Dear Customer, this general catalogue is meant to be an introduction to the wide range of Burkert products and systems and a guide to enable you to quickly identify the most suitable solution for your needs.

The products or systems illustrated in this document are a selection of our full programme. Should you need details of a product or system, please do not hesitate to contact the Burkert subsidiary or authorised distributor nearest to you.

A CD containing the data sheets of our full programme and printed version of the data sheets and system information are also available on request.

Similar information are also available on our website at www.burkert.com

Looking forward to hear from you soon.

All technical details were valid at the time of going to print. Since we are continuously developing our products we reserve the right to make technical alterations. Unfortunately, we also cannot fully exclude possible errors. Please bear with us when we say that no legal claims can be derived from either the details given or illustrations and descriptions provided.

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Welcome to Burkert

The smart choice of Fluid Control Systems

Burkert is a world class company concentrating on consultancy, systems development, innovation and quality in fluid control.

We offer global experience you can rely on, from a flexible organisation with flexible processes. Day to day we are committed to creating success for our customers and ourselves. Consistent and continuous investment in research & development and in staff training enables us to offer our customers the best in technology and services.

For any request or target you might have for your fluid process control, you can rely on us: working together with you, we will find the best solution, both from a technical and economic point of view.

Complete systems and solutions

Burkert products and systems can be used wherever fluid media and gases need to be measured, controlled and regulated. Whether the application is filling, level, flow, pressure or temperature we have a solution and a uniquely comprehensive range of products to handle it, including solenoid, process and analytical valves, pneumatic actuation, sensors and controllers.

For Burkert it is not enough to simply offer individual products. Our aim is to provide complete system and application solutions that meet the specific needs of our customers. Tell us what you need and our engineers will find an appropriate solution using our vast experience and a wide range of services such as advice and engineering, installation, testing, and after sales support.

Our Markets

Many products have initially been envisaged for a particular market sector, and later customised for a new and very different application. Increasingly, Burkert’s initiatives in niche markets are being developed to provide solutions in much wider applications, to the benefit of a greater number of customers:

Analysis Biotechnology Automotive
Electronics Chemical Energy
Genetic engineering Semiconductor Food and beverage
Cosmetic Medical
Machine building Textile
Pharmaceutical Water treatment
Packaging

Our research & development team is in constant dialogue with technical institutes and industrial markets. The healthy relationship between theory and practice defines the creative spirit that forges our ideas. This has always been the driving force in the development of the groundbreaking products and intelligent system solutions pioneered by Burkert.

What there is behind every product of ours

Research is the lifeblood of our company. At Burkert we are never satisfied with the status quo and are continually seeking new technologies and solutions for our customers. Every year our people develop new and highly advanced products and solutions, ranging from integrated process measurement and control units, to the most sophisticated systems used in pharmaceutical research.

To be a market leader we also need to lead in R&D. Therefore our investment in research & development is one of the highest in our industry. In our research centres in Germany and France, 150 people are committed to working for a common future for our company and our customers.

We are where you are

Burkert is present in thirty countries around the world. We also work with a large network of distributors and partners, which means we can be as close as possible to our customers. By this global presence we can assure all our customers in every country around the world our full service and support.

We are committed to offering our expertise wherever it is needed, anywhere in the world. This global presence ensures that our advances in fluid control technology are also global.
## Range of Solenoid Valves for Neutral Fluids

**- Water, Oil, Gas, Air**

### Type 6011
- **Orifice size**: 1.2 to 2.4 mm
- **Pressure range**: 0 to 21 bar
- **Media temperature**: -10 to +100°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED (60%ED for block assembly)
- **Electrical connection**: Cable plug to IP65

### Type 6012
- **Orifice size**: 1.2 to 2.4 mm
- **Pressure range**: 0 to 21 bar
- **Media temperature**: -10 to +100°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED (60%ED for block assembly)
- **Electrical connection**: Cable plug to IP65

### Type 6013
- **Orifice size**: 2.0 to 6.0 mm
- **Pressure range**: 0 to 25 bar
- **Media temperature**: -10 to +100°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED (60%ED for block assembly)
- **Electrical connection**: Cable plug to IP65

### Type 6014
- **Orifice size**: 2.0 to 6.0 mm
- **Pressure range**: 0 to 25 bar
- **Media temperature**: -10 to +100°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED (60%ED for block assembly)
- **Electrical connection**: Cable plug to IP65

### Type 0280
- **Orifice size**: 8.0 or 13.0 mm
- **Pressure range**: 0.2 to 16 bar
- **Media temperature**: NBR -10 to +90°C, EPDM -10 to +120°C, FPM 0 to +90°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65

### Type 0281
- **Orifice size**: 8.0 or 13.0 mm
- **Pressure range**: 0.2 to 16 bar
- **Media temperature**: NBR -10 to +90°C, EPDM -10 to +120°C, FPM 0 to +90°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65

### Type 5281 (N/C)
- **Orifice size**: 12.0 to 50.0 mm
- **Pressure range**: 0.2 to 16 bar
- **Media temperature**: NBR -10 to +80°C, EPDM -40 to +120°C, FPM -10 to +90°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65

### Type 6213
- **Orifice size**: 10.0 to 40.0 mm
- **Pressure range**: 0 to 10 bar
- **Media temperature**: NBR -10 to +80°C, EPDM -30 to +120°C, FPM 0 to +90°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65

### Type 0290
- **Orifice size**: 12.0 to 50.0 mm, 2.8 to 38.0 m³/h
- **Pressure range**: 0 to 10 bar
- **Media temperature**: NBR -10 to +80°C, EPDM -40 to +120°C, FPM -10 to +90°C
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65
Range of Solenoid Valves for Neutral Fluids
- With unique features

**Type 0330**
- 2/2 way, Direct Acting Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System and with Manual Override Standard
- Normally closed, normally open, diverting, mixing or universal function
- Orifice size: 2.0 to 4.0 mm
- Kv: 0.11 to 0.29 m³/h
- Port connection: BSP, NPT, PT 1/4" or sub-base for manifold mounting
- Body material: Brass or stainless steel
- Seal material: NBR, EPDM or FPM
- Media temperature: NBR 0 to +80°C, EPDM -30 to +90°C, FPM -10 to +90°C
- Pressure range: 0 up to 16 bar
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED (60% ED for block assembly)
- Electrical connection: Cable plug to IP65

**Type 5282**
- 2/2 way, Servo Assist Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System, Opening and Closing Time Adjustment and Manual Override Standard
- Normally closed or normally open function
- Orifice size: 13.0 to 65.0 mm
- Kv: 4.0 to 40.0 m³/h
- Port connection: BSP, NPT, PT 1/2" to 2 1/2", Flanged (DIN) DN25 to DN50
- Body material: Brass, Stainless Steel, Cast Iron (for flanged DN25 to DN50)
- Seal material: NBR, EPDM or FPM
- Media temperature: NBR 0 to +80°C, EPDM -30 to +90°C, FPM -10 to +90°C
- Pressure range: 0.2 up to 10 bar
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65

**Type 6212**
- 2/2 way, Servo Assist Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System. Option with Integrated Flow Switch for Brass Body
- Normally closed or normally open function
- Orifice size: 10.0 to 20.0 mm
- Kv: 1.9 to 8.3 m³/h
- Port connection: BSP, NPT, PT 3/8" to 1"
- Body material: Brass, Stainless Steel
- Seal material: NBR, EPDM or FPM
- Media temperature: 0 to +50°C
- Pressure range: 0.2 up to 10 bar (Normally Closed), 0.2 to 6 bar (Normally Open)
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65

**Type 0344**
- 3/2 way, Servo Assist Solenoid Valves For Vacuum Application
- Normally closed or normally open function
- Orifice size: 8.0 to 25.0 mm
- QNn: 1,030 to 11,000 l/min
- Port connection: BSP 1/4" to 1"
- Body material: Brass
- Seal material: NBR
- Media temperature: 0 to +90°C
- Pressure range: Vacuum to +3 bar
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65

**Type 2610**
- 2/2 way, Direct Acting Solenoid Valves For Cryogenic Application
- Normally closed function
- Orifice size: 6.0 to 12.0 mm
- Kv: 0.8 to 1.8 m³/h
- Port connection: BSP, NPT, PT 1/4" to 1/2"
- Body material: Brass, Stainless Steel
- Seal material: PTFE
- Media temperature: -220 to +180°C
- Pressure range: 0 to 10 bar
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65
Range of Solenoid Valves for Neutral Fluids
- at Higher Temperature - Hot Water, Hot Air, Steam

**Type 6013**
2/2 way, Direct Acting
Solenoid Valves
Normally closed function
- Orifice size: 2.0 to 3.0 mm
- Kv: 0.12 to 0.23 m³/h
- Port connection: BSP, NPT, PT 1/4” to 3/8”
- Body material: Brass with stainless steel seat
- Seal material: PTFE
- Media temperature: 0 to +180°C
- Pressure range: 0 up to 25 bar (max. 10 bar for steam)
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65

**Type 6213**
Hot Water Range
2/2 way, Servo Assist Forced
Coupled Diaphragm Solenoid Valves
Normally closed function
- Orifice size: 10.0 to 40.0 mm
- Kv: 1.8 to 30.0 m³/h
- Port connection: BSP, NPT, PT 1/4” to 2”
- Body material: Brass with stainless steel seat
- Seal material: EPDM
- Media temperature: EPDM -30 to +120°C
- Pressure range: 0 to 10 bar
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65

**Type 0255**
Type 0355
2/2 way, 3/2 way, Direct Acting
Solenoid Valves
Normally closed, normally open, diverting or mixing function
- Orifice size: 1.0 to 6.0 mm
- Kv: 0.03 to 0.8 m³/h
- Port connection: BSP, NPT, PT 1/4” to 1/2”
- Body material: Brass with stainless steel seat or stainless steel
- Seal material: PTFE
- Media temperature: 0 to +180°C
- Pressure range: 0 up to 100 bar (max. 10 bar for steam)
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65

**Type 0406**
2/2 way, Servo Assist (Servo-Piston) Solenoid Valves
Normally closed function
- Orifice size: 13.0 to 40.0 mm
- Kv: 3.7 to 18.0 m³/h
- Port connection: BSP, NPT, PT 1/2” to 11/2”, Flanged (DIN) DN25 to DN40
- Body material: Brass with stainless steel seat, Cast Iron (for flanged DN25 to DN40)
- Seal material: PTFE
- Media temperature: 0 to +180°C
- Pressure range: 1.0 up to 12 bar (max. 10 bar for steam)
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65

**Type 0407**
2/2 way, Servo Assist Forced Coupled Piston Solenoid Valves
Normally closed function
- Orifice size: 13.0 to 50.0 mm
- Kv: 3.7 to 36.0 m³/h
- Port connection: BSP, NPT, PT 1/2” to 2” Flanged (DIN) DN25 to DN50
- Body material: Brass with stainless steel seat, Cast Iron (for flanged DN25 to DN50)
- Seal material: PTFE
- Media temperature: 0 to +180°C
- Pressure range: 0 to 10 bar
- Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC (only for DN50)
- Duty cycle: 100% ED
- Electrical connection: Cable plug to IP65
### Type 0255
2/2 way, Direct Acting Solenoid Valves

- Normally closed function

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Orifice size</td>
<td>1.0 to 6.0 mm</td>
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<td>$K_v$</td>
<td>0.03 to 0.8 m³/h</td>
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<tr>
<td>Port connection</td>
<td>BSP, NPT, PT 1/4&quot; to 1/2&quot;</td>
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<tr>
<td>Body material</td>
<td>Brass with stainless steel or stainless steel</td>
</tr>
<tr>
<td>Seal material</td>
<td>FPM or PTFE</td>
</tr>
<tr>
<td>Media temperature</td>
<td>0 to +180°C</td>
</tr>
<tr>
<td>Pressure range</td>
<td>0 up to 100 bar</td>
</tr>
<tr>
<td>Voltage</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>100% ED</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 5404
2/2 way, Servo Assist (Servo-Piston) Solenoid Valves

- Normally closed function

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>12.0 to 25.0 mm</td>
</tr>
<tr>
<td>$K_v$</td>
<td>12.0 to 10.0 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>BSP, NPT, PT 1/2&quot; to 1&quot;</td>
</tr>
<tr>
<td>Body material</td>
<td>Brass</td>
</tr>
<tr>
<td>Seal material</td>
<td>PTFE/NBR</td>
</tr>
<tr>
<td>Media temperature</td>
<td>-10 to +90°C</td>
</tr>
<tr>
<td>Pressure range</td>
<td>1 up to 50 bar</td>
</tr>
<tr>
<td>Voltage</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>100% ED</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 2200
2/2 way, Direct Acting Solenoid Valves For High Pressure Application

- Normally closed, normally open function

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>1.2 to 2.0 mm</td>
</tr>
<tr>
<td>$K_v$</td>
<td>0.03 to 0.09 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>BSP, NPT 1/4&quot;</td>
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<tr>
<td>Body material</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Seal material</td>
<td>PTFE/FPM</td>
</tr>
<tr>
<td>Media temperature</td>
<td>-10 to +130°C</td>
</tr>
<tr>
<td>Pressure range</td>
<td>0 to 250 bar</td>
</tr>
<tr>
<td>Voltage</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>100% ED</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 2400
2/2 way, Servo-Assist Solenoid Valves For High Pressure Application

- Normally closed function

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Orifice size</td>
<td>5.0 to 12.0 mm</td>
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<tr>
<td>$K_v$</td>
<td>0.6 to 2.6 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>BSP, NPT 1/4&quot; or 1/2&quot;</td>
</tr>
<tr>
<td>Body material</td>
<td>Brass or stainless steel</td>
</tr>
<tr>
<td>Seal material</td>
<td>PEEK/FPM, PCTFE/FPM or PTFE/FPM</td>
</tr>
<tr>
<td>Media temperature</td>
<td>-10 to +80°C</td>
</tr>
<tr>
<td>Pressure range</td>
<td>1 up to 250 bar</td>
</tr>
<tr>
<td>Voltage</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>100% ED</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>Cable plug to IP65</td>
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</tbody>
</table>
## Range of Solenoid Valves for Aggressive Fluids

- Chemical, Acid, Alkaline, Ultra Pure Water

### Type 0330
2/2 way, 3/2 way, Direct Acting Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System and With Manual Override Standard

<table>
<thead>
<tr>
<th>Normally closed, normally open, diverting, mixing or universal function</th>
<th>Orifice size</th>
<th>Port connection</th>
<th>Body material</th>
<th>Seal material</th>
<th>Media temperature</th>
<th>Pressure range</th>
<th>Voltage</th>
<th>Duty cycle</th>
<th>Electrical connection</th>
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<tbody>
<tr>
<td></td>
<td>2.0 to 4.0 mm, 0.13 to 0.4 m³/h</td>
<td>BSP, NPT, PT 1/4”</td>
<td>Stainless steel</td>
<td>EPDM or FPM</td>
<td>EPDM -30 to +90°C, FPM -10 to +90°C</td>
<td>0 up to 16 bar</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
<td>100% ED</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 0124
2/2 way, 3/2 way, Direct Acting Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System and with Manual Override Standard

<table>
<thead>
<tr>
<th>Normally closed, normally open, diverting, mixing or universal function</th>
<th>Orifice size</th>
<th>Port connection</th>
<th>Body material</th>
<th>Seal material</th>
<th>Media temperature</th>
<th>Pressure range</th>
<th>Voltage</th>
<th>Duty cycle</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0 to 5.0 mm, 0.13 to 0.4 m³/h</td>
<td>BSP, NPT, PT 1/4”</td>
<td>PP, PVDF</td>
<td>EPDM or FPM</td>
<td>EPDM -30 to +90°C, FPM -10 to +90°C</td>
<td>0 up to 16 bar</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
<td>100% ED</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 6212
2/2 way, Servo Assist Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System.

<table>
<thead>
<tr>
<th>Normally closed or normally open function</th>
<th>Orifice size</th>
<th>Port connection</th>
<th>Body material</th>
<th>Seal material</th>
<th>Media temperature</th>
<th>Pressure range</th>
<th>Voltage</th>
<th>Duty cycle</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.0 to 20.0 mm</td>
<td>BSP, NPT, PT 3/8” to 1”</td>
<td>Stainless Steel</td>
<td>EPDM or FPM</td>
<td>0 to +50°C</td>
<td>0.2 up to 10 bar (Normally Closed), 0.2 to 6 bar (Normally Open)</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
<td>100% ED</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 0142
2/2 way, Servo Assist Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System and Manual Override Standard

<table>
<thead>
<tr>
<th>Normally closed or normally open function</th>
<th>Orifice size</th>
<th>Port connection</th>
<th>Body material</th>
<th>Seal material</th>
<th>Media temperature</th>
<th>Pressure range</th>
<th>Voltage</th>
<th>Duty cycle</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15.0 to 50.0 mm</td>
<td>BSP, NPT, PT 1/2” to 2”, Heat fusion (PVDF), Solvent Socket, Solvent (PVC), DIN, ASTM</td>
<td>EPDM or FPM</td>
<td>EPDM -30 to +90°C, FPM -10 to +90°C</td>
<td>0.5 up to 6 bar</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
<td>100% ED</td>
<td>Cable plug to IP65</td>
<td></td>
</tr>
</tbody>
</table>

### Type 0121
2/2 way, 3/2 way, Direct Acting Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System and with Manual Override Standard

<table>
<thead>
<tr>
<th>Normally closed, normally open, diverting, mixing or universal function</th>
<th>Orifice size</th>
<th>Port connection</th>
<th>Body material</th>
<th>Seal material</th>
<th>Media temperature</th>
<th>Pressure range</th>
<th>Voltage</th>
<th>Duty cycle</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 8.0 mm</td>
<td>BSP 1/4” or 3/8”, Solvent Socket Ø16mm (PVDF)</td>
<td>Stainless steel, PTFE, PVC, PP, PVDF</td>
<td>FPM, FFKM</td>
<td>0 to +50°C(PVC), -10 to +90°C</td>
<td>0 up to 6 bar</td>
<td>24V, 110V, 230V AC 50Hz, 24VDC</td>
<td>100% ED</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 0131
2/2 way, 3/2 way, Direct Acting Solenoid Valves With Double Sealing Design Isolating Media From Solenoid System and with Manual Override Standard

<table>
<thead>
<tr>
<th>Normally closed, normally open, diverting, mixing or universal function</th>
<th>Orifice size</th>
<th>Port connection</th>
<th>Body material</th>
<th>Seal material</th>
<th>Media temperature</th>
<th>Pressure range</th>
<th>Voltage</th>
<th>Duty cycle</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.0 to 20.0 mm</td>
<td>BSP, NPT, PT 3/8” to 3/4”, Solvent (PVDF), Heat fusion (PVDF) socket Ø16 to Ø25 mm</td>
<td>PP, PVDF</td>
<td>EPDM or FPM</td>
<td>0 to +50°C(PVC), 0 to +70°C(PVDF)</td>
<td>0 up to 3 bar</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
<td>100% ED</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

### Type 0528
2/2 way, Servo Assist Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System, Opening and Closing Time Adjustment and Manual Override Standard

<table>
<thead>
<tr>
<th>Normally closed or normally open function</th>
<th>Orifice size</th>
<th>Port connection</th>
<th>Body material</th>
<th>Seal material</th>
<th>Media temperature</th>
<th>Pressure range</th>
<th>Voltage</th>
<th>Duty cycle</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20.0 to 50.0 mm</td>
<td>BSP, NPT, PT 1/2” to 2”, Solvent Socket, PVDF: DIN Heat fusion socket</td>
<td>Stainless Steel</td>
<td>EPDM or FPM</td>
<td>EPDM -30 to +90°C, FPM -10 to +90°C</td>
<td>0.2 up to 10 bar</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
<td>100% ED</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>
## Range of Solenoid Valves for Pneumatic Application

### - Pilot Valves, Valve Islands

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type 6012</strong></td>
<td>3/2 way, Direct Acting Miniature Solenoid Valves with or without Manual Override</td>
</tr>
<tr>
<td>Orifice size</td>
<td>Normally closed or normally open function</td>
</tr>
<tr>
<td>QNn</td>
<td>1.2 to 1.6 mm</td>
</tr>
<tr>
<td>Port connection</td>
<td>48 to 65 l/min</td>
</tr>
<tr>
<td>Body material</td>
<td>Brigade or Polyamide</td>
</tr>
<tr>
<td>Seal material</td>
<td>FPM</td>
</tr>
<tr>
<td>Media temperature</td>
<td>-10 to +100°C</td>
</tr>
<tr>
<td>Pressure range</td>
<td>0 up to 10 bar</td>
</tr>
<tr>
<td>Voltage</td>
<td>24V, 110V, 230V AC 50 or 60Hz, 24VDC</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>100% ED (60% ED for block assembly)</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>Cable plug to IP65</td>
</tr>
</tbody>
</table>

| **Type 6014** | 3/2 way, Direct Acting Solenoid Valves, with or without Manual Override       |
| Orifice size | Normally closed or normally open function                                   |
| QNn        | 1.5 to 2.5 mm                                                               |
| Port connection | 75 to 172 l/min                                                            |
| Body material | Brigade or Polyamide                                                       |
| Seal material | Aluminum                                                                   |
| Media temperature | -10 to +100°C                                                               |
| Pressure range | 0 up to 16 bar                                                              |
| Voltage | 24V, 110V, 230V AC 50 or 60Hz, 24VDC                                      |
| Duty cycle | 100% ED (60% ED for block assembly)                                        |
| Electrical connection | Cable plug to IP65                                                          |

| **Type 6013** | 3/2 way, Direct Acting Solenoid Valves With Separating Diaphragm Isolating Media From Solenoid System and with Manual Override Standard |
| Orifice size | Normally closed, normally open, or universal function                      |
| QNn        | 2.0 to 4.0 mm                                                               |
| Port connection | 86 to 215 l/min                                                             |
| Body material | Brigade or stainless steel                                                  |
| Manifold material | Aluminum                                                                   |
| Pressure range | NBR 0 to +80°C                                                               |
| Voltage | FPM -10 to +90°C                                                            |
| Duty cycle | 0 up to 16 bar                                                              |
| Electrical connection | 24V, 110V, 230V AC 50 or 60Hz, 24VDC                                      |

| **Type 6106** | 3/2 way, Miniature Direct Acting Solenoid Valves With Rocker System for High Speed Switching with Manual Override Standard |
| Orifice size | Normally closed or normally open function                                   |
| QNn        | 0.9 to 1.2 mm                                                               |
| Port connection | 22 to 40 l/min                                                              |
| Body material | Brigade or stainless steel                                                  |
| Manifold material | Aluminum                                                                   |
| Pressure range | NBR 0 to +80°C                                                               |
| Voltage | FPM -10 to +90°C                                                            |
| Duty cycle | 0 up to 16 bar                                                              |
| Electrical connection | 24V, 110V, 230V AC 50 or 60Hz, 24VDC                                      |

| **Type 5411** | 3/2 way, 4/2 way, Servo Assist Poppet Design Solenoid Valves with Manual Override Standard |
| Port connection | Normally closed, normally open or switch over function                     |
| Orifice size | 6.0 mm                                                                     |
| QNn        | 900 l/min                                                                   |
| Body material | Brigade or Polyamide                                                       |
| Manifold material | Aluminum                                                                   |
| Seal material | NBR                                                                        |
| Media temperature | 0 to +60°C                                                                  |
| Pressure range | 1 to 10 bar                                                                 |
| Voltage | 24V, 110V, 230V AC 50 or 60Hz, 24VDC                                      |
| Duty cycle | 100% ED (60% ED for block assembly)                                        |
| Electrical connection | Cable plug to IP65                                                          |

| **Type 5413** | 4/2 way, Servo Assist Solenoid Valves with Manual Override and Integrated Flow Restrictors Standard |
| Port connection | Switch over function                                                        |
| Orifice size | 3.0 mm                                                                     |
| QNn        | 200 l/min                                                                   |
| Body material | Brigade or Polyamide                                                       |
| Manifold material | Aluminum                                                                   |
| Seal material | NBR                                                                        |
| Media temperature | 0 to +60°C                                                                  |
| Pressure range | 2.5 to 10 bar                                                               |
| Voltage | 24V, 110V, 230V AC 50 or 60Hz, 24VDC                                      |
| Duty cycle | 100% ED (60% ED for block assembly)                                        |
| Electrical connection | Cable plug to IP65                                                          |
### Range of Solenoid Valves for Pneumatic Application

#### Pilot Valves, Standard Valve Islands

<table>
<thead>
<tr>
<th>Type 6518</th>
<th>Type 6519</th>
</tr>
</thead>
</table>

- **Orifice size**: 8.0 to 9.0 mm
- **QNn**: up to 1,300 l/min
- **Port connection**: BSP, NPT, PT 1/4", Namur or block (gang) mounting. Block inlet 1/2"
- **Body material**: Polyamide or Aluminum (5/3 way)
- **Seal material**: NBR/PUR, NBR
- **Media temperature**: 0 to +50°C
- **Pressure range**: 2 to 8 bar
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED (60% ED for block assembly)
- **Electrical connection**: Cable plug to IP65

<table>
<thead>
<tr>
<th>Type 5470 Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 5470 Block/Extendable Assembly</td>
</tr>
<tr>
<td>Type 5470 Namur</td>
</tr>
</tbody>
</table>

- **Orifice size**: 5.0 mm
- **QNn**: up to 750 l/min
- **Port connection**: BSP, NPT, PT 1/4" / Namur
- **Body material**: Polyamide/Aluminum
- **Seal material**: NBR
- **Media temperature**: 0 to +60°C
- **Pressure range**: 1.5 to 10 bar
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65

| Type 6012 Banjo |
| Type 6014 Banjo |
| 3/2 way, Direct Acting Solenoid Valves For Direct Mounting to Actuator with Manual Override Standard |

- **Orifice size**: 1.2 to 2.0 mm
- **QNn**: 48 to 120 l/min
- **Port connection**: BSP, NPT, PT 1/8" or 1/4", Tube fitting 8mm, Banjo with BSP 1/8" or 1/4"
- **Body material**: Brass/Aluminum or Polyamide
- **Seal material**: FPM
- **Media temperature**: 0 to +50°C (Polyamide), 0 to +90°C (Brass)
- **Pressure range**: up to 10 bar
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65

<table>
<thead>
<tr>
<th>Type 6519 Namur</th>
</tr>
</thead>
</table>

- **Orifice size**: 8.0 to 9.0 mm
- **QNn**: up to 1,300 l/min
- **Port connection**: BSP, NPT, PT 1/4", Namur or block (gang) mounting. Block inlet 1/2"
- **Body material**: Polyamide or Aluminum (5/3 way)
- **Seal material**: NBR/PUR, NBR
- **Media temperature**: 0 to +50°C
- **Pressure range**: 2 to 8 bar
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED (60% ED for block assembly)
- **Electrical connection**: Cable plug to IP65

<table>
<thead>
<tr>
<th>Type 0340</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/2 way, Servo Assist Solenoid Valves For High Flow Application</td>
</tr>
</tbody>
</table>

- **Orifice size**: 8.0 to 40.0 mm
- **QNn**: 1,030 to 25,000 l/min
- **Port connection**: BSP 1/4" to 11/2"
- **Body material**: Brass
- **Seal material**: NBR
- **Media temperature**: 0 to +90°C
- **Pressure range**: 0.5 to +16 bar
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED
- **Electrical connection**: Cable plug to IP65

<table>
<thead>
<tr>
<th>Type 5412 Namur</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/2 way, 5/2 way, Servo Assist High Flow Capacity Solenoid Valves with Manual Override Standard</td>
</tr>
</tbody>
</table>

- **Orifice size**: 8.0 to 9.0 mm
- **QNn**: up to 1,300 l/min
- **Port connection**: BSP, NPT, PT 1/4", Namur or block (gang) mounting. Block inlet 1/2"
- **Body material**: Polyamide or Aluminum (5/3 way)
- **Seal material**: NBR/PUR, NBR
- **Media temperature**: 0 to +60°C
- **Pressure range**: 1.5 to 10 bar
- **Voltage**: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
- **Duty cycle**: 100% ED (60% ED for block assembly)
- **Electrical connection**: Cable plug to IP65
Range of Solenoid Valves for Pneumatic Application

- Valve Islands with Fieldbus Interface / Electrical and Pneumatic Automation System

Valve islands with fieldbus interface are valve blocks with a common electrical control. Valve blocks are conventionally connected and controlled with single wiring. In the case of a valve island with fieldbus interface, communication is implemented within the system.

The most important modules are as follows:
- Basic pneumatic modules for width per station 11, 16.5, 19 and 33 mm with differing numbers of valve positions; maximum number of valves on a valve block with fieldbus interface: 24 (up to 168 valves can be addressed via RIO expansion)
- Valves are screwed on to the basic pneumatic modules from the front
- Pneumatic connector modules for connection of the compressed air and exhaust air
- Basic electrical modules (power supply, feedback indicator, manual-automatic switch, external deactivation devices, digital outputs, etc.)
- Feedback indicator for digital inputs on the valve block with fieldbus interface, max. 32
- An additional 48 digital inputs or outputs can be integrated via a separate I/O module.
- Conventional electrical control with bus terminal and multi-pin
- Electrical control via fieldbus modules (Profinet, Interbus, DeviceNet, CANopen, Selecnet and AS-i)
- Up to 7 valve terminals with fieldbus interface can be controlled with a fieldbus node via RIO expansion (with PROFIBUS).
- Other special features include integrated check valve in the P-Channel for easy valve replacement without interruption to operation and/or integrated check valves in the R-Channel to eliminate switching errors due to congestion in the exhaust duct.
- All module versions are described in full detail on the data sheets or in the configurator for valve blocks with fieldbus interface, Type 8640.

control systems, e.g. for flowrate, pressure, temperature, filling level and chemical parameters, are controlled via corresponding binary and analog output modules. Pneumatic outlets with an extremely wide variety of circuit functions and flow rates switch single or double-acting process valves. AirLINE can be set up without tools by means of an extremely simple snap-on mechanism on a standard rail. This enables a flexible, application-oriented configuration.

AirLINE offers the option of integrating the following pneumatic functions in distributed, fieldbus enabled I/O system platforms:
- 3/2-way, 5/2-way monostable, 5/2-way bistable and 5/3-way functions
- 11 mm width per station, flow rate of up to 300 Nl/min
- 16.5 mm width per station, flow rate of up to 700 Nl/min
- Various flow rates can be combined in one system
- Pressure range from vacuum to 10 bar
- 64 valves per station.

In addition, other functions are offered to the user:
- Integration of check valves (for a description, see above: Valve blocks with fieldbus interface)
- Integration of P shut-off (for a description, see above: Valve blocks with fieldbus interface)
- Various pressure stages can be implemented in an interlinked system
- Grouped supply and exhaust air
- Valves are accessible from the front
- Option for subsequent on-site expansion
- Intelligent pressure measuring module for processing limit values, threshold values and a great deal more.

Summary of AirLINE system advantages:
- Function oriented configuration of distributed units
- No cross-wiring
- Clear reduction in control cabinet configuration
- Only one fieldbus interface for the entire functional unit
- Simple configuration and expansion options directly on-site
- Maximum flexibility due to fine modularity
- Space saving in the control cabinet

Selection criteria for pilot valves and pilot valve units:
- Number of actuators to be controlled
- Control signal direct or from a central control unit
- Control without and/or with communication
- Operating voltage
- Minimum pilot air flow rate for the actuator
- Required tube length between pilot valve and actuator
- Mounting method on actuator with single valves
- Valve block with mounting interface, with mounting in control room/ control cabinet; long tubes.

AirLINE System
- Type 8644, WAGO I/O system
- Type 8644, Phoenix INLINE System
- Type 8644, Siemens ET 200S System
- Type 8640, Rockwell Point I/O System

AirLINE Electrical and pneumatic automation system is a distributed periphery and innovative I/O systems for ideal solutions in the control cabinet.

The I/O systems are available from a number of manufacturers, e.g.:
- Siemens-SIMATIC ET 200S
- Phoenix Contact INLINE System
- WAGO: I/O System 750
- Rockwell: Point I/O System.

More flexible, smaller, faster and less expensive – these are the trends in automation. Distributed periphery means plugging in instead of wiring. The automatic cross-wiring is achieved by an integrated plug connection system.

With their high flexibility, distributed peripherals ensure long-term savings. Wiring and piping are very easy and the fine modular design of the systems allows multi-functional use of the station. One other advantage is the reduction in space required in the control cabinet.

These distributed peripheral systems have one thing in common: input and output system and valve block with fieldbus interface are integrated in a single unit.

This system is the universal interface between the process and installation control. Sensor inputs are scanned via binary and analog input modules and final control elements or complete, distributed...
### Range of Angle Seat, Globe & General Purpose Diaphragm Pneumatic Operated On/Off Valves

- For almost any applications

#### Type 2000
2/2 way, Angle Seat Valve
- Flow Above Seat
- Flow Below Seat (Water Hammer Free)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>15.0 to 65.0 mm</td>
</tr>
<tr>
<td>Kv</td>
<td>3.7 to 77.0 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>BSP, NPT, PT 1/2&quot; to 21/2&quot;, Flanged (DIN) DN15 to DN50 (Weld ends and Tri-Clamp version on request)</td>
</tr>
<tr>
<td>Actuator size</td>
<td>Ø 40mm to Ø 125mm</td>
</tr>
<tr>
<td>Body material</td>
<td>Gunmetal or stainless steel</td>
</tr>
<tr>
<td>Actuator material</td>
<td>Polyamide or PPS</td>
</tr>
<tr>
<td>Seal material</td>
<td>PTFE</td>
</tr>
<tr>
<td>Media temperature</td>
<td>0 to +180°C</td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>0 to 16 bar (max. 10 bar for steam)</td>
</tr>
<tr>
<td>Pilot Pressure</td>
<td>3 to 10 bar</td>
</tr>
</tbody>
</table>

#### Type 2012
2/2 way, Globe Valve
- Flow Above Seat
- Flow Below Seat (Water Hammer Free)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>15.0 to 100.0 mm</td>
</tr>
<tr>
<td>Kv</td>
<td>4.7 to 170.0 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>BSP, NPT, PT 1/2&quot; to 21/2&quot;, Flanged DN10 to DN100 (DIN, JIS, ANSI) (Weld ends and Tri-Clamp version on request)</td>
</tr>
<tr>
<td>Actuator size</td>
<td>Ø 40mm to Ø 225mm</td>
</tr>
<tr>
<td>Body material</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Actuator material</td>
<td>Polyamide or PPS</td>
</tr>
<tr>
<td>Seal material</td>
<td>PTFE</td>
</tr>
<tr>
<td>Media temperature</td>
<td>0 to +180°C</td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>0 to 16 bar (max. 10 bar for steam)</td>
</tr>
<tr>
<td>Pilot Pressure</td>
<td>3 to 10 bar</td>
</tr>
</tbody>
</table>

#### Type 2002
3/2 way, Double Seat Globe Valve

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>15.0 to 50.0 mm</td>
</tr>
<tr>
<td>Kv</td>
<td>9.0 to 37.0 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>BSP, NPT, PT 1/2&quot; to 2&quot;</td>
</tr>
<tr>
<td>Actuator size</td>
<td>Ø 50mm to Ø 125mm</td>
</tr>
<tr>
<td>Body material</td>
<td>Gunmetal</td>
</tr>
<tr>
<td>Actuator material</td>
<td>Polyamide</td>
</tr>
<tr>
<td>Seal material</td>
<td>PTFE</td>
</tr>
<tr>
<td>Media temperature</td>
<td>0 to +180°C</td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>0 to 16 bar (max. 10 bar for steam)</td>
</tr>
<tr>
<td>Pilot Pressure</td>
<td>4 to 10 bar</td>
</tr>
</tbody>
</table>

#### Type 2030
Plastic 2/2 way, Diaphragm Valve

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>15.0 to 100.0 mm</td>
</tr>
<tr>
<td>Kv</td>
<td>3.5 to 160 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>Socket union, Fusion spigot, Flange (Other connections on request)</td>
</tr>
<tr>
<td>Actuator size</td>
<td>Ø 50mm to Ø 225mm</td>
</tr>
<tr>
<td>Body material</td>
<td>PVC, PVDF or PP</td>
</tr>
<tr>
<td>Actuator material</td>
<td>PA</td>
</tr>
<tr>
<td>Seal material</td>
<td>EPDM, PTFE/Butyl or PTFE/EPDM</td>
</tr>
<tr>
<td>Media temperature</td>
<td>0 to +130°C(PVDF) 0 to 60°C(PVC)</td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>0 up to 10 bar</td>
</tr>
<tr>
<td>Pilot Pressure</td>
<td>5 to 7 bar</td>
</tr>
</tbody>
</table>

#### Type 2031GP
- Cold Form Tube Stainless Steel, 2/2 way, Diaphragm Valve

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice size</td>
<td>8.0 to 100.0 mm</td>
</tr>
<tr>
<td>Kv</td>
<td>1.0 to 265.0 m³/h</td>
</tr>
<tr>
<td>Port connection</td>
<td>BSP, NPT, PT 1/2&quot; to 2&quot;, Flanged or weld ends (DIN) DN15 to DN100</td>
</tr>
<tr>
<td>Actuator size</td>
<td>Ø 40mm to Ø 225mm</td>
</tr>
<tr>
<td>Body material</td>
<td>Stainless steel 1.4404</td>
</tr>
<tr>
<td>Actuator material</td>
<td>Polyamide, PPS (on request)</td>
</tr>
<tr>
<td>Seal material</td>
<td>EPDM or PTFE/EPDM</td>
</tr>
<tr>
<td>Surface finish</td>
<td>Glass bead (1.6 µm)</td>
</tr>
<tr>
<td>Media temperature</td>
<td>-10 to +130°C,</td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>0 to 10 bar</td>
</tr>
<tr>
<td>Pilot Pressure</td>
<td>5 to 10 bar</td>
</tr>
</tbody>
</table>
Range of Diaphragm Valves
Manual And Pneumatic Operated On/Off Valves
- For Ultra Pure, Sterile and Hygienic Applications

**Type 2031 Pneumatic Operated**
**Type 3233 Handwheel Operated**
**Forged Stainless Steel, 2/2 way, Diaphragm Valve**
Orifice size :  8.0 to 100.0 mm
Kv :  1.0 to 235.0 m³/h
Port conn. :  Weld ends to DIN, BS, ISO, SMS, Tri-Clamp to DIN, ISO, SMS, ASME
(Other connections on request)

** Normally closed or normally open with spring return actuator or double acting function.**
**Actuator size :**

<table>
<thead>
<tr>
<th>Size</th>
<th>Pressure</th>
<th>Media temp.</th>
<th>Actuator</th>
<th>Actuator material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 40mm to Ø 225mm</td>
<td>5 to 7 bar</td>
<td>-10 to +190°C</td>
<td>PA (Actuator Ø 225mm)</td>
<td>PPS, PA (on request)</td>
</tr>
</tbody>
</table>

**Body material :**
Forged or Block Stainless steel 316L/1.4435/BN2
**Seal material :**
EPDM or PTFE/EPDM
**Surface finish (Internal) :**
Ra ≤ 0.25µm to ≤ 0.5 µm
**Surface finish (External) :**
Ra ≤ 0.25µm to ≤ 1.6 µm

**Pneumatic Operated Version**

**Type 2032 Pneumatic Operated**
**Type 3234 Handwheel Operated**
**For Ultra Pure, Sterile and Hygienic Applications**
**Zero Deadleg T Diaphragm Valve**
Orifice size :  8.0 to 50.0 mm
Kv :  1.0 to 51.5 m³/h
Conn. Size :  DN4 up to DN100 mm
Port conn. :  Weld ends to DIN, ISO, SMS, ASME, BS Tri-Clamp to DIN, ISO, SMS, ASME
(Other connections on request)

** Normally closed or normally open with spring return actuator or double acting function.**
**Actuator size :**

<table>
<thead>
<tr>
<th>Size</th>
<th>Pressure</th>
<th>Media temp.</th>
<th>Actuator</th>
<th>Actuator material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 40mm to Ø 125mm</td>
<td>5 to 7 bar</td>
<td>-10 to +190°C</td>
<td>PA (Actuator Ø 175mm to Ø 225mm)</td>
<td>PPS or Stainless steel</td>
</tr>
</tbody>
</table>

**Body material :**
Monoblock Stainless steel 316L/1.4435/BN2
**Seal material :**
EPDM or PTFE/EPDM
**Surface finish (Internal) :**
Ra ≤ 0.25µm to ≤ 0.8 µm
**Surface finish (External) :**
Ra ≤ 0.25µm to ≤ 1.6 µm

**Pneumatic Operated Version**

**Type 2033 Pneumatic Operated**
**Type 3235 Handwheel Operated**
**Tank Bottom Diaphragm Valve**
Orifice size :  15.0 to 100.0 mm
Kv :  4.0 to 235.0 m³/h
Port connection :  Weld ends to DIN, ISO, SMS, ASME Tri-Clamp to DIN, ISO, SMS, BS
(Other connections on request)

** Normally closed or normally open with spring return actuator or double acting function.**
**Actuator size :**

<table>
<thead>
<tr>
<th>Size</th>
<th>Pressure</th>
<th>Media temp.</th>
<th>Actuator</th>
<th>Actuator material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 40mm to Ø 125mm</td>
<td>5 to 7 bar</td>
<td>-10 to +190°C</td>
<td>PA (Actuator Ø 175mm to Ø 225mm)</td>
<td>PPS or Stainless steel</td>
</tr>
</tbody>
</table>

**Body material :**
Monoblock or weld Stainless steel 316L/1.4435
**Seal material :**
EPDM or PTFE/EPDM
**Surface finish (Internal) :**
Ra ≤ 0.25µm to ≤ 0.5 µm
**Surface finish (External) :**
Ra ≤ 0.25µm to ≤ 3.2 µm

**Pneumatic Operated Version**

**Customized Welded Solutions**
GMP welded solutions
Burkert offers customized welded solutions with manually or pneumatically operated valves. All systems are developed allowing for optimum cleanability (GMP compliance). The dead volumes and number of welding seams are reduced to a minimum. SAP (Sterile Access Port)

This welded solution is particularly well-suited to sampling media. Other applications include sterilization, condensate drain or CIP cleaning.

**Customized Multifunction Blocks**
These valve solutions for the aseptic sector are developed with a special CAD system in order to necessitate as little space and dead volume as possible in accordance with customer requirements. The blocks are made of solid stainless steel (316L), thus allowing a compact design with zero dead volumes and welding seams. A special software package is used to optimize the block design in terms of the flow paths.
# Range of Ball Valves

- Manual And Pneumatic Operated On/Off Valves
- For more demanding Applications

<table>
<thead>
<tr>
<th>Type</th>
<th>Lever Operated</th>
<th>Electric Operated</th>
<th>Pneumatic Operated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type MV2650-2</strong></td>
<td>Plastic Lever Operated</td>
<td>Plastic Electric Operated</td>
<td>Plastic Pneumatic Operated</td>
</tr>
<tr>
<td><strong>Type AV2650-2</strong></td>
<td>Pneumatic Operated</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type EV2650-2</strong></td>
<td>Electric Operated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Bore Ball Valve</td>
<td>2/2 way, 2 pcs Body Design Quarter Turn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orifice size</td>
<td>15.0 to 80.0 mm</td>
<td>3.0 to 100.0 m³/h</td>
<td>8.0 to 4,812.0 m³/h</td>
</tr>
<tr>
<td>Kv</td>
<td>11.0 to 506.0 m³/h</td>
<td>8.0 to 4,812.0 m³/h</td>
<td></td>
</tr>
<tr>
<td>Body material</td>
<td>Investment Cast Stainless steel CF8M</td>
<td></td>
<td>Investment Cast Stainless steel CF8M</td>
</tr>
<tr>
<td>Seat</td>
<td>RPTFE or MG1241</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media temp.</td>
<td>-10 to +120°C (RPTFE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>Up to PN100 depending on type and size of actuator</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type MV2650-3</th>
<th>Lever Operated</th>
<th>Electric Operated</th>
<th>Pneumatic Operated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type AV2650-3</strong></td>
<td>Plastic Lever Operated</td>
<td>Plastic Electric Operated</td>
<td>Plastic Pneumatic Operated</td>
</tr>
<tr>
<td><strong>Type EV2650-3</strong></td>
<td>Electric Operated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn Full Bore Ball Valve</td>
<td>2/2 way, 3 pcs Body Design Quarter Turn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orifice size</td>
<td>15.0 to 100.0 mm</td>
<td>8.0 to 4,812.0 m³/h</td>
<td></td>
</tr>
<tr>
<td>Kv</td>
<td>2.0 to 773.0 m³/h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body material</td>
<td>Investment Cast Stainless steel CF8M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seat</td>
<td>RPTFE or MG1241</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media temp.</td>
<td>-10 to +120°C (RPTFE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>Up to PN64 depending on type and size of actuator</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type MV2650-FL</th>
<th>Lever Operated</th>
<th>Electric Operated</th>
<th>Pneumatic Operated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type AV2650-FL</strong></td>
<td>Plastic Lever Operated</td>
<td>Plastic Electric Operated</td>
<td>Plastic Pneumatic Operated</td>
</tr>
<tr>
<td><strong>Type EV2650-FL</strong></td>
<td>Electric Operated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Bore Ball Valve</td>
<td>2/2 way, 3 pcs Body Design Quarter Turn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orifice size</td>
<td>15.0 to 200.0 mm</td>
<td>8.0 to 8,412.0 m³/h</td>
<td></td>
</tr>
<tr>
<td>Kv</td>
<td>8.0 to 8,412.0 m³/h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body material</td>
<td>Investment Cast Stainless steel CF8M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seat</td>
<td>RPTFE or MG1241</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media temp.</td>
<td>-10 to +120°C (RPTFE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media Pressure range</td>
<td>Up to PN64 depending on type and size of actuator</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Common Data

- **Lever Operated Version**
  - Stainless Steel Lever with locking device for stainless steel ball valve
  - uPVC Lever for plastic ball valve
  - Pneumatic Operated Version
  - Normally closed or normally open with spring return actuator or double acting function.
  - Media Pressure range: 0 to 10 bar (Up to 100 bar possible with different sizes of pneumatic actuator)
  - Pneumatic Actuator: Rack and pinion type
  - Actuator Material: Extruded aluminum alloy gold anodized body, die cast aluminium alloy black epoxy coated end caps, carbon steel zinc plated pinion
  - Pilot Pressure range: 5 to 8 bar
  - Option: Manual override, Electric Feedback, Pilot Valve, Positioner

- **Electric Operated Version**
  - Synchronous motor electric actuator with manual override and 2x additional limit switches for electric feedback as standard
  - Media Pressure range: 0 to 10 bar (Up to 100 bar possible with different sizes of electric actuator)
  - Actuator Material: Cover of ABS, Housing of PA, Axis of Stainless steel, Gear of Steel and PC
  - Voltage: 24V, 110V, 230V AC 50 or 60Hz, 24VDC
  - Duty cycle: 50%
  - Operating time: 9 to 100 sec
  - Type of protection: IP65
  - Option: Potentiometer feedback, positioner version with 4...20mA output

### Range of Ball Valves

- **Type MV2650-VK**
  - Plastic Lever Operated
  - **Type AV2650-VK**
    - Plastic Pneumatic Operated
  - **Type EV2650-VK**
    - Plastic Electric Operated
    - 2/2 way, Quarter Turn Plastic Ball Valve
    - Orifice size: 10.0 to 100.0 mm
    - Kv: 4.8 to 570.0 m³/h
    - Body material: uPVC (other material on request)
    - Seat/Seal: PTFE/EPDM or PTFE/FPM
    - Port conn.: True union socket ends Ø16 to Ø110 mm (DIN standard)
    - Media temp.: 0 to +60°C (reduction in rated pressure with increase in temperature >20°C)
    - Media Pressure range: Up to 16 bar (DN10 to DN50 mm) Up to 10 bar (DN65 to DN100 mm)
Range of Butterfly Valves
- Manual And Pneumatic Operated On/Off Valves
- For higher flow applications

**Type ST2670-MV-Wafer**
- Lever or Gear Operated
- Pneumatic Operated
- 2/2 way, Quarter Turn Wafer Pattern Butterfly Valve

| Orifice size | : 50.0 to 600.0 mm |
| Kv           | : 69.0 to 24,397.0 m³/h |
| Body material| : Ductile Iron (Cast Iron, Stainless steel and others on request) |
| Disc and stem material | : Stainless steel 316 (other material on request) |
| Seat | : EPDM or FPM (others on request) |
| Design | : Wafer type, suitable for mounting between ANSI, DIN and JIS flanges (Cartridge type seat version, for higher pressure and easy seat replacement, available on request) |
| Media temperature | : -30°C to +110°C (EPDM) (higher temperature version depending on seat material on request) |
| Pressure rating | : PN10/16, ANSI150lbs, JIS5/10K |
| Media tight shut off pressure | : 20 bar (Standard seat) 22 bar (Cartridge seat) |

**Type ST2670-EV-Wafer**
- Electric Operated
- 2/2 way, Quarter Turn Wafer Pattern Butterfly Valve

| Orifice size | : 50.0 to 600.0 mm |
| Kv           | : 69.0 to 24,397.0 m³/h |
| Body material| : Ductile Iron (Cast Iron, Stainless steel and others on request) |
| Disc and stem material | : Stainless steel 316 (other material on request) |
| Seat | : EPDM as standard, (FPM, PTFE and others on request) |
| Design | : Wafer type, suitable for mounting between ANSI, DIN and JIS flanges (Cartridge type seat version, for higher pressure and easy seat replacement, available on request) |
| Media temperature | : -30°C to +110°C (EPDM) (higher temperature version depending on seat material on request) |
| Pressure rating | : PN10/16, ANSI150lbs, JIS5/10K |
| Media tight shut off pressure | : 20 bar (Standard seat) 22 bar (Cartridge seat) |

**Common Data**
- Lever or Gear Operated Version
  - Normally closed or normally open with spring return actuator or double acting function.
  - Possible valve Size : Metal butterfly valve
    - Up to DN300 for double acting version
    - Up to DN250 for spring return version
  - Plastic butterfly valve
    - Up to DN200
  - Media Pressure range : 0 to 10 bar (higher pressure possible with different sizes of pneumatic actuator)
  - Pneumatic Actuator Material : Rack and pinion type
  - Actuator Material : Extruded aluminum alloy gold anodized body, die cast aluminum alloy black epoxy coated end caps, carbon steel zinc plated pinion
  - Pilot Pressure range : 5 to 8 bar
  - Option : Manual override, Electric Feedback, Pilot Valve, Positioner

- Electric Operated Version
  - Synchronous motor electric actuator with manual override and 2x additional limit switches for electric feedback as standard
  - Possible valve Size : Up to DN150 (metal and plastic valve)
  - Media Pressure range : 0 to 10 bar (higher pressure possible with different sizes of electric actuator)
  - Actuator Material : Cover of ABS, Housing of PA, Axis of Stainless steel, Gear of Steel and PC
  - Voltage : 24V, 110V, 230V AC 50 or 60Hz, 24VDC
  - Duty cycle : 50%
  - Operating time : 9 to 100 sec
  - Type of protection : IP65
  - Option : Potentiometer feedback, positioner version with 4...20mA input

**Type MV2670-FE-Plastic**
- Lever Operated
- Pneumatic Operated
- 2/2 way, Quarter Turn uPVC Butterfly Valve

| Orifice size | : 40.0 to 200.0 mm |
| Kv           | : 69.0 to 1,830.0 m³/h |
| Body and disc material | : uPVC (others on request) |
| Stem material | : Zinc plated steel (others on request) |
| Seat and seal | : Wafer type, suitable for mounting between ANSI, DIN and JIS flanges |
| Design | : Wafer type, suitable for mounting between ANSI, DIN and JIS flanges |
| Media temperature | : 0 to +60°C (reduction in rated pressure with increase in temperature >20°C) |
| Pressure rating | : PN10/16, ANSI150lbs, JIS5/10K |
| Media Pressure range | : Up to 16 bar (DN40 & DN50 mm) Up to 10 bar (DN65 to DN200 mm) |
Range of Pneumatic Operated Continuous Control Valve

Angle Seat, Globe or Diaphragm Design
- With Top or Side Control (Smart Positioner with Integrated PID Controller)

**Type 2632 / 2702**
2/2 way, Pneumatic Actuated
Angle Seat Proportional Control Valve
Normally closed or normally open with spring return actuator:
- Orifice size: 8.0 to 100.0 mm
- Kv: 1.0 to 235.0 m³/h
- Body material: Forged Stainless Steel

**Type 2731**
2/2 way, Pneumatic Actuated Diaphragm Pattern Proportional Control Valve
General Purpose, Cast Stainless Steel or Forged Stainless Steel Versions.
Normally closed or normally open with spring return actuator:
- Orifice size: 8.0 to 100.0 mm
- Kv: 1.0 to 235.0 m³/h
- Body material: Stainless Steel 1.4404

**Type 2712**
2/2 way, Pneumatic Actuated Globe Pattern Proportional Control Valve
Normally closed or normally open with spring return actuator:
- Orifice size: 10.0 to 100.0 mm
- Kv: 0.3 to 140.0 m³/h
- Body material: Cast Stainless steel 316L

**General Purpose Cold Form Tube Stainless Steel Version**
- Orifice size: 8.0 to 100.0 mm
- Kv: 1.0 to 265.0 m³/h
- Body material: Stainless Steel 1.4404

**Type 2730**
2/2 way, Pneumatic Actuated Diaphragm Pattern Proportional Control Valve
Normally closed or normally open with spring return actuator:
- Orifice size: 15.0 to 100.0 mm
- Kv: 4.0 to 265.0 m³/h
- Body material: uPVC (PP or PVDF on request)
Range of ElectroPneumatic Positioners for Continuous Control Valve
- Top or Side Control (Smart Positioners / with Integrated PID Controller)

**Type 8630 TopControl**
Smart ElectroPneumatic Positioner with Optional Process Controller for Linear Actuator
- Compact design for mounting on linear actuators.
- All moving components for stroke feedback are protected by integrating them into the housing.
- Communication can be performed using PROFIBUS DP/DPV1 or DeviceNet.
- Set-point presetting via standard voltage or current signal (0(5)...10 V, 0(4)...20 mA).
- The process controller (PID) with automatic programming, optionally integrated, enables implementation of distributed process control loops at low cost.
- The input signals for the actual process frequency or PT100 value allow use of simple sensor systems without transmitter.
- Different internal pilots with differing air rates for adapting to actuator’s volume.
- Low air consumption. No air consumption when system is in steady state.
- Optionally, up to two initiators can be integrated as limit switches.
- Manageable and clearly structured operating concept featuring extensive software functionality.

**Type 1067 SideControl**
Smart ElectroPneumatic Positioner with Integral Process Controller for Linear or Rotary Actuator
- Compact body made of rugged aluminum.
- Integrated process controller (PID) allows implementation of distributed control loops optionally combined with analog feedback for central detection or evaluation.
- Clear operation due to plain text display and three section keypad.
- Standard NAMUR and DIN IEC mounting on linear and rotary actuators and on Bürkert control valves.
- For reasons relating to accessibility or difficult ambient conditions, a remote version can be used (remote from the positioning valve).
- Low air consumption. No air consumption when system is in steady state.
- Different internal pilot versions for differing air rates enables the positioner to be optimally matched to the actuator volume.
- The pneumatic actuating system can also be manually operated as an emergency function or for commissioning.
- Manageable and clearly structured operating concept featuring extensive software functionality.

**Material**:
- Housing: PPE/PA
- Cover: Transparent

**Input**:
- For position or process set-point: 0(4)...20mA / 0...5V
- Input for Process value for PID controller: 4...20mA, PT100, Frequency
- Binary input: Make or break contact (for safe position)
- Optional Position feedback: 4...20mA, 2 binary output, inductive proximity switches (option)

**Optional Bus communication**:
- Profibus DP or DeviceNet
- IP65

**Power Supply**:
- 24V DC

**Type of protection**:

**Ambient temperature**:
- up to +50°C
- up to 7 bar

**Position sensor system**:
- Internal high resolution potentiometer
- Self - tuning

**PID controller parameter range**:
- 0.0 to 999.9
- 0.5 to 999.9
- 0.0 to 999.9
- 0 to 100%

**Type 8635 SideControl**
Smart ElectroPneumatic Positioner for Linear or Rotary actuator.
II (1)2G EEx ia IIC approval, optional
- The electronics system is designed on the basis of a 2-wire circuit: power supply via 4...20 mA signal or PROFIBUS PA.
- Optional EEx is IIC T4/T5/T6 (intrinsically safe) in accordance with ATEX.
- Distributed control loops can be implemented if the integrated process controller with PID controller structure is selected.
- Setting of the process controller parameters can be automated (S/HART).
- Easy usage in rough environments is ensured by the rugged design of the hard-coated and plastic-coated body and the design of the electronic components.
- Display and operating buttons are protected in the body.
- Standard NAMUR and DIN IEC mounting on reciprocating and rotary actuators and on Bürkert control valves.
- Up to 2 initiators can be optionally integrated as limit switches, independent of the electronics.
- The pneumatic actuating system features a high air rate (55...170 Nl/min), without an air consumption when system is in steady state.
- A restrictor screw can be utilized to adjust the air rate to the actuator being used.
- Purging the body with clean air prevents condensate formation and penetration of ambient atmosphere into the body.
- A pressure gauge block indicating supply and/or chamber pressure, made fully of SS, can be mounted on.

**Material**:
- Housing: Aluminum, painted
- Fluid Manifold: Aluminum Anodized

**Input for position or process set-point**:
- 0(4)...20mA / 0...10V

**PID controller**:
- 4...20mA
- Binary input: Make or break contact (for safe position)
- Optional Position feedback: 4...20mA (option)
- Power Supply: 24V DC
- Type of protection: IP65
- Ambient temperature: up to +60°C
- Pilot pressure: up to 6 bar
- Position sensor system: External for Burkert Control Valve
- Internal for rotary turn actuator

**Type 8635 PA**
- Profibus PA

**Type 1067 S**
- HART
- Type 8635 PA: Profibus PA

**Type of protection**:
- IP65

**Ambient temperature**:
- up to 60°C

**Pilot pressure**:
- up to 6 bar

*(Please refer to technical data sheet for more information and of electrical data on PA and EEx is versions.)*
### Type 3003 Electric Actuator

For Quarter Turn Valves

**Output Torque**: 20, 35, 60 or 100 Nm version

**Angle of rotation**: 90° (±5%) (180° on request)

**Rotation time**: 9 up to 28 sec (20 up to 100 sec for positioner version)

**Fixation**: ISO 5211

**Drive**: Female star 14 or 17 mm

**Duty rating**: 50% of time at max. torque

**Manual override**: By outgoing axis and return spring

**Power supply**: 115 to 230 V AC and 24 V AC/DC

**Limit switches**: 4 adjustable Max. 230V/5A (2 for the motor and 2 free of potential)

**Standard with visual position indicator and mechanical limits stop**

**Options**:
- Positioner version: Input 4…20 mA or 0…10 V
- Feedback: Potentiometer 1K, 5K or 10K
- Analogue output: 4…20 mA
- Fail safe security block

**Explosion proof version**

### Type 2050 Pneumatic Actuator

**Design**: Double Piston Rack and Pinion

**Version**: Double acting or spring return

**Pilot Pressure**:
- Double acting: 2 to 8 bar (double acting)
- Spring return: 3 to 8 bar (spring return)

**Ambient Temperature**: -20°C to +60°C

**Pilot Media**: Dry or lubricated air, non-corrosive gas, water or light hydraulic oil

**Rotation angle**: 90°

**Rotation direction**: Anti clockwise for spring return actuator

**Output Torque**: Up to 60 Nm

**Fixation**: ISO 5211

**Drive**: Female star 11, 14 or 17 mm

**Material**:
- Body: Glass fiber reinforced PA
- Internal parts: POM and PBT
- Rotary shaft: Stainless steel
- Seals: NBR

**Accessories available**:
- Limit Switch, Solenoid valve, Top control on/off

### Accessories For Direct Mounting to Pneumatic Actuator

#### Solenoid Valves

Available in 3/2 or 5/2 way

Body material of brass, polyamide or aluminum

(For more information, please refer to Range of Solenoid Valves for Pneumatic Applications)

#### Limit Switch Box with Tri-Dimensional Position Indicator

IP67 enclosure with 2 SPDT mechanical limit switches. Housing of powder coated die-cast aluminum and poly carbonate position indicator cover

Options available include transmitter current output, proximity switch, potentiometer resistive output, explosion proof version

#### Manual Override Gearbox

Weather proof housing of cast iron with treated carbon steel worm gear. Lubricated for life.

#### Smart I/P positioner with or without Integrated PID Process Controller

(For more information, please refer to Range of ElectroPneumatic Positioner Type 1067 and Type 8835)
Type 1062
Electrical Position Feedback Unit
For mounting on top of actuator size Ø50mm to Ø125mm
1 or 2 contacts (open or close, open and close position)
Switch Configuration:
Mechanical type 8A/250V AC, 0.25A/250DC
Inductive, 2 wire type 10..30VDC/100mA
Inductive, 3 wire type 10...30VDC/200mA
Inductive, NAMUR Ex i type
Enclosure material : PA with polycarbonate cover
LED indication
Type of protection : IP65

Type 1071
External Magnetic Inductive Position Feedback with Magnetic Piston
For mounting at the side of actuator size Ø50mm to Ø125mm
in combination with stroke adjustment and manual override
1 or 2 contacts (open or close, open and close position)
Operating voltage : 12 to 30 VDC/200mA
Electrical control : Multipole, ASI or DeviceNet
Type of protection : IP65
Optionally available with protection type II 2 G EEx ia (intrinsically safe)

Type 1066
Control Head for Pneumatic Actuated Process Valves with Linear Actuators
Electrical and pneumatic control components as well as position feedback units and, optionally fieldbus interfaces for AS-Interface or DeviceNet, are integrated into the control head.
For single or double acting, 2 or 3 position actuator
Easy mechanical adaptation to various actuator
Body : Noryl with PSU cover
Seal : NBR
Stroke : 2 to 73mmm
Pilot media : un lubricated compressed air, neutral gases
Pilot pressure : 2.5 up to 7 bar
Ambient and Pilot temperature : -10ºC up to +50ºC
Power supply : 24VDC
Feedback : up to 2 micro limit switches 230V/1A
up to 3 inductive switches 8 to 30V/100mA
Electrical control : Multiple, ASI or DeviceNet
Type of protection : IP65

Type 8631
Top Control ON/OFF Control Head
Optimized for Burkert Pneumatic Actuated Process Valves
Electrical and pneumatic control components as well as position feedback units and, optionally fieldbus interfaces for AS-Interface or DeviceNet, are integrated into the control head.
Body : PPE/PA with PSU cover
Seal : NBR
Pilot media : Unlubricated compressed air, neutral gases
Pilot pressure : 3 up to 7 bar
Ambient and Pilot temperature : 0ºC up to +50ºC
Power supply : 24VDC
Feedback : up to 2 micro limit switches
up to 2 inductive switches
Electrical control : Multiple, ASI or DeviceNet
Type of protection : IP65

Maximum Stroke Limiter
Stroke limitation for single acting actuator
For mounting on top of actuator size Ø50mm to Ø125mm
Easy adjustment by Allen Key
Material of stainless steel

Handwheel with Visual Position Indicator
For single acting normally closed actuator
For mounting on top of actuator size Ø50mm to Ø125mm
Range of Mass Flow Controller (MFC) and Mass Flow Meter (MFM) - For Various Gas Handling Applications

**MFC Type 8712**
- MFM Type 8702
  - Bypass principle with new semiconductor flow sensors featuring CMOS technology with high accuracy and fast setting time. This revolutionary bypass measuring technology enables measurement and display times of a few hundred milliseconds.
  - High level of accuracy
  - Fast response and settling time
  - Excellent span
  - Optional calibration for two gases
  - Integrated totalizer
  - Field bus optional
  - Mass Flow Communicator (PC configuration software)
  - 3 binary inputs and 2 binary outputs (relay outputs)
  - Full scale range: 0.02 to 50 l/min (N₂, at 273.15 K and 1013.25 mbar)
  - Setting time: <300 ms
  - Accuracy: ±0.8% of rate ±0.3% F.S.
  - Linearity: ±0.1% F.S.
  - Span: 1:50, 1:500 on request
  - Max. operating pressure: 10 bar depending on the application
  - Type of protection: IP 65
  - Port connection: G1/4", NPT1/4", screw-in connector
  - Analog signal transmission or digital communication (RS-232, RS-485, field bus)
  - Voltage supply: 24 V DC
  - Power consumption max. 10 W
  - Stainless steel body

**MFC Type 8710**
- MFM Type 8700
  - Bypass measuring technology with classical resistor sensor. This indirect measuring method offers the advantage that the measuring resistors are not in direct contact with the medium and therefore can also be used to measure and control aggressive gases.
  - High level of accuracy
  - Excellent span
  - Calibration of critical gases with air and conversion factor
  - Optional calibration for two gases
  - Integrated totalizer
  - Mass Flow Communicator (PC configuration software)
  - 2 binary inputs and 1 binary output (relay output)
  - Full scale range: 0.05 to 30 l/min (N₂, at 273.15 K and 1013.25 mbar)
  - Setting time approx. 3 seconds
  - Accuracy: ±1.0% of rate ±0.3% F.S.
  - Repeatability: ±0.2% F.S.
  - Linearity: ±0.25% F.S.
  - Span: 1:50
  - Max. operating pressure: 10 bar depending on the application
  - Type of protection: IP 65
  - Port connection: G1/4", NPT1/4", screw-in connector
  - Analog signal transmission or digital communication (RS-232, RS-485, field bus)
  - Voltage supply: 24 V DC
  - Power consumption max. 7.5 W
  - Stainless steel body

**MFC Type 8716**
- MFM Type 8706
  - For large flow rates with inline measuring method, enabling these units to feature excellent dynamics and very low sensitivity to dirt.
  - High level of accuracy
  - Fast response and settling time
  - Excellent span
  - Optional calibration for two gases
  - Integrated totalizer
  - Field bus optional
  - Mass Flow Communicator (PC configuration software)
  - 3 binary inputs and 2 binary outputs (relay outputs)
  - Full scale range of 25 to 500 l/min (for 8716), 25 to 1500 l/min (8706), (N₂, at 273.15 K and 1013.25 mbar)
  - Setting time: <500 ms
  - Accuracy: ±1.5% of rate ±0.3% F.S.
  - Repeatability: ±0.1% F.S.
  - Linearity: ±0.25% F.S.
  - Span: 1:50
  - Max. operating pressure: 10 bar depending on the application
  - Type of protection: IP 65
  - Port connection: G1/4", NPT1/4", screw-in connector
  - Analog signal transmission or digital communication (RS-232, RS-485, field bus)
  - Voltage supply: 24 V DC
  - Power consumption max. 32.5 W
  - Stainless steel or aluminum body

**MFC Type 8626**
- MFM Type 8006
  - Inline measuring method, enabling these units to offer excellent dynamics as well as low sensitivity to dirt and low pressure loss. Particularly suitable for very large flow rates and harsh conditions.
  - High level of accuracy
  - Fast response and settling time
  - Excellent span
  - Optional calibration for two gases
  - Integrated totalizer
  - Field bus optional
  - Mass Flow Communicator (PC configuration software)
  - 3 binary inputs and 2 binary outputs (relay outputs)
  - Full scale range of 25 to 1500 l/min (N₂, at 273.15K and 1013.25 mbar)
  - Setting time: <500 ms
  - Accuracy: ±1.5% of rate ±0.3% F.S.
  - Repeatability: ±0.1% F.S.
  - Linearity: ±0.25% F.S.
  - Span: 1:50
  - Max. operating pressure: 10 bar depending on the application
  - Type of protection: IP 65
  - Port connection: G1/4", NPT1/4", screw-in connector
  - Analog signal transmission or digital communication (RS-232, RS-485, field bus)
  - Voltage supply: 24 V DC
  - Power consumption max. 50 W
  - Stainless steel or aluminum body

**Type 8750**
- Flow Controller for Higher Flow Rate
  - Integral solution with control valve, pressure & temperature transmitter for the calculate and control of flow rate according to the pressure drop principle
  - Medium: air, gases up to 80°C (Steam, liquid version on request)

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<table>
<thead>
<tr>
<th>Pressure range</th>
<th>up to 10 bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orifice</td>
<td>DN15 to DN100 mm</td>
</tr>
<tr>
<td>Port connection</td>
<td>DIN Flange, other on request</td>
</tr>
<tr>
<td>Material</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Input/output</td>
<td>0/4 - 20mA, 0-5/10V</td>
</tr>
<tr>
<td>Process value output</td>
<td>4 - 20mA as option</td>
</tr>
<tr>
<td>Communication</td>
<td>Profibus DP, ASI on request</td>
</tr>
<tr>
<td>Type of protection</td>
<td>IP65</td>
</tr>
</tbody>
</table>
Range of Proportional Solenoid Control Valves, Control Electronics and PI Controllers

- Low Cost Solution to Simple Control Loop For Neutral Media Application

**Type 6021**
2/2 way, Direct Acting Proportional Solenoid Control Valve
Required DIN-rail mounting control electronic Type 1094

- Normally closed in event of power failure
  - Orifice size: 0.8 to 1.6 mm
  - Kv: 0.0181 to 0.05 \( m^3/h \)
  - Port connection: BSP, NPT 1/8"
  - Body material: Stainless steel or Brass
  - Seal material: FPM (EPDM or PTFE on request)
  - Span: 1:20
  - Hysteresis: <5%
  - Repeatability: <0.5% F.S.
  - Media temperature: -10 to +90°C
  - Pressure range: up to 12 bar (depending on nominal diameter)
  - Voltage: 24VDC
  - Control signal: Pulse Width Modulated (PWM)
  - Type of protection: IP65

**Type 6022**
2/2 way, Direct Acting Proportional Solenoid Control Valve
Required plug-on control electronic Type 1094

- Normally closed in event of power failure
  - Orifice size: 0.8 to 4.0 mm
  - Kv: 0.018 to 0.58 \( m^3/h \)
  - Port connection: BSP, NPT 1/4"
  - Body material: Stainless steel, Brass
  - Seal material: FPM (EPDM or PTFE on request)
  - Span: 1:25
  - Hysteresis: <0.5%
  - Repeatability: <0.5% F.S.
  - Media temperature: -10 to +90°C
  - Pressure range: up to 16 bar (depending on nominal diameter)
  - Voltage: 24VDC
  - Control signal: Pulse Width Modulated (PWM)
  - Option: EEx m II T4 version
  - Type of protection: IP65

**Type 6023**
2/2 way, Direct Acting Proportional Solenoid Control Valve
Required plug-on control electronic Type 1094

- Normally closed in event of power failure
  - Orifice size: 4 or 6 mm
  - Kv: 0.4 to 0.7 \( m^3/h \)
  - Port connection: BSP, NPT 3/8"
  - Body material: Stainless steel, Brass
  - Seal material: FPM (EPDM or PTFE on request)
  - Span: 1:10
  - Hysteresis: <5%
  - Repeatability: <0.5% F.S.
  - Media temperature: -10 to +90°C
  - Pressure range: up to 4 bar (depending on nominal diameter)
  - Voltage: 24VDC
  - Control signal: Pulse Width Modulated (PWM)
  - Type of protection: IP65

**Type 6223**
2/2 way, Servo-assisted Proportional Solenoid Control Valve
Required plug-on control electronic Type 1094

- Normally closed in event of power failure
  - Orifice size: 10 to 20 mm
  - Kv: 1.4 to 5.0 \( m^3/h \)
  - Port connection: BSP, NPT 3/8" to 1"
  - Body material: Brass or Stainless steel
  - Seal material: FPM (EPDM or PTFE on request)
  - Span: 1:10
  - Hysteresis: <5%
  - Repeatability: <1% F.S.
  - Media temperature: -10 to +90°C
  - Pressure range: Max. 10 bar with min. \( \Delta P \) of 0.5 bar
  - Voltage: 24VDC
  - Control signal: Pulse Width Modulated (PWM)
  - Electrical connection: Cable plug to IP65
  - Type of protection: IP65

**Type 1094**
Control Electronics for Proportional Solenoid Control Valves
Plug-on module or DIN-rail mounting

- Temperature compensation for heating of the coil by integrated current control
- Ramp function for damping sudden control signal changes
- Adjustment of min. and max. flow to the real pressure conditions
- Zero switch-off function
- Set-point Input signal: 0 / 4 to 20mA or 0 to 10V
- Output: PWM for valve control
- Type of protection: IP65 (Plug-on module only)

**Type 8623-2**
Compact PI Controller for Flow / Ratio Control Appication

- Input Signal: 2 frequency inputs (2 to 1000Hz) for actual process value; 1 standard signal (4...20 mA / 0 to 10 V) for remote set point input
- Output Signal: 1 PWM signal output

**Type 8624-2**
Compact PI Controller for Flow and Pressure Control Applications

- Input Signal: 1 standard signal (4...20 mA / 0 to 10 V) for actual process value; 1 standard signal (4...20 mA / 0 to 10 V) for remote set point input
- Output Signal: 1 PWM signal output

**Type 8625-2**
Compact PI Controller for Temperature Control Application

- Input Signal: 1 Pt100 sensor input for actual process value; 1 standard signal (4...20 mA / 0 to 10 V) for remote set point input
- Output Signal: 1 PWM signal output

Common Characteristics / Data

- Direct plug-on to proportional solenoid Control Valve
- Easy programming
- Scalable input signal
- Inverted or non-inverted control
- Zero switch-off function
- Operating voltage: 24VDC
- Type of protection: IP65
- Option: Fieldbus communication
Range of Solenoid Valves, Micro-Pumps, Manifolds and Solutions for MicroFluidics Application

- Medical Technology, Analysis Technology and Biotechnology

**Type 6606**
Direct-acting rocker solenoid valve with isolating diaphragm as 2/2-way or 3/2-way valve. With minimum dead volume and low-gap and thus easy-to-flush inner contour. High quality materials guarantee extreme chemical resistance. The medium only comes into contact with the body and FFKM seal. Coil can be changed easily without having to open the body.

- **Orifice**: 0.8 to 2 mm, Kv: 0.025 to 0.06 m³/h
- **Pressure**: Vacuum up to 2 bar
- **Body / Seal Material**: PEEK / FFKM
- **Voltage**: 12V, 24V DC

**Type 6106**
Direct-acting rocker solenoid valve with media separation as 2/2-way or 3/2-way valve. With minimum dead volume and low-gap inner contour. Width per station: 11 mm. Used primarily for very small quantities of aggressive media.

- **Orifice**: 0.6 mm, Kv: 0.0074 m³/h
- **Pressure**: Vacuum up to 3 bar
- **Body / Seal Material**: PEEK / FFKM
- **Voltage**: 12V, 24V DC

**Type 6104**
Direct-acting flipper solenoid valve, 2/2-way or 3/2-way with media separation. With monostable or bistable (pulse) switching function. Pulse switching with only 20 ms pulse length and extremely low energy demand, consequently particularly suitable for battery operation. Minimum dead volume and easy-to-flush inner contour. High quality materials guarantee extreme chemical resistance. The medium only comes into contact with the body and FFKM seal. Coil can be changed easily without having to open the body.

- **Orifice**: <0.6 mm, Kv: 0.0074 m³/h
- **Pressure**: Vacuum up to 3 bar
- **Voltage**: 12V, 24V DC

**Type 6124**
Direct-acting flipper solenoid valve, 2/2-way or 3/2-way with media separation. With monostable or bistable (pulse) switching function. Pulse switching with only 20 ms pulse length and extremely low energy demand, consequently particularly suitable for battery operation. Minimum dead volume and easy-to-flush inner contour. High quality materials guarantee extreme chemical resistance. The medium only comes into contact with the body and FFKM seal. Coil can be changed easily without having to open the body.

- **Orifice**: <0.6 mm, Kv: 0.0074 m³/h
- **Pressure**: Vacuum up to 3 bar
- **Voltage**: 12V, 24V DC

**Type 6126**
Direct-acting rocker solenoid valve, 2/2-way or 3/2-way. A diaphragm separates the medium from the actuator. In addition, the coil and actuator are separated by means of a stainless steel plate. Universal use for applications involving switching small quantities of compressed air or lightly contaminated fluids.

- **Orifice**: 0.8 to 2 mm, Kv: 0.01 m³/h
- **Pressure**: Vacuum up to 10 bar
- **Body**: PPS for subbase body, PPS, Brass or SS for M5 valve body
- **Seal**: FPM or EPDM
- **Voltage**: 12V, 24V DC, 110, 230VUC

**Type 6128**
Rocker solenoid actuator with medium separated PPS body with dead volume optimized and easy-to-flush inner contour. Central screw fixture of the coil allows the coil to be exchanged even with the medium applied. Modular body design allows the use of various fluidic connections. Type 6128 can be used universally for applications on which compressed air, vacuum or lightly contaminated or slightly aggressive gases and liquids are to be switched.

- **Orifice**: 2 to 8 mm, Kv: 0.11 to 0.18 m³/h
- **Pressure**: Vacuum up to 10 bar
- **Voltage**: 12V, 24V DC, 110, 230VUC

**Type 7604 Micro-pump**
This micro-pump operates based on the principle of a self-priming diaphragm pump. It was specifically developed for continuous pumping of small quantities of aggressive, inorganic or biological media. Highly precise dosing is possible in combination with an additional flow sensor.

- **Body**: PEEK
- **Seal**: FFKM
- **Media temp**: +10 to +60°C
- **Delivery rate**: max 5 ml/min, Variable control frequency, Virtually pulsation free dosing.

**Type 7616 Micro-dosing unit**
The self-priming, low-dead-volume micro-dosing unit consists of two Type 6604 valves, one Type 6606 valve, one manifold (minimized with a view to the internal volume) and a control circuitry unit (option). The delivery rate can be adjusted via the number of cycles (max. 650 cycles/min.) and the optionally adjustable stroke volume (0.5 µl ... 5 µl).

Thanks to the high reproducibility, the unit is suitable for the precise dosing of ultra-small fluid quantities. PEEK and FFKM as the sole wetted materials virtually predestine the unit for use in aggressive media.

**Type 8005 Liquid mass flow meter**
The mass flow meter 8005 allows fast and precise flow rate measurements for fluids down to the nanoliter range. Highly sensitive, intelligent CMOSens micro chips are capable of detecting the mass flow rate bi-directionally and with media separation through a thin PEEK wall. The high dynamics of this measurement principle allows a measuring range of 5 to 1,500 µl/min. The accuracy is better than 1.5 or 3%, respectively, depending on the measuring range, and the detection limit is approx. 150 nanoliters/min. The device is free of dead volume and its response time, at 20 ms (lower limit), is extraordinarily short. The mounting dimension is 14 mm and the type of protection is IP65.

The mass flow meter 8005 can be interconnected with other components to form functional modules such as:
- with valve 6604 and the micro-pump 7604 to produce a dosing unit and
- with valve 6604 and the proportional valve 2822 to form a mass flow controller.

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Range of MicroFluids Valves & Pumps

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## Range of Flow Sensors For Liquids

### - Paddle Wheel, Oval Gear Positive Displacement, Magnetic Inductive Principle

Burkert flow sensors are available in various measurement principles for different applications ranging from high-purity to highly-contaminated media, including aggressive & viscous media.

<table>
<thead>
<tr>
<th>Type 8030</th>
<th>In-Line Paddle Wheel Flow Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean liquid with &lt;1% solids, no fibrous or ferromagnetic material &amp; viscosity &lt;300 cSt. Non-pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 0.3 to 10 m/s (1 to 1,000 l/min)</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: Sinusoidal or NPN/PNP</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: Stainless steel 316L, brass, PVC, PP, PVDF or PE</td>
<td></td>
</tr>
<tr>
<td><strong>Process connection</strong>: Threaded, flanged, true union or weld ends (BSP, NPT, PT, ASTM, JIS, DIN)</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure rating</strong>: PN16 metal, PN10 plastic</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Max. 100°C (depending on fitting material)</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: Coil Sensor: Not required, Hall Sensor: 12 to 36 VDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 8030 HT</th>
<th>In-Line Paddle Wheel Flow Sensor For High Temperature and Pressure Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean liquid with &lt;1% solids, no fibrous or ferromagnetic material &amp; viscosity &lt;300 cSt. Non-pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 0.5 to 10 m/s (1.5 to 1,000 l/min)</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: Sinusoidal or NPN/PNP</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: Stainless steel 316L, brass, PVC, PP, PVDF or PE</td>
<td></td>
</tr>
<tr>
<td><strong>Process connection</strong>: Threaded, flanged, true union or weld ends (BSP, NPT, PT, ASTM, JIS, DIN)</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure rating</strong>: PN16</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Max. 160°C</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: Coil Sensor: Not required, Hall Sensor: 12 to 36 VDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 8031</th>
<th>In-Line Paddle Wheel Flow Sensor For Low Flow Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean liquid with &lt;1% solids, no fibrous or ferromagnetic material &amp; viscosity &lt;10 cSt. Non-pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 10 to 250 l/h</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: NPN/PNP</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: ECTFE (Halar), POM</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Process connection</strong>: Threaded (BSP 1/4&quot;)</td>
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</tr>
<tr>
<td><strong>Pressure rating</strong>: PN10</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Max. 55°C</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: 12-24 VDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 8031 HT</th>
<th>In-Line Paddle Wheel Flow Sensor For High Temperature and Pressure Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean liquid with &lt;1% solids, no fibrous or ferromagnetic material &amp; viscosity &lt;10 cSt. Non-pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 10 to 250 l/h</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: NPN/PNP</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: ECTFE (Halar), POM</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Process connection</strong>: Threaded (BSP 1/4&quot;)</td>
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</tr>
<tr>
<td><strong>Pressure rating</strong>: PN10</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Max. 55°C</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: 12-24 VDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 8070</th>
<th>Oval Gear Positive Displacement Flow Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean liquid with max. 0.25 mm particles, no fibrous material &amp; viscosity up to 1,000 cSt (up to 1,000,000 cSt on request). Non-pulsating &amp; pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 1 to 350 l/min</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: NPN/PNP</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: DN15 to 50 mm (1/2&quot; to 2&quot;)</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: Stainless steel 316L, Aluminium, PPS</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting connection</strong>: Threaded, flanged, true union or weld ends, saddle or weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN)</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure rating</strong>: PN10 metal, PN10 PPS</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Max. 120°C SS, 80 °C PPS</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: 10-36 VDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 8041</th>
<th>Insertion Magnetic Inductive Flow Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean to contaminated (non ferromagnetic) liquid with conductivity &gt;20 mS/cm &amp; viscosity &lt;5000 cSt. Non-pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 0.1 to 10 m/s (1 to 50,000 l/min)</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: 4..20 mA or NPN/PNP &amp; optional relay</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: DN15 to 400 mm (1/2&quot; to 16&quot;)</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: SS 316L, brass, PVC, PP, PVDF or PE</td>
<td></td>
</tr>
<tr>
<td><strong>Process connection</strong>: Threaded, flanged, true union or weld ends, saddle or weld-o-let (BSP/NPT/PT/ASTM/JIS/DIN)</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure rating</strong>: PN16 (metal fitting), PN10 (plastic fitting)</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Up to 150°C (depending on fitting material)</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: 18-36 VDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 8071</th>
<th>Oval Gear Positive Displacement Flow Sensor For Low Flow Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean liquid with max. 0.12 mm particles, no fibrous material &amp; viscosity up to 1,000 cSt. Non-pulsating &amp; pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 0.01 to 0.3 l/min</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: NPN/PNP</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: Stainless steel 316L, PPS</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting connection</strong>: Threaded (BSP, NPT)</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure rating</strong>: PN10 metal (PN550 HP version), PN5 PPS</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Max. 120°C SS, 80 °C PPS</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: 24 VDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 8040</th>
<th>Insertion Magnetic Inductive Flow Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium</strong>: Clean to contaminated (non ferromagnetic) liquid with conductivity &gt;20 mS/cm &amp; viscosity &lt;5000 cSt. Non-pulsating flow.</td>
<td></td>
</tr>
<tr>
<td><strong>Measuring range</strong>: 0.1 to 10 m/s (1 to 50,000 l/min)</td>
<td></td>
</tr>
<tr>
<td><strong>Output type</strong>: 4..20 mA or NPN/PNP</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal diameter</strong>: DN15 to 400 mm (1/2&quot; to 16&quot;)</td>
<td></td>
</tr>
<tr>
<td><strong>Fitting material</strong>: Stainless steel 316L, brass, PVC, PP, PVDF or PE</td>
<td></td>
</tr>
<tr>
<td><strong>Process connection</strong>: Threaded, flanged, true union or weld ends, saddle or weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN)</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure rating</strong>: PN16 (metal fitting), PN10 (plastic fitting)</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature rating</strong>: Up to 80°C</td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong>: 18 to 36 VDC</td>
<td></td>
</tr>
</tbody>
</table>
Burkert flow transmitters (meters) are available in various measuring principles & configuration for different applications from high-purity to highly-contaminated media, including aggressive & viscous media in wide-ranging industries.

### Type 8035

**In-line Paddle Wheel Flow Indicator/Transmitter.** Digital display flow indicator with totalizer & output signal. Flow sensor with 4-vane PVDF paddle wheel pre-installed in fitting. Option with PP paddle wheel available.

<table>
<thead>
<tr>
<th>Medium</th>
<th>Clean liquid with &lt;1% solids, no fibrous or ferromagnetic material &amp; viscosity &lt;300 cSt. Non-pulsating flow.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0.3 to 10 m/s (1 to 1,000 l/min)</td>
</tr>
<tr>
<td>Output signal</td>
<td>4..20 mA &amp; NPN/PNP pulse with optional relay</td>
</tr>
<tr>
<td>Nominal diameter</td>
<td>DN8 to 60 mm (1/2&quot; to 2&quot;)</td>
</tr>
<tr>
<td>Fitting material</td>
<td>Stainless Steel 316L, brass, PVC, PP or PVDF</td>
</tr>
<tr>
<td>Process connection</td>
<td>Threaded, flanged, true union or weld ends (BSP, NPT, PT, ASTM, JIS, DIN).</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>PN16 metal, PN10 plastic.</td>
</tr>
<tr>
<td>Temperature rating</td>
<td>Max. 100°C (depending on fitting material)</td>
</tr>
<tr>
<td>Power supply</td>
<td>2x 9 V batteries, 12 to 30 VDC or 115 VAC/230 VAC</td>
</tr>
</tbody>
</table>

### Type 8025

**Insertion Paddle Wheel Flow Indicator/Transmitter.** Digital display flow indicator with totalizer & output signal. Flow sensor with 4-vane PVDF paddle wheel. Requires Burkert insertion fitting.

<table>
<thead>
<tr>
<th>Medium</th>
<th>Clean liquid with &lt;1% solids, no fibrous or ferromagnetic material &amp; viscosity &lt;300 cSt. Non-pulsating flow.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0.3 to 10 m/s (3 to 50,000 l/min)</td>
</tr>
<tr>
<td>Output signal</td>
<td>4..20 mA &amp; NPN/PNP pulse with optional relay</td>
</tr>
<tr>
<td>Nominal diameter</td>
<td>DN15 to 400 mm (1/2&quot; to 16&quot;)</td>
</tr>
<tr>
<td>Fitting material</td>
<td>Stainless Steel 316L, brass, PVC, PP, PVDF or PE</td>
</tr>
<tr>
<td>Process connection</td>
<td>Threaded, flanged, true union, weld ends, saddle or weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN).</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>PN10</td>
</tr>
<tr>
<td>Temperature rating</td>
<td>Max. 100°C (depending on fitting material)</td>
</tr>
<tr>
<td>Power supply</td>
<td>2x 9 V batteries, 12-30 VDC</td>
</tr>
</tbody>
</table>

### Type 8075

**Oval Gear Positive Displacement Flow Indicator/Transmitter.**

<table>
<thead>
<tr>
<th>Medium</th>
<th>Clean liquid with max. 0.25 mm particles, no fibrous material &amp; viscosity up to 1,000 cSt (up to 1,000,000 cSt on request). Non-pulsating &amp; pulsating flow.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>1 to 350 l/min</td>
</tr>
<tr>
<td>Output signal</td>
<td>4..20 mA &amp; NPN/PNP pulse with optional relay</td>
</tr>
<tr>
<td>Nominal diameter</td>
<td>DN15 to 50 mm (1/2&quot; to 2&quot;)</td>
</tr>
<tr>
<td>Fitting material</td>
<td>Stainless Steel 316L, aluminum or PPS</td>
</tr>
<tr>
<td>Process connection</td>
<td>Threaded, flanged (BSP, NPT, ANSI, DIN).</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>PN55 metal, PN10 PPS</td>
</tr>
<tr>
<td>Temperature rating</td>
<td>Max. 120°C SS, 80 °C Al &amp; PPS</td>
</tr>
<tr>
<td>Power supply</td>
<td>12 to 30 VDC or 115 VAC/230 VAC</td>
</tr>
</tbody>
</table>

### Type 8072

**Oval Gear Positive Displacement Flow Indicator/Switch.**

<table>
<thead>
<tr>
<th>Medium</th>
<th>Clean liquid with max. 0.25 mm particles, no fibrous material &amp; viscosity up to 1,000 cSt (up to 1,000,000 cSt on request). Non-pulsating &amp; pulsating flow.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>1 to 350 l/min</td>
</tr>
<tr>
<td>Output signal</td>
<td>NPN/PNP or relay with optional 4..20 mA</td>
</tr>
<tr>
<td>Nominal diameter</td>
<td>DN15 to 50 mm (1/2&quot; to 2&quot;)</td>
</tr>
<tr>
<td>Fitting material</td>
<td>SS 316L, aluminum or PPS</td>
</tr>
<tr>
<td>Process connection</td>
<td>Threaded, flanged (BSP, NPT, ANSI, DIN).</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>PN55 metal, PN10 PPS</td>
</tr>
<tr>
<td>Temperature rating</td>
<td>Max. 120°C SS, 80 °C Al &amp; PPS</td>
</tr>
<tr>
<td>Power supply</td>
<td>12 to 30 VDC</td>
</tr>
</tbody>
</table>
Range of Flow Transmitters (Meters) For Liquids

- Magnetic Inductive Principle - Insertion or Full Bore Types

Burkert flow meters are available in various measuring principle & configuration for different applications from high-purity to highly-contaminated media, including aggressive & viscous media in wide-ranging industries.

**Type 8045**

- **Medium**: Clean to contaminated (non-ferromagnetic) liquid with conductivity >20 µS/cm & viscosity <5000 cSt. Non-pulsating flow.
- **Measuring range**: 0.1 to 10 m/s (1 to 50,000 l/min)
- **Output signal**: 4..20 mA & NPN/PNP pulse with optional relay
- **Nominal diameter**: DN15 to 400 mm (1/2" to 16")
- **Fitting material**: SS 316L, brass, PVC, PP, PVDF or PE
- **Process connection**: Threaded, flanged, true union, weld ends, saddle or weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN).
- **Pressure rating**: PN16 (metal fitting), PN10 (plastic fitting)
- **Temperature rating**: Up to 80°C (depending on fitting material)
- **Power supply**: 18 to 36 VDC

**Type 8045 HT**
Insertion Magnetic Inductive Flow Indicator/Transmitter - High Temperature. Digital display flow indicator with totalizer & output signal. Flow sensor without moving parts. Movement of conductive medium in magnetic field generated by sensor produces voltage proportional to flow. For higher temperature applications or media unsuitable for PVDF. Requires Burkert insertion fitting.

- **Medium**: Clean to contaminated (non-ferromagnetic) liquid with conductivity >20 µS/cm & viscosity <5000 cSt. Non-pulsating flow.
- **Measuring range**: 0.1 to 10 m/s (1 to 50,000 l/min)
- **Output signal**: 4..20 mA & NPN/PNP pulse with optional relay
- **Nominal diameter**: DN15 to 400 mm (1/2" to 16")
- **Fitting material**: SS 316L, brass, PVC, PP, PVDF or PE
- **Process connection**: Threaded, flanged, true union, weld ends, saddle or weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN).
- **Pressure rating**: PN6
- **Temperature rating**: Up to 150°C (depending on fitting material)
- **Power supply**: 18 to 36 VDC

**Type 8055**
Full-bore Magnetic Inductive Flow Sensor/Meter
Digital display flow indicator with totalizer & output signal. Flow sensor without moving parts. Movement of conductive medium in magnetic field generated by sensor produces voltage proportional to flow.

- **Medium**: Clean to contaminated liquid with conductivity >5 µS/cm & viscosity <5000 cSt. Non-pulsating flow.
- **Measuring range**: 0.1 to 10 m/s (1 to 47,600 l/min; up to 1,883,300 l/min on request)
- **Output signal**: 0/4..20 mA, pulse & open collector with optional RS485/RS232
- **Nominal diameter**: DN3 to DN100 mm (up to DN2000 mm on request)
- **Fitting material**: SS 316L (sanitary version available), carbon steel
- **Lining material**: PP, PTFE (others on request)
- **Process connection**: Flanged, wafer, tri-clamp or other sanitary connections (ASTM, JIS, DIN, etc...).
- **Pressure rating**: PN16
- **Temperature rating**: Up to 150°C (depending on lining material)
- **Power supply**: 90 to 265 VAC (DC version and others on request)
## Range of Flow Switches, Indicators and All-In-One Sensors For Liquids - Magnetic Paddle Wheel, Optical Sensing Principle

Burkert flow meters, switches, indicators and All-In-One Sensors, (Indicator, Switch & Transmitter) are available in various measuring principles & configuration for differ

### Type 8010
**In-line Single Paddle Flow Switch with adjustable switching point for detecting Flow or No flow condition.**
- **Medium:** Clean liquid with <1% solids, no fibrous or ferromagnetic material & viscosity <300 cSt. Non-pulsating flow.
- **Switching range:** 4.7 to 75.9 l/min
- **Switch type:** Normally-open or normally closed SPST reed switch (max. 0.8 A/50 W).
- **Nominal diameter:** DN15 to 50 mm (1/2" to 2")
- **Fitting material:** Stainless steel 316L, brass, PVC, PP or PVDF.
- **Process connection:** Threaded, flanged, true union or weld ends (BSP, NPT, PT, ASTM, JIS, DIN).
- **Pressure rating:** PN16 metal, PN10 plastic.
- **Temperature rating:** Max. 55°C
- **Power supply:** Not required

### Type 8034
**In-line Paddle Wheel Flow Indicator Analog display flow indicator. Flow sensor with 4-vane PVDF paddle wheel pre-installed in fitting.**
- **Medium:** Clean liquid with <1% solids, no fibrous or ferromagnetic material & viscosity <300 cSt. Non-pulsating flow.
- **Measuring range:** 0.3 to 10 m/s (1 to 1,000 l/min)
- **Nominal diameter:** DN8 to 50 mm (1/2" to 2")
- **Fitting material:** Stainless steel 316L, brass, PVC, PP or PVDF.
- **Process connection:** Threaded, flanged, true union & weld ends (BSP, NPT, PT, ASTM, JIS or DIN).
- **Pressure rating:** PN16 metal, PN10 plastic.
- **Temperature rating:** Max. 100°C (depending on fitting material)
- **Power supply:** 2x 1.5 V batteries or 12 to 30 VDC

### Type 8024
**Insertion Paddle Wheel Flow Indicator Analog display flow indicator. Flow sensor with 4-vane PVDF paddle wheel. Requires Burkert insertion fitting.**
- **Medium:** Clean liquid with <1% solids, no fibrous or ferromagnetic material & viscosity <300 cSt. Non-pulsating flow.
- **Measuring range:** 0.3 to 10 m/s (3 to 50,000 l/min)
- **Nominal diameter:** DN15 to 400 mm (1/2" to 16")
- **Fitting material:** Stainless steel 316L, brass, PVC, PP, PVDF or PE.
- **Process connection:** Threaded, flanged, true union, weld ends, saddle & weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN).
- **Pressure rating:** PN10
- **Temperature rating:** Max. 100°C (depending on fitting material)
- **Power supply:** 1.5 V batteries or 12 to 30 VDC

### Type 8039
**In-line Paddle Wheel Flow Indicator/ Switch with Optical Sensing Technology Digital display flow indicator with output signal. Flow sensor with 4-vane PVDF paddle wheel pre-installed in fitting. Optical technology results in ability to measure in medium with ferromagnetic particle contamination.**
- **Medium:** Clean liquid with <1% solids, no fibrous material & viscosity <300 cSt. Non-pulsating flow.
- **Measuring range:** 0.3 to 10 m/s (1 to 1,000 l/min)
- **Nominal diameter:** DN8 to 50 mm (1/2" to 2")
- **Fitting material:** Stainless steel 316L, brass, PVC, PP or PVDF.
- **Process connection:** Threaded, & weld ends (BSP, NPT, PT, ISO).
- **Pressure rating:** PN16 metal, PN10 plastic.
- **Temperature rating:** Max. 100°C (depending on fitting material)
- **Power supply:** 12 to 30 VDC

### Type 8032
**In-line Paddle Wheel Flow Indicator/ Switch/Transmitter Digital display flow indicator with output signal. Flow sensor with 4-vane PVDF paddle wheel pre-installed in fitting.**
- **Medium:** Clean liquid with <1% solids, no fibrous or ferromagnetic material & viscosity <300 cSt. Non-pulsating flow.
- **Measuring range:** 0.3 to 10 m/s (1 to 1,000 l/min)
- **Output signal:** NPN/PNP or relay with optional frequency (NPN)
- **Nominal diameter:** DN8 to 50 mm (1/2" to 2")
- **Fitting material:** Stainless steel 316L, brass, PVC, PP or PVDF.
- **Process connection:** Threaded, flanged, true union or weld ends (BSP, NPT, PT, ASTM, JIS, DIN).
- **Pressure rating:** PN16 metal, PN10 plastic.
- **Temperature rating:** Max. 100°C (depending on fitting material)
- **Power supply:** 12 to 30 VDC

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Range of Flow Switches & Indicators
# Range of Remote Display, Transmitter, Switch & Accessories

- Connectable to Burkert Flow Sensors

In the event the flow/totalizer reading has to be displayed at a location located away from the sensor, Burkert has a selection of indicators/transmitters to suit different needs. Fittings for insertion flow sensor are available in various body material and connection.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Input signal</th>
<th>Output signal</th>
<th>Power supply</th>
</tr>
</thead>
</table>
| Type 8025 Panel | Panel-mounted Flow Indicator/Transmitter  
Digital display flow indicator with totalizer & output signal. For use with frequency signal from flow sensor (eg. 8020, 8030, 8030HT, 8031, 8040, 8041, 8070, 8071). | Sinusoidal or square wave (NPN) | 4..20 mA & NPN/PNP pulse with optional relay | 12 to 30 VDC |
| Type 8025 Wall   | Wall-mounted Flow Indicator/Transmitter  
Digital display flow indicator with totalizer & output signal. For use with frequency signal from flow sensor (eg. 8020, 8030, 8030HT, 8031, 8040, 8041, 8070, 8071). | Sinusoidal or square wave (NPN) | 4..20 mA & NPN/PNP pulse with optional relay | 12 to 30 VDC or 115 VAC/230 VAC |
| Type 8024 Panel | Panel-mounted Flow Indicator  
Analog display flow indicator. For use with frequency signal from flow sensor (eg. 8020, 8030, 8030HT, 8031, 8040, 8041, 8070). | Sinusoidal or square wave (NPN) | None | 12 to 30 VDC |
| Type 8024 Wall   | Wall-mounted Flow Indicator  
Analog display flow indicator. For use with frequency signal from flow sensor (eg. 8020, 8030, 8030HT, 8031, 8040, 8041, 8070). | Sinusoidal or square wave (NPN) | None | 2x 1.5 V battery |
| Type SE32 Wall   | Wall-mounted Flow Indicator/Switch  
Digital display flow indicator with output signal. For use with frequency signal from flow sensor (eg. 8020, 8030, 8030HT, 8031, 8040, 8041, 8070). | Square wave (NPN) | NPN/PNP or relay with optional 4..20 mA, ASI | 12 to 30 VDC |
| Type 8021       | Sensor-mounted Pulse Divider  
Calibrated pulse output unit. For use with frequency signal from flow sensor (eg. 8020, 8030, 8030HT, 8040, 8041, 8070). | Square wave (NPN) | NPN/PNP pulse | 12 to 30 VDC |
| Type 8023       | Sensor-mounted Flow Transmitter  
4..20 mA output unit. For use with frequency signal from flow sensor (eg. 8020, 8030, 8030HT, 8040, 8041, 8070). | Sinusoidal or square wave (NPN) | 4..20 mA | 12 to 30 VDC |
| Type 4002 Panel | Panel-mounted Flow Indicator/Totalizer  
Digital display flow indicator with totalizer & optional output signal. For use with frequency or analog signal from flow sensor (eg. 8020, 8030, 8030HT, 8040, 8041, 8070). | Square wave (NPN/PNP) or 4..20 mA/0-10 V | Optional 0/4..20 mA/0-10 V DC or open collector or relay | 85 to 230 VAC |

**Type S020** 
Insertion Fitting  
Fitting for installation of Burkert's insertion flow sensors (eg. 8020, 8040, 8041) & flow transmitters/meters (8024, 8025, 8045, 8045HT).  
Nominal diameter: DN15 to 400 mm (1/2" to 16")  
Fitting material: Stainless Steel 316L, brass, PVC, PP, PVDF or PE  
Process connection: Threaded, flanged, true union, weld ends, saddle or weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN).  
Pressure rating: PN10 (plastic), PN16 (metal)
Burkert batch controllers are designed for controlling very precise dosing & filling operations. They are available in various measuring principle for use with different medium.

**Type 8035 Batch**
In-line Paddle Wheel Batch Controller
Flow sensor with 4-vane PVDF paddle wheel pre-installed in fitting. Option with PP paddle wheel available.

| Medium | : Clean liquid with <1% solids, no fibrous or ferromagnetic material & viscosity <300 cSt. Non-pulsating flow. |
| Measuring range | 0.3 to 10 m/s (1 to 1,000 l/min) |
| Output signal | 2 x relays |
| Nominal diameter | DN8 to 50 mm (1/2" to 2") |
| Fitting material | Stainless Steel 316L, brass, PVC, PP or PVDF |
| Process connection | Threaded, flanged, true union or weld ends (BSP, NPT, PT, ASTM, JIS, DIN). |
| Pressure rating | PN16 metal, PN10 plastic |
| Temperature rating | Max. 100°C (depending on fitting material) |
| Power supply | 12 to 30 VDC or 115 VAC/230 VAC |

**Type 8025 Batch**
Insertion Paddle Wheel Batch Controller
Flow sensor with 4-vane PVDF paddle wheel. Requires Burkert insertion fitting.

| Medium | : Clean liquid with <1% solids, no fibrous or ferromagnetic material & viscosity <300 cSt. Non-pulsating flow. |
| Measuring range | 0.3 to 10 m/s (3 to 50,000 l/min) |
| Output signal | 2 x relays |
| Nominal diameter | DN15 to 400 mm (1/2" to 16") |
| Fitting material | Stainless Steel 316L, brass, PVC, PP, PVDF or PE |
| Process connection | Threaded, flanged, true union, weld ends, saddle or weld-o-let (BSP, NPT, PT, ASTM, JIS, DIN). |
| Pressure rating | PN10 |
| Temperature rating | Max. 100°C (depending on fitting material) |
| Power supply | 12-30 VDC or 115 VAC/230 VAC |

**Type 8075**
Oval Gear Positive Displacement Batch Controller
Volumetric flow sensor.

| Medium | : Clean liquid with max. 0.25 mm particles, no fibrous material & viscosity up to 1,000 cSt (up to 1,000,000 cSt on request). Non-pulsating & pulsating flow. |
| Measuring range | 1 to 350 l/min |
| Output signal | 2 x relays |
| Nominal diameter | DN15 to 50 mm (1/2" to 2") |
| Fitting material | Stainless Steel 316L, aluminum or PPS |
| Process connection | Threaded, flanged (BSP, NPT, ANSI, DIN). |
| Pressure rating | Max. 120°C SS, 80°C Al & PPS |
| Temperature rating | 12 to 30 VDC or 115 VAC/230 VAC |

**Type 8055**
Full-bore Magnetic Inductive Batch Controller
Flow sensor without moving parts. Movement of conductive medium in magnetic field generated by sensor produces voltage proportional to flow.

| Medium | : Clean to contaminated liquid with conductivity >5 µS/cm & viscosity <5000 cSt. Non-pulsating flow. |
| Measuring range | 0.1 to 10 m/s (1 to 47,600 l/min; up to 1,883,300 l/min on request) |
| Output signal | 2x open collector (relays on request) |
| Nominal diameter | DN5 to DN100 mm (up to DN2000 mm on request) |
| Fitting material | Stainless Steel 316L (sanitary version available), carbon steel |
| Lining material | PP, PTFE (others on request) |
| Process connection | Flanged, wafer, Tri-clamp & other sanitary connections (ASTM, JIS, DIN, etc...). |
| Pressure rating | PN16 |
| Temperature rating | Up to 150°C (depending on lining material) |
| Power supply | 90 to 265 VAC (DC voltage and others on request) |

**Type 8025 Batch - Panel/Wall**
Remote-mounted Batch Controller
Digital display with totalizer. For use with frequency output flow sensors.

| Input signal | Sinusoidal or square wave (NPN) |
| Output signal | 2 x relays |
| Power supply | 12 to 30 VDC or 115 VAC/230 VAC |

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**Range of Batch Controllers For Liquids, Remote or Local Version - Paddle Wheel, Oval Gear Positive Displacement, Magnetic Inductive Principle**
Burkert level transmitters are available in various measuring principles and configurations for different applications. Level transmitters are used to continuously measure and communicate distance/level/volume value to remote devices such as PLC, chart recorder, SCADA, etc.

**Type 8175**
Ultrasonic Level Transmitter
Non-contact level transmitter with built-in display. Sensor emits an ultrasonic wave to be reflected by medium surface. Time required for signal to return is used to determine distance/level/volume measured. Not suitable for measuring environment with ammonia & carbon dioxide gas.

- Measuring range: 0.3 to 10 m
- Output signal: 4..20 mA with optional relay
- Wetted material: None
- Process connection: G 2” (NPT on request)
- Pressure rating: max. 2 bar at 25°C
- Medium temperature: -40 to 80°C
- Power supply: 18 to 32 VDC or 115/230 VAC
- Accuracy: ≤ 0.15 % FS

**Type 8170/8175**
Ultrasonic Level Transmitter
Non-contact level transmitter with remote-mounted display (wall or panel mounted). Sensor emits an ultrasonic wave to be reflected by medium surface. Time required for signal to return is used to determine distance/level/volume measured. Not suitable for measuring environment with ammonia & carbon dioxide gas.

- Measuring range: 0.3 to 7 m
- Output signal: 4..20 mA with optional relay
- Wetted material: None
- Process connection: G 2” (NPT on request)
- Pressure rating: max. 2 bar at 25°C
- Medium temperature: -40 to 80°C
- Power supply: 18 to 32 VDC or 115/230 VAC
- Accuracy: ≤ 0.15 % FS

**Type 8326**
Level/Pressure Transmitter
Pressure transmitter with high accuracy thin-film strain gauge or piezoresistive sensor. Optional display available. Sensor measures hydrostatic pressure created by height of water column.

- Measuring range: 0-0.4 to 0-40 bar
- Output signal: 4..20 mA
- Wetted material: Stainless steel 316, FPM/EPDM
- Process connection: G 1/2” (NPT on request) standard; G 1/2” & 1” flush diaphragm; EHEDG version
- Medium temperature: -30 to 105°C
- Power supply: 12 to 36 VDC
- Accuracy: ≤ 0.15 % FS

**Type 8323**
Level/Pressure Transmitter
Pressure transmitter with high accuracy thin-film strain gauge or piezoresistive sensor. Sensor measures hydrostatic pressure created by height of water column.

- Measuring range: 0-0.1 to 0-25 bar
- Output signal: 4..20 mA
- Wetted material: Stainless steel 316, FPM
- Process connection: G 1/2” (NPT on request) standard; G 1/2” & 1” flush diaphragm; EHEDG version
- Medium temperature: -30 to 150°C (depending on version)
- Power supply: 10 to 30 VDC
- Accuracy: ≤ 0.25 % FS

**Open Channel Flow Transmitter/Totalizer**
Digital display level transmitter Type 8175 is utilized to measure level of medium behind restriction and convert data to flow rate. If totalized volume or remote display is required, 4..20 mA signal from Type 8175 can be used to transmit data to optional indicator/totalizer Type 4002.

- Flow range: Depends on channel depth and weir/ flume design
- Output signal: 4..20 mA (standard for 8175), Optional 0/4...20 mA/0...10 VDC or open collector or relay (for 4002)
- Communications: Optional RS485/RS232 or DEVICE NET or MODBUS or PROFIBUS-DP (with 4002)
- Operating voltage: 12 to 30 VDC, 115/230 VAC

Range of Level Transmitters
Burkert level switches are available in various measuring principles and configuration for different applications.

**Type 8181**
Horizontal/Vertical Buoyancy Level Switch
Level detection for clean liquid. Movement of float by medium brings magnet in float close to magnetic switch in body resulting in switch changing state.

- Medium: Clean & aggressive liquid compatible with wetted materials, density > 0.7 g/cm³.
- Output signal: Relay with AsI as option
- Wetted material: Stainless steel 304 or PP
- Process connection: G 3/4” (NPT on request)
- Pressure rating: Max. 10 bar
- Temperature range: -40 to +120°C
- Power supply: 12 to 36 VDC
- Type of protection: IP65

**Type 8110**
Tuning Fork Level Switch
Level detection for difficult liquid. Tuning fork vibrates at 400 Hz. When switch is immersed in medium, frequency changes and switch changes state.

- Medium: Clean, aggressive & contaminated liquid compatible with wetted material. Light to medium coating liquid. No minimum liquid density.
- Output signal: FET (NPN/PNP) or relay
- Wetted material: PP/Ryton
- Process connection: G 3/4” (NPT on request)
- Pressure rating: Max. 10 bar
- Temperature range: 40 to +90°C
- Power supply: 12 to 36 VDC
- Type of protection: IP68

**Type SL25**
Vertical Buoyancy Level Switch
Level detection for clean liquid. Movement of float by medium brings magnet in float close to magnetic switch in body resulting in switch changing state. Incorporated baffle body eliminates switch chatter.

- Medium: Clean & aggressive fluid compatible with wetted materials, density > 0.8 g/cm³.
- Output signal: FET (NPN/PNP) or relay
- Wetted material: PP & EPDM or FPM gasket
- Process connection: G 3/4” (NPT on request)
- Pressure rating: Max. 1 bar
- Temperature range: Max. +90°C
- Power supply: 12 to 36 VDC (FET version)
- Type of protection: IP67

**Type SL31**
Rail-mount Level Controller
DIN rail mounted level controller for up to 3 switch inputs with up to 2 relay outputs for controlling pumps/valves/alarms/automatic filling or emptying application. With DC power supply for level switches.

- Operating voltage: 115/230 VAC
- Relay type: SPDT 380 VAC/150 VDC (max. 12 A non-inductive)
- Relay mode: Selectable normally open or normally closed
- Relay time delay: Adjustable (0.15 to 60 seconds)
- Latching: Selectable On/Off
- Operating temp: Max. 70°C
- DC supply voltage: 13.5 V

**Type SL40**
Adjustable In-Tank Fitting for Level Switches
Holders for up to 4 level switches with individually adjustable switch depth. Switch depth can be easily changed by loosening a screw.

- Fitting length: Up to 3 m
- Body material: PP (20% glass filled) with Viton o-ring
- Connection: G 2" (NPT on request) for mounting, 3/4" BSP (NPT on request) for switch holder
- Pressure rating: Atmospheric
- Temperature range: Max. 90°C
Range of Pressure Transmitters, Switches and Chemical Seals - Ceramic cell, Thin-film strain gauge or Piezoresistive Measuring Principles

Burkert pressure transmitters/switch are available in various measuring technologies and process connections for use in different applications ranging from high-purity to highly contaminated media including aggressive media. Chemical seals available for more difficult applications.

**Type 8314**
Pressure Transmitter
Pressure transmitter with ceramic measuring cell.

- **Medium**: Clean & aggressive fluid compatible with wetted materials.
- **Measuring range**: 0-1 to 0-100 bar
- **Output signal**: 4..20 mA
- **Wetted material**: Stainless steel 303 (1.4305), FPM, ceramic
- **Process connection**: G 1/4" (NPT on request) standard
- **Medium temperature**: -15 to 125°C
- **Power supply**: 8 to 33 VDC
- **Accuracy**: ≤ 0.3 % FS

**Type 8311**
Pressure Switch / Indicator / Transmitter
Pressure switch with ceramic measuring cell. With LCD display and transistor or relay output. Optional analog output available.

- **Medium**: Clean, aggressive & contaminated fluid compatible with wetted materials.
- **Measuring range**: 0-0.1 to 0-16 bar
- **Output signal**: 4..20 mA
- **Wetted material**: Stainless steel 316, FPM, ceramic
- **Process connection**: G 1/4" (NPT on request) standard
- **Medium temperature**: -20 to 100°C
- **Power supply**: 12 to 36 VDC
- **Accuracy**: ≤ 1.5 % FS

**Type 8327**
Pressure Transmitter
Pressure transmitter with high accuracy thin-film strain gauge or piezoresistive sensor for use in hazardous environment (gases & vapour zones 0, 1 & 2; dust zones 20, 21 & 22; mining categories M1 & M2).

- **Medium**: Clean, aggressive & contaminated fluid compatible with wetted materials.
- **Measuring range**: 0-0.1 to 0-16 bar
- **Output signal**: 4..20 mA
- **Wetted material**: Stainless steel 316
- **Process connection**: G 1/2" (NPT on request) standard; G 1/2" & 1" flush diaphragm; EHEDG version
- **Medium temperature**: -30 to 100°C
- **Power supply**: 10 to 30 VDC
- **Accuracy**: ≤ 0.25 % FS
- **Certification**: Ex ia I/II C T6 (DMT 00 ATEX E 045 X)

**Type 8323**
Pressure Transmitter
Pressure transmitter with high accuracy thin-film strain gauge or piezoresistive sensor.

- **Medium**: Clean, aggressive & contaminated fluid compatible with wetted materials.
- **Measuring range**: 0-0.1 to 0-25 bar
- **Output signal**: 4..20 mA
- **Wetted material**: Stainless steel 316, FPM
- **Process connection**: G 1/2" (NPT on request) standard; G 1/2" & 1" flush diaphragm; EHEDG version
- **Medium temperature**: -30 to 150°C (depending on version)
- **Power supply**: 10 to 30 VDC
- **Accuracy**: ≤ 0.25 % FS

**Type 8326**
Pressure Transmitter
Pressure transmitter with high accuracy thin-film strain gauge or piezoresistive sensor with or without display.

- **Medium**: Clean, aggressive & contaminated fluid compatible with wetted materials.
- **Measuring range**: 0-0.4 to 0-40 bar
- **Turn Down**: 1:20
- **Output signal**: 4..20 mA
- **Wetted material**: Stainless steel 316, FPM/EPDM
- **Process connection**: G 1/2" (NPT on request) standard; G 1/2" & 1" flush diaphragm; EHEDG version
- **Medium temperature**: -30 to 105°C
- **Power supply**: 12 to 36 VDC
- **Accuracy**: ≤ 0.15 % FS

**Type 8391**
Chemical Seal
Chemical seal separates the pressure sensor from the medium to be measured while allowing pressure variations to be precisely transmitted. Various styles available in different materials to enable use of pressure switch & transmitters in even the most adverse applications.
Range of Temperature Sensors, Transmitters, Switches and Controllers - For Monitoring, Controlling or On/Off Control Loop Application

Burkert temperature sensor/transmitter/switch utilize PT100 sensing elements with various process connections for use in different applications.

**Type ST20/ST21**
Temperature Sensor/Transmitter

- Temperature sensor with PT100 sensor element (2 or 3 wire). Also available with 4..20 mA output. Version with 2 PT100 elements available on request.

<table>
<thead>
<tr>
<th>Medium</th>
<th>Clean, aggressive &amp; contaminated fluid compatible with wetted materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>-50 to +500°C</td>
</tr>
<tr>
<td>Probe length</td>
<td>Up to 535 mm</td>
</tr>
<tr>
<td>Output signal</td>
<td>PT100 or 4..20 mA</td>
</tr>
<tr>
<td>Wetted material</td>
<td>Stainless steel 316 (others on request)</td>
</tr>
<tr>
<td>Process connection</td>
<td>G 1/2&quot; (NPT, flanged, tri-clamp, others on request)</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>PN16</td>
</tr>
<tr>
<td>Power supply</td>
<td>12 to 36 VDC (4..20 mA output version)</td>
</tr>
</tbody>
</table>

**Type 8400**
Temperature Switch / Indicator / Transmitter

- Temperature switch with PT100 sensor element. With LCD display and transistor or relay output. Optional analog output available.

<table>
<thead>
<tr>
<th>Medium</th>
<th>Clean, aggressive &amp; contaminated fluid compatible with wetted materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>-40 up to +125°C</td>
</tr>
<tr>
<td>Probe length</td>
<td>30, 100, 200 mm (other length available on request)</td>
</tr>
<tr>
<td>Output signal</td>
<td>Transistor (NPN/PNP) or relay with optional 4..20 mA &amp; ASi</td>
</tr>
<tr>
<td>Input signal</td>
<td>4..20 mA (external set point)</td>
</tr>
<tr>
<td>Wetted material</td>
<td>Stainless steel 316</td>
</tr>
<tr>
<td>Process connection</td>
<td>G 1/2&quot; (NPT &amp; PT on request)</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>PN16</td>
</tr>
<tr>
<td>Power supply</td>
<td>12 to 30 VDC</td>
</tr>
</tbody>
</table>

**Type 8400 Wall Mount**
Temperature Switch / Indicator / Transmitter

- With LCD display and transistor or relay output. Optional analog output available.

| Measuring range             | -40 up to +125°C                                                       |
| Output signal               | Transistor (NPN/PNP) or relay with optional 4..20 mA & ASi             |
| Process Input signal        | from PT100                                                              |
| Input signal                | 4..20 mA (external set point)                                          |
| Power supply                | 12 to 30 VDC                                                           |

**Type 0911**
Panel Mount Temperature Digital Controller, 2-point, 3 point or PID-operation for All Standard Temperature Sensors

- Display: 3 or 31/2 digit version available
- Sensor inputs: PTC, NTC, PT100, Thermocouple, 0...1V, 0...10V or 4...20 mA
- Measuring range: -100 up to +1,400°C (depending on type of sensor input)
- Relay outputs: Resistive load 8A, Inductive load 3A
- 2 point controller: up to 2 changeover
- 3 point controller: 2 N/O & 1 N/C contact
- PID controller: 2 N/O & 1 N/C contact
- Ambient temperature: 0 to +50°C
- Protection class: IP65 (panel front)
- Power supply: 12 to 24V AC/DC; 230V AC

Range of Temperature Sensors, Transmitters & Switches
Range of Analytical Sensors, Transmitters & Controllers
- pH, ORP and Chlorine measurement and control

Burkert offers a series of analysis sensors & instruments for measuring and controlling pH, ORP, conductivity and free chlorine.

**Type 8205**
Digital pH Transmitter
Measuring & controlling of pH of liquid. Available as compact unit (with integrated pH sensor & temperature sensor) or separate version (wall or panel-mounted, to use with Type 8200 sensor)

- Measuring range: 0-14 pH
- Temperature compensation: Automatic (with PT1000 connected)
- Output signal: 4..20 mA (pH or temperature), optional relay
- Power supply: 12 to 30 VDC, 115/230 VAC
- Temperature sensor: PT1000 SS 316Ti (compact version only)
- Process connection: Use Burkert Type S020 fitting or submersion kit (compact version only)
- Type of protection: IP65

**Type 8200**
P pH Sensor
Measuring of pH of liquid. For submersion and in-line use.

- Measuring range: 0-14 pH
- Medium temperature: Up to 130°C
- Pressure rating: Up to 6 bar
- Body material: Glass
- Process connection: Use with Burkert Type S020 fitting; 1” (BSP/NPT/PT) or other connection on request; Special submersion kit available on request
- Probe (electrode) type: Various Combination probe, with various design for different applications.
- Type of protection: IP65

**Type 8205**
Digital pH Controller
With built-in P.I.D. controller for more accurate controlling of pH of liquid. Available as compact unit (with integrated pH sensor & temperature sensor) or separate version (wall or panel-mounted, to use with Type 8200 sensor)

- Measuring range: 0-14 pH
- Temperature compensation: Automatic (with PT1000 connected)
- Output signal: 4..20 mA (pH or temperature), pulse (relay/transistor/Triac), alarm relay
- Power supply: 12 to 30 VDC, 115/230 VAC
- Temperature sensor: PT1000 SS 316Ti (compact version only)
- Process connection: Use Burkert Type S020 fitting or submersion kit (compact version only)
- Type of protection: IP65

**Type 8206**
Digital ORP Transmitter
Measuring & controlling of ORP of liquid. Compact unit with integrated ORP sensor, to use with Type S020 sensor.

- Measuring range: -2000 to +2000 mV
- Output signal: 4..20 mA, optional relay
- Power supply: 12 to 30 VDC
- Medium temperature: Up to 130°C
- Pressure rating: Up to 6 bar
- Process connection: Use Burkert Type S020 fitting (compact version only)
- Type of protection: IP65

**Type 8236**
Chlorine Sensor & Controller
Solid-state amperometric chlorine sensor for accurate & maintenance-free measurement of free chlorine. For more accurate measurement & control, the panel-mounted controller can be linked with Type 8205 for pH compensation. Sensor can also be used to measure bromine & iodine. Complete by-pass system solution consisting of valves, strainer, flow indicator/switch, chlorine sensor/controller, pH sensor/ transmitter from one source.

- Measuring range: 0.01 to 10 mg/l free chlorine
- Medium temperature: +5 to +40°C
- Pressure rating: Max. 1 bar
- Flow range: 15 to 50 l/h
- Output signal: 0/4..20 mA, 0-10 V (process value, control output), relay (alarm, limit value)
- Power supply: 24 VDC, 115/230 VAC
Range of Analytical Sensors, Transmitters & Controllers
- Conductivity measurement and control

Burkert offers a series of analysis sensors & instruments for measuring and controlling pH, ORP, conductivity and free chlorine.

**Type 8220**
Conductivity/Resistivity Sensor
Measuring of conductivity/resistivity of liquid using conductive measuring principle. For in-tank and in-line use.

- Measuring range: 0.05 µS/cm to 200 mS/cm (depending on cell constant), also 0.05-20 MΩ/cm
- Medium temperature: 0 to 120°C
- Pressure rating: PN6
- Wetted material: PVDF & SS316 or PVDF, SS316 & graphite
- Process connection: For Burkert Type S020 fitting
- Temperature compensation: Built-in
- Type of protection: IP65

**Type 8223**
Inductive Conductivity/Resistivity Sensor
Measuring of conductivity/resistivity of liquid using inductive measuring principle. Suitable for aggressive, contaminated and coating media. For in-tank and in-line use. With 4..20mA output.

- Measuring range: 10 µS/cm to 1 S/cm
- Medium temperature: -10 to +80°C
- Pressure rating: PN6
- Wetted material: PVDF or PEEK body with FPM or EPDM O-ring
- Power supply: 12 to 30 VDC
- Process connection: For Burkert Type S020 fitting
- Temperature compensation: Built-in
- Type of protection: IP65

**Type 8225**
Digital Conductivity/Resistivity Transmitter
Digital display conductivity/resistivity meter with 4..20mA output as standard. Available as compact unit (with integrated sensor, conductive measuring principle) or separate version (wall or panel-mounted, to use with Type 8220 sensor).

- Measuring range: 0.05 µS/cm to 200 mS/cm (depending on cell constant), also 0.05-20 MΩ/cm
- Medium temperature: 0 to 120°C
- Pressure rating: PN6
- Wetted material: PVDF & SS316 or PVDF, SS316 & graphite
- Temperature compensation: Built-in
- Output signal: 4..20 mA (conductivity/resistivity or temperature), optional relay
- Power supply: 12 to 30 VDC, 115/230 VAC
- Process connection: Use Burkert Type S020 fitting (compact version only)
- Type of protection: IP65

**Type 8226**
Digital Inductive Conductivity Transmitter
Digital display conductivity meter using inductive measuring principle with 4..20mA output as standard. Suitable for aggressive, contaminated and coating media. For in-tank and in-line use. Available as compact unit only (with integrated sensor).

- Measuring range: 100 µS/cm to 2 S/cm
- Medium temperature: 0 to 120°C
- Pressure rating: PN6
- Wetted material: PVDF or PEEK body with FPM or EPDM O-ring
- Temperature compensation: Built-in
- Output signal: 4..20 mA (conductivity or temperature), optional relay
- Power supply: 12 to 30 VDC, 115/230 VAC
- Process connection: Use Burkert Type S020 fitting (compact version only)
- Type of protection: IP65

Selection of conductivity electrodes
When it comes to safety, the world can be very small (-minded). It is crucial to comply with the approvals required on all important markets. Bürkert, compliance with standards is standard. Not only our products, but also our production and the entire company (DIN ISO 9001) comply with the required criteria in order to successfully be able to deploy Bürkert technology worldwide. We were the first valve manufacturer outside the USA to be awarded the CSA Category Certification. It allows us to conduct all required measurements ourselves and, if necessary, to grant the required approval to our customers. This is but one example of many showing why you are on the safe side with Bürkert in regards to approvals as well. And you will also be on the cost-saving side because safety is a matter of assurance.

Range of Timers

Approvals

National and international approval
When it comes to safety, the world can be very small (-minded). It is crucial to comply with the approvals required on all important markets. For Bürkert, compliance with standards is standard. Not only our products, but also our production and the entire company (DIN ISO 9001) comply with the required criteria in order to successfully be able to deploy Bürkert technology worldwide. We were the first valve manufacturer outside the USA to be awarded the CSA Category Certification. It allows us to conduct all required measurements ourselves and, if necessary, to grant the required approval to our customers. This is but one example of many showing why you are on the safe side with Bürkert in regards to approvals as well. And you will also be on the cost-saving side because safety is a matter of assurance.
System Solutions: Flow Control

Burkert offers more than just high quality products/components to your requirements. Whenever you require systematic “all-in solutions”, we are able to offer system package comprising innovative technology and individual services that ensure your success. From consultancy, commissioning, up to training and servicing, Burkert offers Total Fluid Systems Solution.

Application: Flow - Mixing by ratio control on an Paste Production System

Task
Three components – two fluids and one powder – are required for manufacturing a paste. The flow rate of the two fluids must be controlled in a specific ratio. The powder is added in proportion to the flow rate.

Solution
The quantity of fluid 1 is detected by means of a flow-rate measuring instrument and controlled continuously by a globe control valve. The lower quantity of fluid 2 is also measured and controlled by a second globe control valve in a given ratio with respect to the flow rate of fluid 1. Fluids and powder are mixed in a mixing vat. The quantity of the paste pumped from the mixing vat is detected with a magnetic inductive flow meter and controlled by a general-purpose controller with a stainless steel diaphragm valve. The set-point values of the closed-loop flow-rate control system for fluid 1, the feed velocity of the powder, the speed of rotation of the agitator and the paste dose are output via an electric/pneumatic automation system.

The set-point value of the closed-loop flow-rate control system for fluid 2 is generated directly in the positioner of the control valve as a function of the flow rate of fluid 1. The flow rate of fluid 2 is controlled in the required ratio via the process controller integrated in the positioner. In addition, pneumatically operated on/off valves controlled directly by the automation system are fitted in all of the system’s delivery lines.

Application: Flow - Mixing by Batch control on an industrial automatic wash system

Task
An industrial automatic wash system must be filled with a preset quantity of wash water. In addition to the wash water, it is necessary to provide rinse water at a constant volume flow.

Solution
The washing drum of an industrial automatic wash system is embedded in several washing chambers and transports the linen to be washed from chamber to chamber by rotation.

A preset wash water stream is added to the first chamber via an angle seat valve. The wash water is supplied from a supply tank whose fluid level is monitored by means of an ultrasonic level transmitter. The quantity of water flowing is detected by means of a magnetic inductive flow transmitter.

Rinse water is added in reverse flow to the direction of the wash water via the last chambers. A partial stream is supplied uncontrolled via a globe valve. The second partial stream of rinse water is controlled via a globe control valve so that the total stream pumped from a supply tank and required by the wash process is achieved. The controlled partial stream and total stream of water are measured via magnetic inductive flow transmitters. The overflowing water from an overflow tank is admixed to the rinse water via a globe valve, thus achieving a closed rinse circuit.
System Solutions: Level Control

Burkert offers more than just high quality products/components to your requirements. Whenever you require systematic “all-in solutions”, we are able to offer system package comprising innovative technology and individual services that ensure your success. From consultancy, commissioning, up to training and servicing, Burkert offers Total Fluid Systems Solution.

Application: Distribution of a fluid over several tanks by level control

Task
The fluid level in several supply tanks is to be constantly maintained within a certain range. The tanks are fed from a feed tank that is continuously kept at a constant level.

Solution
The supply tanks each feature two level switches, one for minimum filling level and one for maximum filling level. The undershoot of the minimum filling level is signaled to the master control system via the AirLINE electrical/pneumatic automation system. The diaphragm valve for filling the tank then opens. The valve is closed again when the maximum filling level is reached (upper level switch).

Application: Mixing different fluids in a given ratio by level control

Task
Several fluids are to be mixed in a predetermined ratio in an mixing tank. Containers are filled with the product after thorough mixing.

Solution
The first component is added to the empty mixing tank via a solenoid valve until the required quantity is reached. The volume is determined by the level sensor on the basis of the filling height and tank geometry. The controller closes the solenoid valve when the required quantity is reached and opens the valve for the second component, etc. After adding the last component, the components are thoroughly mixed by an agitator to provide a homogenous product, which is then filled into containers or further processed. During the filling process, the product is added to a container until a load cell determines that the required filling quantity has been reached.
System Solutions: Temperature Control

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Application: Mold cooling by solenoid - operated proportional valves with PI Controllers

**Task**
Injection molds for plastics processing must be heated before injection molding. The molds must be cooled after molding to facilitate hardening and part ejection.

**Solution**
The temperatures of the each of the two halves of the injection mold are controlled independently. The molds are heated electrically by means of cartridge heaters incorporated in the mold. Cooling water is pumped through the two mold halves in order to cool the molds. The temperatures are measured with resistance thermometers. These actual temperature values are supplied to the temperature controllers, which, depending on the pre-settings, activate either the solenoid-operated control or proportional valves incorporated in the cooling water circuits.

The controllers are mounted directly on the proportional valves. The set-point presetting is performed locally using the buttons of the controllers, or the set-point value is preset externally via a standard signal.

Application: Tempering water in a steam heated heat exchanger

**Task**
A reaction or agitator vessel must be filled with a specific, adjustable quantity of water. The flowing water must be controlled at a preset temperature.

**Solution**
The flowing water is tempered by means of a steam-heated heat exchanger. The temperature of the water is measured with a resistance thermometer at the outlet of the heat exchanger. The quantity of steam for heating the heat exchanger is set via a globe control valve. A positioner with an integrated process controller, which assumes the task of closed-loop temperature control, is attached to the control valve.

The required water volume is dispensed by means of a flow sensor with an integrated dosing control system.

The temperature control system and the dosing control system are activated at the start of a filling operation. The dosing control opens a pneumatically operated diaphragm valve. When the required water quantity is reached, the valve is closed again and the temperature control system is deactivated.
### Useful Information

**Characteristics and possible applications of various solenoid actuators for solenoid valves**

<table>
<thead>
<tr>
<th></th>
<th>Plunger</th>
<th>Pivoted armature</th>
<th>Rocker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media separation in actuator</td>
<td>No</td>
<td>Standard with media separation.</td>
<td>Available with and without media separation.</td>
</tr>
<tr>
<td>Water behaviour/service life</td>
<td>Moderate to high wear susceptibility of the solenoid core due to the friction in the core guide tube, depending on field of application.</td>
<td>Low wear since there is no sliding friction in the armature.</td>
<td>Very low wear and long service life (special version without isolating diaphragm).</td>
</tr>
<tr>
<td>Universality and possible applications</td>
<td>Very robust solenoid coils available in various sizes and with various power ratings. Can be used for AC/DC/UC.</td>
<td>Very tried and tested actuation principle. Only one coil size available. Can be used for AC/DC/UC.</td>
<td>Small, compact actuation system, particularly as pilot valve or for low flow rates. Can be used only for DC, or also for UC with series-connected rectifier.</td>
</tr>
<tr>
<td>Typical media</td>
<td>Neutral gaseous and fluid, non-abrasive media, e.g. - Water (demineralized water, only conditional) - Air - Oils - Industrial gases</td>
<td>Neutral gaseous and fluid, media, conditionally also aggressive and abrasive, depending on use/availability and resistance of the isolating diaphragm material, e.g. - Water (including demineralized water) - Oils, Acids and lyes - Ultrapure media</td>
<td>Without media separation: neutral gases, e.g. air With media separation: also aggressive gases and fluids of low viscosity</td>
</tr>
</tbody>
</table>

### Pressure

<table>
<thead>
<tr>
<th>Pa</th>
<th>mWC</th>
<th>Tor</th>
<th>Inch H20</th>
<th>psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bar</td>
<td>100000</td>
<td>10.20</td>
<td>750</td>
<td>401.6</td>
</tr>
</tbody>
</table>

- 1 cubic inch = 16.387 cm³
- 1 gallon (GBR) [gal] = 4.54609 l
- 1 cubic foot = 28.317 dm³
- 1 gallon (USA) [gal] = 3.78543 dm³
- 1 cubic yard = 0.76455 m³

### Lengths

- 1 inch [in] = 2.54 cm = 0.0254 m
- 1 foot [ft] = 30.48 cm = 0.3048 m
- 1 yard (yd) = 0.9144 m

### Meaning of the type of protection (IP code)

<table>
<thead>
<tr>
<th>Digit</th>
<th>1st digit - Protection against ingress of foreign bodies</th>
<th>2nd digit - Protection against ingress of water</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No protection</td>
<td>No protection</td>
</tr>
<tr>
<td>1</td>
<td>Foreign bodies &gt; 50 mm</td>
<td>Water incident, perpendicular</td>
</tr>
<tr>
<td>2</td>
<td>Foreign bodies &gt; 12 mm</td>
<td>Water incident at an angle (75°-90°)</td>
</tr>
<tr>
<td>3</td>
<td>Foreign bodies &gt; 25 mm</td>
<td>Spray water</td>
</tr>
<tr>
<td>4</td>
<td>Foreign bodies &gt; 1.0 mm</td>
<td>Splash water</td>
</tr>
<tr>
<td>5</td>
<td>Dust-protected</td>
<td>Jet-proof</td>
</tr>
<tr>
<td>6</td>
<td>Dust-tight</td>
<td>Heavy seas</td>
</tr>
<tr>
<td>7</td>
<td>Immersion</td>
<td></td>
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<td>8</td>
<td>Submersion</td>
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### Flow rate

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<tr>
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<th>sccm</th>
<th>slpm</th>
<th>scfm</th>
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<tbody>
<tr>
<td>1 l/min</td>
<td>1073.22</td>
<td>1.073</td>
<td>0.39</td>
</tr>
<tr>
<td>1 m³/h</td>
<td>63.4</td>
<td>0.063</td>
<td>0.022</td>
</tr>
</tbody>
</table>

- sccm: standard cubic centimeter per minute
- slpm: standard liter per minute
- scfm: standard cubic foot per minute

### Standard for solvent joint for Burkert range of plastic valves and fittings

<table>
<thead>
<tr>
<th></th>
<th>ISO R161</th>
<th>BS 3505-6</th>
<th>ASTM D1784</th>
<th>JIS 6741</th>
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<td>Min OD</td>
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<tr>
<td>in</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
</tr>
<tr>
<td>3/8</td>
<td>16</td>
<td>18</td>
<td>17</td>
<td>17.3</td>
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### Standard for Butt Weld for Burkert range of stainless steel valves & fittings

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<tr>
<th>ISO-4127</th>
<th>DIN 11851</th>
<th>DIN 11852</th>
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- Ød = 157.5 mm

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Information
Information for Selection and Installation of Paddle Wheel Flow Devices

Various aspects for ensuring troublefree operation must be noted when designing a flow measuring system.

**Flow/flow velocity/nominal diameter diagrams**
Flow rates stipulated as a function of the nominal diameter are possible depending on the measuring method and device type. The higher the flow velocity, the lower the measurement error, but the higher the pressure loss. Pipes for fluids similar to water are generally designed for an average flow velocity of approx. 2 to 3 m/s.

**Example of nominal diameter selection**
Given:
Flow rate 10 m³/h at 2 to 3 m/s.
Solution:
The intersection of the flow rate and velocity of pipe flow results in the nominal diameter DN 40.

**Measurement error diagram**

![Diagram for nominal diameter selection](image)

**Inlet/outlet sections**
Inlet and outlet sections should be complied with in order to obtain as uniform a flow profile as possible at the flow measuring point. If installation conditions do not allow compliance, many Bürkert flow measuring instruments allow correction of the measured value via teach-in calibration.

**Installation information**
Basically, when installing flow measuring instruments for fluids, it is always necessary to ensure that there are no gas bubbles and that no particles can be deposited at the measuring point, as this would falsify the measurement. Special, type-specific information is included in the corresponding operating instructions.
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