Opto-electronic level sensors for horizontal and vertical installation

Senlux' Besta
The optoelectronic Senlux Besta level switches are used for the level control of liquids. They may be installed either vertically or horizontally.

**Operating Principle**

The optoelectronic sensor contains an infrared LED and a light receiver. Light from the LED is directed into a prism which forms the tip of the sensor. With no liquid present, light from the LED is reflected within the prism to the receiver.

When rising liquid immerses the prism, the light is refracted out into the liquid, leaving little or no light reach the receiver. Sensing this change, the receiver actuates electronic switching within the unit to operate an external alarm or control circuit.

### Technical Data

- **Operating pressure**: max. 10 bar
- **Ambient temperature**: -25 to 70°C
- **Liquid temperature**: -30 to 100°C; max. +150°C 15 during max. minutes
- **Measuring accuracy**: ± 0.5 mm
- **Material housing**: stainless steel 1.4305
- **Material prism**: quartz glass
- **min. distance sensor tip to reflecting wall**: > 10 mm
- **Mounting direction**: any
- **Process connections**: G 3/8", M12x1 mm other types on request

### Electrical Data

- **Supply voltage**: 12...32 VDC
- **Supply current max.**: 40 mA
- **Switch point number**: 1
- **Output**: PNP Transistor, reverse polarity protected close or open
- **Protection**: IP65
- **Indication of active output**: 1 LED cable PVC, PUR 3 x 0.25 mm² or plug M8, other types on request

### Connection diagram

<table>
<thead>
<tr>
<th>Pin assignment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply voltage +12...32 VDC</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Output +12...32 VDC</td>
</tr>
<tr>
<td>Brown</td>
<td>Supply voltage +12...32 VDC</td>
</tr>
<tr>
<td>White</td>
<td>0</td>
</tr>
<tr>
<td>Green</td>
<td>Output +12...32 VDC</td>
</tr>
</tbody>
</table>
Product overview / order table

**OPG01 Process connection**

- **A** Connection thread BSPP3/8"
- **B** Connection thread M12 x 1 mm
- **X** Other types on request

**Electrical connection**

- **2P** Connection cable: 2 m PVC 3 x 0.25 mm², Standard
- **2U** Connection cable: 2 m PUR 3 x 0.25 mm², Standard

- Other cable length: dimensions in m

**M8** Plug M8

**X** Other types on request

**Switch function**

- **S** Closer (in medium closed, 12 - 32 VDC)
- **O** Opener (in medium open, 0 VDC)

**Sensitivity**

- **A** Sensitivity not adjustable (please specify the medium)
- **T** Sensitivity adjustable (with potentiometer)

**Example:** Process connection BSPP3/8", 2 m PVC cable, closer, sensitivity not adjustable, medium water: OPG01-A2PSA

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**Characteristics**

- Compact construction
- No moving parts
- Excellent price / performance ratio
- Easy to install
- Mounting direction: any
- High reliability
- Long service life
- Measuring accuracy ± 0.5 mm
- Electrical connection: cable connection or plug
- Optical switch condition check via the LED
- Output PNP
- Close or Open
- Adjustable sensitivity for any application

**Areas of application**

- Plant construction
- Machine tools
- Chemicals and Pharmaceutics
- Hydraulics
- Machine construction
- Water treatment etc.

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**Accessories: Circular plugs M8**

<table>
<thead>
<tr>
<th>Type</th>
<th>Order number</th>
<th>Design</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female plug M8 with 2 m PVC cable</td>
<td>K8PVC 2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>K8PVC 5</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>K8PUR 2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>K8PUR 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M8, angle type with 2 m PVC cable</td>
<td>W8PVC 2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>W8PVC 5</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>W8PUR 2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>W8PUR 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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With reservation of the technical modifications

LSD01E/11.01

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Printed in Switzerland
The optoelectronic Senlux Besta level switches are used for the level control of liquids. They may be installed either vertically or horizontally.

**Base model OPG02**
Product overview shown below

**Technical Data**
- Operating pressure: max. 25 bar
- Ambient temperature: -25 to 70°C
- Liquid temperature: -30 to 100°C; temporary up to max. 150°C
- Measuring accuracy: ± 0.5 mm
- Material housing: stainless steel 1.4571
- Material prism: quartz glass
- min. distance sensor tip to reflecting wall: > 10 mm
- Mounting direction: any
- Process connections: BSPP 1/2", other types on request
- Sensor length L: min. 65 mm, max. 3000 mm

**Electrical Data**
- Supply voltage: 12...32 VDC
- Supply current max.: 40 mA
- Switch point number: 1
- Output: PNP Transistor, reverse polarity protected
- Switch function: close or open
- Protection: IP65
- Indication of active output: 1 LED
- Electrical connection: cable PVC, PUR 3 x 0.25 mm² or coupler plug or plug M12, other types on request

**Operating Principle**
The optoelectronic sensor contains an infrared LED and a light receiver. Light from the LED is directed into a prism which forms the tip of the sensor. With no liquid present, light from the LED is reflected within the prism to the receiver. When rising liquid immerses the prism, the light is refracted out into the liquid, leaving little or no light reach the receiver. Sensing this change, the receiver actuates electronic switching within the unit to operate an external alarm or control circuit.

**Connection diagram**

<table>
<thead>
<tr>
<th>Pin assignment</th>
<th>Supply voltage +12...32 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply voltage +12...32 VDC</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Output +12...32 VDC</td>
</tr>
</tbody>
</table>

Supply voltage +12...32 VDC
0
Output +12...32 VDC
Product overview / order table

**OPG02 Process connection**
- A  Connection thread BSPP 1/2"
- X  Other types on request

**Electrical connection**
- 2P  Connection cable: 2 m PVC 3 x 0.25 mm², Standard
- 2U  Connection cable: 2 m PUR 3 x 0.25 mm², Standard
- W  Coupler plug, DIN 43650
- M12 Plug M12
- X  Other types on request

**Switch function**
- S  Closer (in medium closed, 12 - 32 VDC)
- O  Opener (in medium open, 0 VDC)

**Sensitivity**
- A  Sensitivity not adjustable
- T  Sensitivity adjustable (with potentiometer)

**Sensor length L**
Dimensions in mm (length from sealing face of process connection, L min=65 mm, L max=3000 mm)

Example: Process connection BSPP 1/2", 2 m PVC cable, closer, sensitivity not adjustable, length 500 mm: OPG02-A2PSA500

**Characteristics**
- No moving parts
- Excellent price / performance ratio
- Easy to install
- Mounting direction: any
- High reliability
- Long service life
- Measuring accuracy ± 0.5 mm
- Electrical connection: cable connection or plug
- Output PNP
- Close or Open
- Adjustable sensitivity for any application (e.g. foam detection)
- Sensor length: selectable from min. 65 mm to max. 3000 mm

**Areas of application**
- Plant construction
- Machine tools
- Chemicals and Pharmaceutics
- Hydraulics
- Machine construction
- Water treatment etc.

**Accessories: Circular plugs M12**

<table>
<thead>
<tr>
<th>Type</th>
<th>Order number</th>
<th>Design</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female plug M12 with</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PVC cable</td>
<td>K12PVC 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>K12PVC 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>K12PUR 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>K12PUR 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M12, angle type with</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PVC cable</td>
<td>W12PVC 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>W12PVC 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>W12PUR 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>W12PUR 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With reservation of the technical modifications

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**Operating Principle**

The optoelectronic sensor contains an infrared LED and a light receiver. Light from the LED is directed into a prism which forms the tip of the sensor. With no liquid present, light from the LED is reflected within the prism to the receiver.

When rising liquid immerses the prism, the light is refracted by the liquid, leaving little or no light reaching the receiver. Sensing this change, the receiver initiates a switching process.

**Base model OPG03**

Product overview shown below

**Technical Data**

- **Operating pressure**: max. 25 bar
- **Ambient temperature**: -30 to 70°C
- **Liquid temperature**: -30 to 100°C; temporarily up to max. +150°C
- **Accuracy**: ± 0.5 mm
- **Mounting direction**: any
- **Min. distance sensor tip to any reflecting surface**: > 10 mm
- **Prism material**: quartz glass
- **Process connections**: BSPP 1/2", 1.4571, other types on request
- **Sensor tube**: ø 13 mm, 1.4571
- **Sensor length L**: min. 65 mm, max. 3000 mm

**Electrical Data**

- **Supply voltage**: 230 VAC
- **Switch points**: 1
- **Output**: 250 VAC / 6A
- **Life cycles**: >10^7
- **Function**: change-over switch
- **Protection rating**: IP65
- **Connection box**: Aluminium 75 x 80 x 57 mm, other types on request

**Connection diagram**

```
OPG03

Relay

- W 1  Relay output change-over switch
- W 2  250 VAC / 6A
- W 3
```

- **230 VAC Supply voltage**
# Product overview / order table

**OPG03**  |  **Process connection**  
--- | ---  
A  | Connection thread BSPP1/2"  
X  | other types on request  

**Connection box**  
B  | Aluminium case 75 x 80 x 57 mm, IP65  
X  | other types on request  

**Sensitivity**  
A  | Sensitivity not adjustable (please specify the medium)  
T  | Sensitivity adjustable (with potentiometer)  

**Sensor length L**  
Dimensions in mm (length from sealing face of process connection, L min. = 65 mm, L max. = 3000 mm)  

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**Example:** Process connection BSPP1/2", aluminium case, sensitivity not adjustable, length 500 mm: OPG03-ABA0500

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**Characteristics**  
- No moving parts  
- Excellent price / performance ratio  
- Easy to install  
- Mounting direction: any  
- High reliability  
- Long service life  
- Measuring accuracy ± 0.5 mm  
- Electrical connection box  
- Relay output 250 VAC / 6A  
- Change-over switch  
- Adjustable sensitivity for any application (e.g. foam detection)  
- Sensor length selectable from min. 65 mm to max. 3000 mm  

**Areas of application**  
- Plant construction  
- Machine tools  
- Chemical and Pharmaceutical  
- Hydraulics  
- Machine construction  
- Water treatment, etc.

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The optoelectronic sensor contains an infrared LED and a light receiver.

Light from the LED is directed into a prism which forms the tip of the sensor. With no liquid present, light from the LED is reflected within the prism to the receiver.

When rising liquid immerses the prism, the light is refracted by the liquid, leaving little or no light reaching the receiver. Sensing this change, the receiver initiates a switching process.

Connection diagram

<table>
<thead>
<tr>
<th>Pin assignment M8</th>
<th>OPG04</th>
<th>Supply voltage 12...32 VDC</th>
<th>Output 12...32 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply voltage 12...32 VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Output 12...32 VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Product overview / order table

OPG04

Process connection
A  Connection thread BSPP1/2"
X  Other types on request

Electrical connection
2P  Connection cable: 2 m PVC 3 x 0.25 mm², Standard
     other cable length: dimensions in m
2U  Connection cable: 2 m PUR 3 x 0.25 mm², Standard
     other cable length: dimensions in m
M8  Plug M8
X  Other types on request

Switch function
S  Closer (in medium closed, 12 - 32 VDC)
O  Opener (in medium open, 0 VDC)

Sensitivity
A  Sensitivity not adjustable (please specify the medium)
T  Sensitivity adjustable (with potentiometer)

Example: Process connection BSPP1/2", 2 m PVC cable, closer, sensitivity not adjustable, medium water: OPG04-A2PSA

Characteristics
• Small and compact
• No moving parts
• Excellent price / performance ratio
• Easy to install
• Mounting direction: any
• High reliability
• Long service life
• Measuring accuracy ± 0.5 mm
• Electrical connection: cable connection or plug
• Optical switch condition check via the LED
• Output PNP
• Pressure 40 bar, optional also higher pressure
• Adjustable sensitivity for any application
• Glass fused in the steel body (without seal)

Areas of application
• The optoelectronic level switch OPG04 is used for monitoring the level of liquids in refrigeration applications.

Accessories: Circular plugs M8

<table>
<thead>
<tr>
<th>Type</th>
<th>Order number</th>
<th>Design</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female plug M8 with 2 m PVC cable</td>
<td>K8PVC 2</td>
<td></td>
<td>1 brown</td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>K8PVC 5</td>
<td></td>
<td>3 blue</td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>K8PUR 2</td>
<td></td>
<td>4 black</td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>K8PUR 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M8, angle type with 2 m PVC cable</td>
<td>W8PVC 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>W8PVC 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>W8PUR 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>W8PUR 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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With reservation of technical modifications
LSD04E/11.01
The optoelectronic Senlux Besta level switches are used for the level control of liquids. They may be installed either vertically or horizontally.

**Base model OPG05**

Product overview shown below

**Technical Data**
- Operating pressure: max. 100 bar
- Ambient temperature: -30°C to +80°C
- Liquid temperature: -40°C to +170°C, > +170°C on request
- Accuracy: ± 0.5 mm
- Material housing: stainless steel 1.4305
- Prism material: quartz glass
- min. distance sensor tip to reflecting wall: > 10 mm
- Mounting direction: any
- Process connections: BSPP 1/2", other types on request

**Electrical Data**
- Supply voltage: 12...32 VDC
- Supply current max.: 40 mA
- Switch points: 1
- Output: PNP Transistor, reverse polarity protected
- Function: close or open
- Protection rating: IP65
- Indication of active output: 1 LED
- Electrical connection: cable PVC, PUR, 3 x 0.25 mm² or plug M12, angular plug, other types on request

**Operating Principle**
The optoelectronic sensor contains an infrared LED and a light receiver. Light from the LED is directed into a prism which forms the tip of the sensor. With no liquid present, light from the LED is reflected within the prism to the receiver.

When rising liquid immerses the prism, the light is refracted by the liquid, leaving little or no light reaching the receiver. Sensing this change, the receiver initiates a switching process.

**Connection diagram**

<table>
<thead>
<tr>
<th>OPG05</th>
<th>Supply voltage 12...32 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>brown</td>
<td></td>
</tr>
<tr>
<td>white</td>
<td>0</td>
</tr>
<tr>
<td>green</td>
<td>Output 12...32 VDC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pin assignment M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Supply voltage 12...32 VDC</td>
</tr>
<tr>
<td>3 0</td>
</tr>
<tr>
<td>4 Output 12...32 VDC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Angular Plug DIN 43650</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Supply voltage 12...32 VDC</td>
</tr>
<tr>
<td>2 0</td>
</tr>
<tr>
<td>3 Output 12...32 VDC</td>
</tr>
</tbody>
</table>
Product overview / order table

**OPG05**

<table>
<thead>
<tr>
<th>Process connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Connection thread BSPP1/2&quot;</td>
</tr>
<tr>
<td>X  Other types on request</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2P  Connection cable: 2 m PVC 3 x 0.25 mm², Standard</td>
</tr>
<tr>
<td>other cable length: dimensions in m</td>
</tr>
<tr>
<td>2U  Connection cable: 2 m PUR 3 x 0.25 mm², Standard</td>
</tr>
<tr>
<td>other cable length: dimensions in m</td>
</tr>
<tr>
<td>W  Angular plug DIN 43650</td>
</tr>
<tr>
<td>M12  Plug M12</td>
</tr>
<tr>
<td>X  Other types on request</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switch function</th>
</tr>
</thead>
<tbody>
<tr>
<td>S  Closer (in medium closed, 12 - 32 VDC)</td>
</tr>
<tr>
<td>O  Opener (in medium open, 0 VDC)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Sensitivity not adjustable (please specify the medium)</td>
</tr>
<tr>
<td>T  Sensitivity adjustable (with potentiometer)</td>
</tr>
</tbody>
</table>

Example: Process connection BSPP1/2", 2 m PVC cable, closer, sensitivity not adjustable, medium water: OPG05-A2PSA

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**Characteristics**

- Small and compact
- Excellent price / performance ratio
- Liquid temperature up to +170°C, >+170°C on request
- Pressure 25 bar
- Mounting direction: any
- High reliability
- Measuring accuracy ± 0.5 mm
- Electrical connection: cable connection, plug M12 or angular plug
- Output PNP
- Close or Open
- Adjustable sensitivity for any application

**Areas of application**

- Plant construction
- Machine tools
- Chemicals and Pharmaceuticals
- Hydraulics
- Machine construction
- Water treatment etc.

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**Accessories: Circular plugs M12**

<table>
<thead>
<tr>
<th>Type</th>
<th>Order number</th>
<th>Design</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female plug M12 with</td>
<td>K12PVC 2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2 m PVC cable</td>
<td>K12PVC 5</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>K12PUR 2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>K12PUR 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M12, angle type with</td>
<td>W12PVC 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PVC cable</td>
<td>W12PVC 5</td>
<td></td>
<td></td>
</tr>
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<td>5 m PVC cable</td>
<td>W12PUR 2</td>
<td></td>
<td></td>
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<tr>
<td>2 m PUR cable</td>
<td>W12PUR 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With reservation of technical modifications

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Printed in Switzerland
Level limit switch in stainless steel 1.4404 for hygiene applications with variable probe length

**Base model OPG06**
Product overview shown below

### Technical Data
- **Operating pressure**: max. 25 bar
- **Ambient temperature**: -25 to 70°C
- **Operating temperature**: -30 to 100°C temporary up to max. +125°C
- **Measuring accuracy**: ± 0.5 mm
- **Material housing**: stainless steel 1.4404
- **Material prism**: quartz glass
- **Mounting direction**: any
- **Min. distance sensor tip to any opposite wall**: > 10 mm
- **Process connections**: BSPP 1½" clamp, 2" clamp, other types on request
- **Sensor tube**: ø 13 mm, 1.4404
- **Sensor length L**: min. 65 mm, max. 1000 mm

### Electrical Data
- **Supply voltage**: 12...32 VDC
- **Supply current max.**: 40 mA
- **Switch point number**: 1
- **Output**: Protective DC PNP (200 mA)
- **Switch function**: closer or opener
- **Protection class**: IP65
- **Electrical connection**: cable PVC and PUR 3 x 0.25 mm² or plug M12, other types on request

### Operating Principle
The electro-optic sensor contains an infrared LED and a light receiver.
Light from the LED is directed into a prism which forms the tip of the sensor. With no liquid present, light from the LED is reflected within the prism to the receiver.
When rising liquid immerses the prism, the light is refracted out into the liquid, leaving little or no light reach the receiver. Sensing this change, the receiver actuates electronic switching within the unit to operate an external alarm or control circuit.

### Connection diagram
```
<table>
<thead>
<tr>
<th>OPG06</th>
<th>Pin assignment M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>brown</td>
<td>1 Supply voltage +12...32 VDC</td>
</tr>
<tr>
<td>white</td>
<td>0</td>
</tr>
<tr>
<td>green</td>
<td>Output +12...32 / 0 VDC</td>
</tr>
</tbody>
</table>
```

**Product overview / order table**

**OPG06**  
**Process connection**  
A  clamp 1½"  
B  clamp 2"  
X  Other types on request

**Electrical connection**  
- **2P**  
  - Connection cable: 2 m PVC 3 x 0.25 mm², Standard  
  - other cable length: dimensions in m  
- **2U**  
  - Connection cable: 2 m PUR 3 x 0.25 mm², Standard  
  - other cable length: dimensions in m  
- **M12**  
  - Plug M12  
X  Other types on request

**Switch function**  
- **S**  
  - Closer (in medium closed, 12 - 32 VDC)  
- **O**  
  - Opener (in medium open, 0 VDC)

**Sensitivity**  
- **A**  
  - Sensitivity not adjustable (please specify the medium)  
- **T**  
  - Sensitivity adjustable (with potentiometer)

**Sensor length L**  
- Dimensions in mm  
  (length from sealing face of process connection, L min.=65 mm, L max.=1000 mm)

**Example**: Process connection clamp 2", 2 m PVC cable, closer, sensitivity not adjustable, Length 500 mm: OPG06-B2PSA0500

**Characteristics**
- No moving parts
- Wetted parts 1.4404
- Easy mounting
- Mounting direction: any
- High reliability
- High life expectancy
- Measuring accuracy ± 0.5 mm
- Electrical connection: cable connection, plug M12 or angular plug
- Output PNP
- Close or Open
- Adjustable sensitivity for any application
- Variable sensor length: min 65 mm, max. 1000 mm

**Areas of application**
- Food
- Pharmaceutical

**Accessories: Circular plugs M12**

<table>
<thead>
<tr>
<th>Type</th>
<th>Order n°</th>
<th>Design</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female plug M12 with</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PVC cable</td>
<td>K12PVC 2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>K12PVC 5</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>K12PUR 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>K12PUR 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M12, angle type with</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PVC cable</td>
<td>W12PVC 2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>5 m PVC cable</td>
<td>W12PVC 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 m PUR cable</td>
<td>W12PUR 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 m PUR cable</td>
<td>W12PUR 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With reservation of technical modifications

Besta Ltd., CH-8610 Uster, Switzerland
Phone +41 43 399 15 15, Fax +41 43 399 15 00
info@besta.ch, www.besta.ch

Printed in Switzerland
Limit Switch in stainless steel 1.4404/1.4571 for hygiene applications, high temperature version.

Base model OPG061
Product overview shown below

Operating Principle
The opto-electronic sensor contains an infrared LED and a light receiver.
Light from the LED is directed into a prism which forms the tip of the sensor. With no liquid present, light from the LED is reflected within the prism to the receiver.
When rising liquid immerses the prism, the light is refracted out into the liquid, leaving little or no light reach the receiver. Sensing this change, the receiver actuates electronic switching within the unit to operate an external alarm or control circuit.

Connection diagram

<table>
<thead>
<tr>
<th>Pin assignment M8</th>
<th>Coupler plug DIN 43650</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Supply voltage +12…32 VDC</td>
<td>1 Supply voltage +12…32 VDC</td>
</tr>
<tr>
<td>3 0</td>
<td>2 0</td>
</tr>
<tr>
<td>4 Output +12…32 / 0 VDC</td>
<td>3 Output +12…32 / 0 VDC</td>
</tr>
</tbody>
</table>
Product overview / order table

**OPG061**  
**Process connection**  
A  Clamp 1½”  
B  Clamp 2”  
X  Other types on request

**Electrical connection**
- 2P  Connection cable: 2 m PVC 3 x 0.25 mm²,  
- 2U  Connection cable: 2 m PUR 3 x 0.25 mm²,  
- M8  Plug M8  
- W  Coupler plug DIN 43650  
- X  Other types on request

**Switch function**
- S  Closer (in medium closed, 12 – 32 V DC)  
- O  Opener (in medium opened, 0 V DC)

**Sensitivity**
- A  Sensitivity not adjustable (please specify the medium)  
- T  Sensitivity adjustable (with poti)

Example: Process connection clamp 2”, 2 m PVC cable, closer, sensitivity not adjustable: OPG061-B2PSA

**Characteristics**
- No moving parts  
- Operating temperature: +170°C  
- Simple to install  
- Mounting direction: any  
- Parts contacted with the medium are made of 1.4404  
- Long service life  
- High reliability  
- Measuring accuracy ± 0.5 mm  
- Electrical connection: cable connection or plug  
- Output PNP  
- Closer or Opener  
- Adjustable sensitivity for any application (e.g. foam detection)

**Areas of application**
- Food industry  
- Pharmaceutics

**Accessories: Circular plugs M8**

<table>
<thead>
<tr>
<th>Type</th>
<th>Order n°</th>
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<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female plug M8 with 2 m PVC cable</td>
<td>K8PVC 2</td>
<td>1</td>
<td>brown</td>
</tr>
<tr>
<td>Female plug M8 with 5 m PVC cable</td>
<td>K8PVC 5</td>
<td>3</td>
<td>blue</td>
</tr>
<tr>
<td>Female plug M8 with 2 m PUR cable</td>
<td>K8PUR 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M8 with 5 m PUR cable</td>
<td>K8PUR 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M8, angle type with 2 m PVC cable</td>
<td>W8PVC 2</td>
<td>4</td>
<td>black</td>
</tr>
<tr>
<td>Female plug M8, angle type with 5 m PVC cable</td>
<td>W8PVC 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M8, angle type with 2 m PUR cable</td>
<td>W8PUR 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female plug M8, angle type with 5 m PUR cable</td>
<td>W8PUR 5</td>
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