)</td>
<td>130 (9)</td>
<td>3</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>9.8-4.4/2.2</td>
<td>182TC</td>
<td>418 (11.83)</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>COL-16</td>
<td>1.22 (20)</td>
<td>9.5 (36)</td>
<td>130 (9)</td>
<td>1.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>4.5-4.4/2.2</td>
<td>145TC</td>
<td>745 (21.09)</td>
<td>73</td>
<td></td>
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<tr>
<td></td>
<td>2.44 (40)</td>
<td>21 (79)</td>
<td>130 (9)</td>
<td>3</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>9.8-4.4/2.2</td>
<td>182TC</td>
<td>745 (21.09)</td>
<td>73</td>
<td></td>
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<tr>
<td>COL-30</td>
<td>1.22 (20)</td>
<td>9.5 (36)</td>
<td>130 (9)</td>
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<td>208-230/460</td>
<td>3/60</td>
<td>4.5-4.4/2.2</td>
<td>145TC</td>
<td>2200 (62.29)</td>
<td>85</td>
<td></td>
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<tr>
<td></td>
<td>2.44 (40)</td>
<td>21 (79)</td>
<td>130 (9)</td>
<td>3</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>9.8-4.4/2.2</td>
<td>182TC</td>
<td>2200 (62.29)</td>
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<td>COL-400</td>
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<td>130 (9)</td>
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<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>4.5-4.4/2.2</td>
<td>145TC</td>
<td>1149 (32.53)</td>
<td>77</td>
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<td>2.44 (40)</td>
<td>21 (79)</td>
<td>130 (9)</td>
<td>3</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>9.8-4.4/2.2</td>
<td>182TC</td>
<td>1149 (32.53)</td>
<td>77</td>
<td></td>
</tr>
</tbody>
</table>

Performance based upon 46 cSt oil, 60 Hz

**Pump Motor Data (COL-725 – COL-1600)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Actual Displacement Cuin (CC)</th>
<th>GPM (LPM) Flow</th>
<th>Operating Pressure PSI (BAR)</th>
<th>Motor HP</th>
<th>RPM</th>
<th>Voltage 208-230/460</th>
<th>PH/HZ</th>
<th>Full Load Amps 208-230/460</th>
<th>Frame Size</th>
<th>Overall Sound dB(A) at 3 ft (1 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL-725</td>
<td>4.52 (74)</td>
<td>35 (133)</td>
<td>218 (15)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>5.68 (93)</td>
<td>45 (169)</td>
<td>203 (14)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>100</td>
</tr>
<tr>
<td>COL-950</td>
<td>4.52 (74)</td>
<td>35 (133)</td>
<td>218 (15)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>5.68 (93)</td>
<td>45 (169)</td>
<td>203 (14)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>92</td>
</tr>
<tr>
<td>COL-1200</td>
<td>4.52 (74)</td>
<td>35 (133)</td>
<td>218 (15)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>5.68 (93)</td>
<td>45 (169)</td>
<td>203 (14)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>94</td>
</tr>
<tr>
<td>COL-1600</td>
<td>4.52 (74)</td>
<td>35 (133)</td>
<td>218 (15)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>5.68 (93)</td>
<td>45 (169)</td>
<td>203 (14)</td>
<td>7.5</td>
<td>1800</td>
<td>208-230/460</td>
<td>3/60</td>
<td>21-18.8/9.4</td>
<td>213TC</td>
<td>96</td>
</tr>
</tbody>
</table>

Performance based upon 46 cSt oil, 60 Hz

**Fan Motor Data (COL-725 – COL-1600)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Motor HP</th>
<th>RPM</th>
<th>Voltage 208-230/460</th>
<th>PH/HZ</th>
<th>Full Load Amps 208-230/460</th>
<th>Frame Size</th>
<th>Fan CFM (CMM)</th>
<th>Air Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL-725</td>
<td>1.5</td>
<td>3450</td>
<td>208-230/460</td>
<td>3/60</td>
<td>4.9-4.6/2.3</td>
<td>56C</td>
<td>3600 (101.94)</td>
<td></td>
</tr>
<tr>
<td>COL-950</td>
<td>1.5</td>
<td>1750</td>
<td>208-230/460</td>
<td>3/60</td>
<td>5.1-4.8/2.4</td>
<td>145C</td>
<td>4700 (133.10)</td>
<td></td>
</tr>
<tr>
<td>COL-1200</td>
<td>3</td>
<td>1750</td>
<td>208-230/460</td>
<td>3/60</td>
<td>9.1-4.4/2</td>
<td>182TC</td>
<td>7000 (196.22)</td>
<td></td>
</tr>
<tr>
<td>COL-1600</td>
<td>5</td>
<td>1750</td>
<td>208-230/460</td>
<td>3/60</td>
<td>14.2-13.6/6.8</td>
<td>184TC</td>
<td>7900 (223.75)</td>
<td></td>
</tr>
</tbody>
</table>

Performance based upon 46 cSt oil, 60 Hz

**Desired Reservoir Temperature**

**Oil Temperature:** Oil coolers can be selected using entering or leaving oil temperatures.

**Off-Line Recirculation Cooling Loop:** Desired reservoir temperature is the oil temperature entering the cooler.

**Return Line Cooling:** Desired reservoir temperature is the oil temperature leaving the cooler. In this case, the oil temperature change must be determined so that the actual oil entering temperature can be found. Calculate the oil temperature change (oil $\Delta T$) with this formula:

$$ \text{Oil } \Delta T \text{ °F (°C)} = \left( \frac{\text{BTU/hr}}{\text{GPM Oil Flow x 210}} \right) \left( \frac{\text{KW}}{\text{LPM Oil Flow x 0.029}} \right) $$

To calculate the oil entering temperature to the cooler, use this formula:

$$ \text{Oil Entering Temp.} = \text{Oil Leaving Temp} + \text{Oil } \Delta T. $$

**Oil Pressure Drop:** Most systems can tolerate a pressure drop through the heat exchanger of 19 to 30 PSI (1.3 to 2.1 BAR). Excessive pressure drop should be avoided. Care should be taken to limit pressure drop to 5 PSI (.35 BAR) or less for case drain applications where high back pressure may damage the pump shaft seals.

**Oil Temperature**

Typical operating temperature ranges are:

- Hydraulic Motor Oil: 120 - 180°F (49 - 82°C)
- Hydrostatic Drive Oil: 160 - 180°F (71 - 82°C)
- Engine Lube Oil: 180 - 195°F (82 - 93°C)
- Automatic Transmission Fluid: 199 - 300°F (93 - 149°C)
Micron Filter Specifications

**LMP110 (COL-8 – COL-400)**
- **Filter Housing Materials**
  - Head – Aluminum
  - Housing – Phosphated Steel
  - Bypass valve – Brass/Aluminum
- **Maximum Temperature**
  - 230°F (110°C)
- **Bypass valve**
  - Opening pressure – 51 PSI (3.5 BAR) ±10%
- **Other opening pressures on request**
- **Connection In/Out**
  - #12 SAE
- **Seals**
  - Standard NBR
  - Optional FPM
- **Weight**
  - 4.0 lbs (1.8 kg)
- **Volume**
  - 0.21 gallons (0.81 liters)

**LMP210 (COL-725 – COL-1600)**
- **Filter Housing Materials**
  - Head – Anodized Aluminum
  - Housing – Anodized Aluminum
  - Bypass valve – Nylon
- **Maximum Temperature**
  - 230°F (110°C)
- **Bypass valve**
  - Opening pressure – 51 PSI (3.5 BAR) ±10%
- **Weight**
  - 7.7 lbs (3.5 kg)
- **Volume**
  - 0.40 gallons (1.5 liters)

*Other bowl lengths available. Consult factory for details.
All dimensions in inches (millimeters), unless noted otherwise.

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Filtration Media Composition
- Internal support mesh
- Filter media support
- Filtration media
- Prefilter media
- External support mesh

Compatibility with Fluids
The filter elements are compatible with:
- Mineral oils to ISO 2943-4
- Aqueous emulsions
- Synthetic fluids, water glycol

Seals, standard in NBR compatible with:
- Mineral oils to ISO 2943-4
- Aqueous emulsions
- Synthetic fluids, water glycol

FPM seals compatible with:
- Synthetic fluids type HS-HFDR-HFDS-HFDU to ISO 6743-4

International Standards for Fluid Contamination Control

<table>
<thead>
<tr>
<th>Components</th>
<th>Recommended Filtration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servo valves</td>
<td>●</td>
</tr>
<tr>
<td>Proportional valves</td>
<td>●</td>
</tr>
<tr>
<td>Variable displacement pumps</td>
<td>●</td>
</tr>
<tr>
<td>Cartridge valves</td>
<td>●</td>
</tr>
<tr>
<td>Piston pumps</td>
<td>●</td>
</tr>
<tr>
<td>Vane pumps</td>
<td>●</td>
</tr>
<tr>
<td>Pressure/flow rate control valves</td>
<td>●</td>
</tr>
<tr>
<td>Solenoid valves</td>
<td>●</td>
</tr>
<tr>
<td>ISO code</td>
<td>12/10/7 13/11/8 14/12/9 15/13/10 16/14/11 17/15/12 18/16/13 19/17/14 20/18/15</td>
</tr>
<tr>
<td>NAS code</td>
<td>1 2 3 4 5 6 7 8 9</td>
</tr>
<tr>
<td>Absolute filtration recommended</td>
<td>3 micron 6 micron 10 micron* &gt;10 micron</td>
</tr>
</tbody>
</table>

* TTP Standard

Filtration Indicators

Visual "V"
- Cover and lens: nylon
- Visual indicator green: cartridge clean
- Visual indicator red: cartridge clogged
- Weight: 4.8 oz (136 g)
- Tightening torque: 70 ft-lbs (95 Nm)

Electrical/Visual "EV"
Connector EN 175301-803 A/ISO4400
- Protection rating: IP 65
- Maximum contact rating: 5 A/250V~
- Voltage: 230 V~
- Connector: DIN 43650 Microswitch contact
- Cable gland: PG 9
- Cover and lens: nylon
- Visual indicator green: cartridge clean
- Visual indicator red: cartridge clogged
- Weight: 6.6 oz (187 g)
- Tightening torque: 70 ft-lbs (95 Nm)

Electric "E"
Connector EN 175301-803 A/ISO4400
- Protection rating: IP 65
- Maximum contact rating: 5 A/250V~
- Voltage: 230 V~
- Connector: DIN 43650 Microswitch contact
- Cable gland: PG 9
- Weight: 6.5 oz (184 g)
- Tightening torque: 48 ft-lbs (65 Nm)
Electronic temperature sensor

- Process connection: 1/4" NPT
- 2 switching outputs complementary hysteresis adjustable
- Measuring range of -13 - 284 °F (-25 - 140 °C)

Function
The unit generates 2 output signals: 1 x NO + 1 x NC with separately adjustable switch points (SET 1) and (SET 2).

OUT1
- With rising temperature OUT1 closes when the set value (SET1) is reached.
- With falling temperature OUT1 opens when the value (SET1) minus hysteresis is reached.

OUT2
- With rising temperature OUT2 opens when the set value (SET2) is reached.
- With falling temperature OUT2 closes when the value (SET2) minus hysteresis is reached.

The hysteresis is fixed at 5 K.

Technical Data

<table>
<thead>
<tr>
<th>Application</th>
<th>Liquid and Gases</th>
</tr>
</thead>
</table>

Electrical Design

| DC PNP |

Output

- Normally open/closed complementary

- Operating voltage (V): 9.6 - 32
- Current rating (mA): 500
- Short-circuit protection: Yes (non-latching)
- Reverse polarity protection: Yes
- Overload protection: Yes
- Voltage drop: < 2
- Current consumption: < 30

Setting Range

| Set point, SP | 3 - 284 / 37 - 543 °F (-16 - 140 / -4 - 284 °C) |
| Reset point, rP | -4 - 277 / 25 - 531 °F (-20 - 136 / -4 - 277 °C) |

Setting accuracy ± 3 K

Repeatability ± 0.1 K

Temperature drift 0.1 / 10 K

Power-on delay time 0.5 s

Measuring element 1 x Pt 1000, to DIN EN 60751, class B

Dynamic response: 1/3 s*

Minimum installation depth: 0.59 inches (15 mm)

Medium temperature: -13 - 257 °F (-25 - 125 °C) max. 1 h

Ambient temperature: -13 - 158 °F (-25 - 70 °C)

Storage temperature: -40 - 257 °F (-40 - 125 °C)

Protection: IP 67, III

Shock resistance: DIN IEC 68-2-27:50 g (11 ms)

Vibration resistance: DIN EN 60068-2-6:20 g (10 - 2000 Hz)

EMC: EN 61000-4-2 ESD: 4 kV CD / 8 kV AD

EN 61000-4-3 HF radiated: 10 V/m

EN 61000-4-4 Burst: 2 Kv

EN 61000-4-6 HF conducted: 10 V

Housing materials: Stainless steel 316L / 1.4404; PC (Makrolon); PBT (Pocan); FPM (Viton)

Materials (wetted parts): Stainless steel 316L / 1.4404

Display: Power: LED green; Switching status: LED yellow

Connection: M12 connector; gold-plated contacts

Weight: 0.229 lbs (0.104 kg)

Electronic Temperature Sensor

Sensor Port Adapters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>51627</td>
<td>#8SAE TO 1/2&quot; BSPP</td>
</tr>
<tr>
<td>51653</td>
<td>#8 SAE TO 1/4&quot; NPT</td>
</tr>
<tr>
<td>51654</td>
<td>#8 SAE TO 1/2&quot; NPT</td>
</tr>
</tbody>
</table>

Optical Bulb Well

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Thermostat Temperature Sensor & Model Ordering Information

Immersion thermostat, measuring temperature with a liquid filled sensing element. SPDT contacts, complete with waterproof protection pocket. Used to measure temperature on the primary heating pipe circuit, it is particularly suitable for automatic adjustment pumps.

- Contacts rating: 10(2.5)A/250V~
- Contacts: switching or closing contact for temperature increase
- Maximum head temperature: 176°F (80°C)
- Maximum bulb temperature: 257°F (125°C)
- Temperature rate of change: 1° K/min
- Protection degree: IP40

### Part Number

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Temperature Range</th>
<th>Differential</th>
<th>Maximum Bulb Temperature</th>
<th>Capillary Length</th>
<th>Protection Pocket 1/2&quot; NPT</th>
<th>Copper Bulb</th>
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</thead>
<tbody>
<tr>
<td>55925</td>
<td>0°/194°F (0°/90°C)</td>
<td>Δt = 4 ± 1K</td>
<td>266°F (130°C)</td>
<td>NA</td>
<td>.27x.31x4&quot; (7x8x100 mm)</td>
<td>NA</td>
</tr>
<tr>
<td>55926</td>
<td>0°/194°F (0°/90°C)</td>
<td>Δt = 4 ± 1K</td>
<td>266°F (130°C)</td>
<td>NA</td>
<td>.27x.31x8&quot; (7x8x200 mm)</td>
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<tr>
<td>55927</td>
<td>0°/194°F (0°/90°C)</td>
<td>Δt = 4 ± 1K</td>
<td>266°F (130°C)</td>
<td>39&quot; (1000 mm)</td>
<td>NA</td>
<td>Ø .26x3.7&quot; (6.5x95mm)</td>
</tr>
</tbody>
</table>

**20cc & 40cc – Sizes 8, 16, 30, and 400 only. 80cc & 100cc – Sizes 725, 950, 1200, and 1600 only.**

**T-BAR Core option provides a T-BAR core in COL frame. Used for high fouling or high viscosity fluids. Performance is typically 15-25% less than the bar and plate core. Consult factory for details.**

---

How to Order

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Parts</th>
<th>Pump*</th>
<th>Motor</th>
<th>Filter</th>
<th>Indicator</th>
<th>Core</th>
<th>Heresite</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blank</td>
</tr>
<tr>
<td>8-16</td>
<td>950-1200-1600</td>
<td>1-NPT</td>
<td>20-20cc</td>
<td>0-No Motor</td>
<td>3-None</td>
<td>3-3µ</td>
<td>Blank - Standard</td>
<td>Blank - Standard</td>
</tr>
<tr>
<td>30-400</td>
<td>80</td>
<td>2-SAE</td>
<td>40-40cc</td>
<td>6-6µ</td>
<td>6-Visual</td>
<td>V-Visual</td>
<td>T-BAR**</td>
<td>Paint</td>
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<tr>
<td>725</td>
<td>100</td>
<td>3-BSP</td>
<td>80-80cc</td>
<td>10-10µ</td>
<td>E-Electrical</td>
<td>EV-Visual</td>
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<tr>
<td>950</td>
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<td>0-100cc</td>
<td>100-100cc</td>
<td>25-25µ</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

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Thermal Transfer Products
A ThermaSys® Company

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5215 21st Street
Racine, Wisconsin 53406-5096
TEL: (262) 554-8330
FAX: (262) 554-8536
E-MAIL: TTPSales@thermasys.com
WEBSITE: www.thermaltransfer.com