The TopControl Continuous Type 8630 works as an electropneumatic positioner for pneumatically actuated control valves with piston actuators, e.g. the series 2702, 2712, 2730, 2731 and 2731K, as well as ball and butterfly valves with pneumatic rotary actuators. Together with the pneumatic actuator, it forms an optical and functional unit. With its numerous software functions, TopControl Continuous Type 8630 may also be used as a process controller with PID characteristics. In this case a process control loop is superposed upon the positioner loop in a cascade structure. The process value is led directly to the TopControl as a standard current signal, frequency or PT-100 signal. The control system may be used for a variety of control tasks in fluid technology.

Main functional groups:
- Position sensor for continuous measurement of the current position in the pneumatic actuator,
- Microprocessor controlled electronics for signal processing, actual/setpoint comparison, control and valve drive,
- Pneumatic positioning system for single or double acting actuators.

Technical Data

- **Housing material**: PPE/PA
- **Cover material**: PSU (transparent)
- **Seal material**: NBR
- **Control medium**: Quality classes to DIN ISO 8573-1
  - **Dust content**: Class 5 (≤ 40 µm particle size)
  - **Particle density**: Class 5 (≤ 10 mg/m³)
  - **Pressure dew point**: Class 3 (≤ -20 °C)
  - **Oil concentration**: Class 5 (≤ 25 mg/m³)
- **Control air temperature**: -10 ... +50 °C
- **Ambient temperature**: -10 ... +50 °C
- **Positioning system**: For pressurizing and/or exhausting the pneumatic piston actuator
  - Single acting actuator: 2 solenoid valves
  - Double acting actuator: 4 solenoid valves
- **Control air sockets**: G 1/4; NPT 1/4; RC 1/4 on request
- **Supply pressure**: 3 ... 7 bar
- **Flow capacity Q Nn**: 100 l/min (for pressurizing and exhausting)
- **Intrinsic air consumption**: 0 l/min
- **Position sensing system**: High resolution conductive plastic potentiometer, coupled without play to the piston rod of the actuator.
- **Operating voltage**: 24 V DC ± 10%
- **Residual ripple**: 10 %, Not industrial DC!
- **Power consumption**: < 5 W
- **Electrical connection**: 3 bushings (M16x1.5 with screw terminals) circular multipole plug
- **Setpoint setting**: 0/4 ... 20 mA, 0 ... 5/10 V
- **Input resistance for setpoint signal**: 180 Ω with 0/4 ... 20 mA
- **Sensor inputs for process controller**: 4 ... 20 mA
  - Pt 100, frequency
- **Input resistance for process value signal**: 180 Ω with 4 ... 20 mA
- **Power consumption**: < 5 W

1) The supply pressure applied must be at least 0.5 ... 1 bar above the max. permissible control pressure of the valve actuator.
Technical data (continued)

### Technical Data

<table>
<thead>
<tr>
<th>Options</th>
<th>2 binary outputs, inductive proximity switches, analog feedback, process controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus communication</td>
<td>PROFIBUS DP or DeviceNet others on request</td>
</tr>
<tr>
<td>Operating panel and configuration</td>
<td>Module with 3 keys for parametrization</td>
</tr>
<tr>
<td>Display for setpoint and process value</td>
<td>8-digit, 16-segment LC display</td>
</tr>
<tr>
<td>Type of protection</td>
<td>IP 65 to EN 60529</td>
</tr>
<tr>
<td>Protection class</td>
<td>3 to VDE 0580</td>
</tr>
<tr>
<td>Conformity</td>
<td>CE to EMV-9/336/EEC</td>
</tr>
</tbody>
</table>

- Flow capacity value for air [l/min] measured at +20 °C, 6 bar\(^1\) pressure at valve input and 1 bar pressure difference

\(^1\) Pressure stated in [bar]: are excess to atmospheric

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### Dimensions [mm]

- **Flow capacity value for air [l/min] measured at +20 °C, 6 bar**
- **Pressure at valve input and 1 bar pressure difference**
Signal flow plans

### Position control loop

- **TopControl Continuous**
- **Position control loop**
- **Process value measurement**
- **Valve position**
- **Set position setpoint**
- **Position controller**
- **Compressed air positioning system**
- **Compressed air controlled positioning system**
- **Process controller**
- **Process controller loop**
- **Process variable**
- **W1**
- **Xd1**
- **X1**
- **Yb1**
- **Ye1**
- **Ps**
- **Z1**
- **W2**
- **Xd2**
- **X2**
- **Y2**
- **Z2**

### Process control loop

- **TopControl Continuous**
- **Position controller loop**
- **Compressed air controlled positioning system**
- **Process value measurement**
- **Set process setpoint**
- **Position controller**
- **Process controller**
- **W1**
- **W2**
- **Xd1**
- **Xd2**
- **X1**
- **Y1**
- **Y2**
- **Ps**
- **Z1**
- **Z2**

Supplementary software functions in TopControl Continuous:
- Automatic commissioning of the control system
- Automatic parametrization of the optional integral process controller
- Automatic or manual selection of characteristic curve
- Parametrization of the positioner
- Parametrization of the process controller
- Configuration of one binary input
- Configuration of one analog or two binary outputs
- Setting of a setpoint range
- Limitation of stroke range
- Setting of a tight closure or max. stroke threshold
- Setting of direction of motion
- Code protection

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1) With a 3-conductor device the operating voltage is supplied independent of the setpoint signal.
Connection options

Ordering information for complete control valves

A complete control valve consists of a TopControl Continuous Type 8630 and a control valve Type 27xx. TopControl Continuous Type 8630 is supplied only with a positioning valve as part of a complete control valve. For the selection of a complete control valve, the following data are required:

- Order no. of the TopControl Continuous (see Ordering Table for TopControl Continuous Type 8630 without positioning valve)
- Order no. of the chosen positioning valve Type 27xx (see e.g. Ordering Tables for Types 2702, 2712, 2731K)
- The remark: TopControl Control Valve System
Ordering of complete control valves, using globe valve Type 2712 as an example

TopControl Continuous Type 8630

Globe control valve Type 2712

Complete control valve with desired line connection

2712+8630 Flange Complete control valve with flanged connection

2712+8630 Port Complete control valve with ported connection

2712+8630 Weld Complete control valve with welded connection

Ordering table for TopControl Continuous Type 8630 without control valve (excerpt, other versions on request)

<table>
<thead>
<tr>
<th>Function</th>
<th>Inductive proximity switch</th>
<th>Analog feedback</th>
<th>Binary outputs</th>
<th>Binary inputs</th>
<th>Electrical connection (with terminals and plug)</th>
<th>Item no. Actuator Ø 80/100 mm</th>
<th>Item no. Actuator Ø 125 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position control</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>with</td>
<td>with cable bushing</td>
<td>140 600</td>
<td>143 429</td>
</tr>
<tr>
<td>Position control</td>
<td>without</td>
<td>with</td>
<td>2</td>
<td>with</td>
<td>with cable bushing</td>
<td>140 611</td>
<td>144 158</td>
</tr>
<tr>
<td>Position and process control</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>with</td>
<td>with cable bushing</td>
<td>140 618</td>
<td>143 410</td>
</tr>
<tr>
<td>Position and process control</td>
<td>without</td>
<td>with</td>
<td>2</td>
<td>with</td>
<td>with cable bushing</td>
<td>140 619</td>
<td>144 471</td>
</tr>
<tr>
<td>Position control</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>with</td>
<td>with circular MP plug</td>
<td>143 141</td>
<td>145 521</td>
</tr>
<tr>
<td>Position and process control</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>with</td>
<td>with circular MP plug</td>
<td>143 142</td>
<td>145 522</td>
</tr>
<tr>
<td>Position control</td>
<td>2</td>
<td>without</td>
<td>without</td>
<td>with</td>
<td>with circular MP plug</td>
<td>142 208</td>
<td>145 523</td>
</tr>
<tr>
<td>Position and process control</td>
<td>2</td>
<td>without</td>
<td>without</td>
<td>with</td>
<td>with circular MP plug</td>
<td>142 209</td>
<td>145 524</td>
</tr>
<tr>
<td>Position control</td>
<td>without</td>
<td>with</td>
<td>2</td>
<td>with</td>
<td>with circular MP plug</td>
<td>140 612</td>
<td>145 525</td>
</tr>
<tr>
<td>Position and process control</td>
<td>without</td>
<td>with</td>
<td>2</td>
<td>with</td>
<td>with circular MP plug</td>
<td>140 626</td>
<td>144 139</td>
</tr>
<tr>
<td>Position control with PROFIBUS DP</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>with circular MP plug</td>
<td>157 781</td>
<td>158 769</td>
</tr>
<tr>
<td>Position control with DeviceNet</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>without</td>
<td>with circular MP plug</td>
<td>145 526</td>
<td>145 527</td>
</tr>
</tbody>
</table>
### Ordering chart for accessories

<table>
<thead>
<tr>
<th>Designation</th>
<th>Item no.</th>
<th>Designation</th>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16 socket, 12-pole, position/process setpoint; binary input and binary outputs</td>
<td>917 675</td>
<td>M8 plug, 4-pole, initiators</td>
<td>917 131</td>
</tr>
<tr>
<td>M12 socket, 4-pole, voltage supply</td>
<td>917 116</td>
<td>M12 plug, inverse coding, PROFIBUS DP</td>
<td>918 198</td>
</tr>
<tr>
<td>M12 socket, 4-pole, process value</td>
<td>917 878</td>
<td>M12 socket, 5-pole, DeviceNet</td>
<td>917 116</td>
</tr>
<tr>
<td>M8 socket, 4-pole, process value</td>
<td>917 878</td>
<td>M12 socket, inverse coding, PROFIBUS DP</td>
<td>918 447</td>
</tr>
</tbody>
</table>

If case of special conditions, we reserve the right to make technical changes without notice.