

## Type 8022

Flow Transmitter / Pulse divider  
Durchflusstransmitter / Impulsteiler  
Transmetteur de débit / Diviseur d'impulsions



Quickstart (from device Version 2)  
English

We reserve the right to make technical changes without notice.

Technische Änderungen vorbehalten.

Sous réserve de modifications techniques.

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Operating Instructions 1603/03\_EU-ml 00809507 / Original FR

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## 1. QUICKSTART

Keep these instructions in a location which is easily accessible to every user and make these instructions available to every new owner of the device.

### Important Safety Information!

Read the quickstart carefully and thoroughly. Study in particular the chapters entitled *Basic Safety Instructions* and *Intended Use*.

- The quickstart must be read and understood.

The quickstart explains, using examples, how to install and start-up the device.

A detailed description of the device can be found in the operating instructions for type 8022.



The operating instructions can be found on the enclosed CD and on the Internet at:

[www.burkert.com](http://www.burkert.com)

## 1.1. Symbols

The following symbols are used in these instructions.



### CAUTION!

#### Warns of a possible danger!

- ▶ Failure to observe this warning may result in a medium or minor injury.

### NOTE!

#### Warns of damage to property!



Indicates important additional information, tips and recommendations.

→ designates a procedure that must be carried out.

## 1.2. Definition of the term device

In these instructions, the term "device" always refers to the flow transmitter type 8022 or the pulse divider type 8022.

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## 2. INTENDED USE

**Use of the device that does not comply with the Operating Instructions could present risks to people, nearby installations and the environment.**

**The flow transmitter type 8022, associated to a Bürkert flow sensor, converts the frequency signal generated by the flow sensor into an analogue 4-20 mA current signal.**

**The pulse divider type 8022, associated to a Bürkert flow sensor, converts the frequency signal generated by the flow sensor into an adjustable frequency signal.**

- ▶ The device is designed for use in industrial environments.
- ▶ Use the device in compliance with the characteristics and commissioning and use conditions specified in the contractual documents and in the Operating Instructions.
- ▶ Do not use the device for security applications.
- ▶ Do not use the device outdoors.
- ▶ Protect the device against electromagnetic interference and ultraviolet rays.
- ▶ Use the device only if in perfect working order.
- ▶ Properly transport, store, install and operate the device.
- ▶ Only use the device as intended.

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## 3. BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any

- contingencies and events which may arise during the installation, operation and maintenance of the device.
- local safety regulations – the operator is responsible for observing these regulations, also with reference to the installation personnel.

### NOTE!

#### Electrostatic sensitive components/modules!

The device contains electronic components, which react sensitively to electrostatic discharge (ESD). Contact with electrostatically charged persons or objects is hazardous to these components. In the worst case scenario, they will be destroyed immediately or will fail after start-up.

- ▶ Observe the requirements in accordance with EN 61340-5-1 to minimize and even avoid the possibility of damage caused by a sudden electrostatic discharge!
- ▶ Also, ensure that you do not touch electronic components when the power supply voltage is present!



### Various dangerous situations

To avoid injury take care:

- ▶ not to use the device in explosive atmospheres.
- ▶ not to use the device in an environment incompatible with the materials it is made of.
- ▶ not to subject the device to mechanical loads (e.g. by placing objects on top of it or by using it as a step).
- ▶ not to make any modifications to the device.
- ▶ to prevent any unintentional power supply switch-on.
- ▶ to ensure that installation and maintenance work are carried out by qualified, authorised personnel in possession of the appropriate tools.
- ▶ to guarantee a defined or controlled restarting of the process, after a power supply interruption.
- ▶ to observe the general technical rules when installing and using the device.

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## 4. GENERAL INFORMATION

### 4.1. Contact Address

To contact the manufacturer of the device, use following address:

Bürkert SAS  
 Rue du Giessen  
 BP 21  
 F-67220 TRIEMBACH-AU-VAL

The addresses of our international sales offices are available on the internet at: [www.burkert.com](http://www.burkert.com)

### 4.2. Warranty

The warranty is only valid if the device is used as intended in accordance with the specified application conditions.

### 4.3. Information on the Internet

The operating instructions and data sheets for type 8022 can be found on the Internet at: [www.burkert.com](http://www.burkert.com)

## 6. TECHNICAL DATA

### 6.1. Operating conditions

Ambient temperature	-10...+60 °C
Protection class	IP65 according to EN 60529, if the following conditions are respected: <ul style="list-style-type: none"> <li>▪ Cable gland wired or blanked-off, or female connector plugged-in and tightened</li> <li>▪ Nut of the cable gland tightened with a torque of 1 N·m ± 20 % (0,74 lbf·ft ± 20 %).</li> <li>▪ Housing closed and screw tightened with a torque of 0,3 N·m ± 20 % (0,22 lbf·ft ± 20 %), or display and configuration unit plugged on the device and screw tightened with a torque of 0,3 N·m ± 20 % (0,22 lbf·ft ± 20 %).</li> </ul>
Combined flow sensor	
▪ Flow transmitter	▪ Bürkert flow sensor with a transistor output, in the Low Power version of the types 8020, 8030, 8070, SE30.
▪ Pulse divider	▪ Bürkert flow sensor with a transistor output, of the types 8020, 8030, 8070, SE30.

## 5. DESCRIPTION

The device, when it is combined with a flow sensor, operates either as a flow transmitter thanks to a 4-20 mA current output, or as a pulse divider thanks to a transistor output. By default, the device operates as a flow transmitter.

- When operating as a flow transmitter, the device converts the frequency signal generated by the combined Bürkert flow sensor into an analogue 4-20 mA current signal (2-wire connection).
- When operating as a pulse divider, the device converts the frequency signal generated by the combined Bürkert flow sensor into an adjustable frequency signal (3-wire connection).

The device may be fitted with a display and configuration unit. The display and configuration unit makes it possible to:

- change the operating mode of the device,
- configure the device.

### 6.2. Mechanical Data

Fastening	<ul style="list-style-type: none"> <li>▪ device without display and configuration unit</li> <li>▪ device with display and configuration unit</li> </ul>	<ul style="list-style-type: none"> <li>▪ 1 M3 x 35 screw</li> <li>▪ 1 M3 x 45 screw</li> </ul>
Housing material	PA/PC	
Material of the seals	<ul style="list-style-type: none"> <li>▪ seal for the sensor fixed connector</li> <li>▪ seal for the cover</li> </ul>	<ul style="list-style-type: none"> <li>▪ NBR</li> <li>▪ EPDM</li> </ul>

### 6.3. Electrical Data

Electrical connection	<ul style="list-style-type: none"> <li>▪ 4-pin terminal strip, 1,5 mm<sup>2</sup> max. wire section, 6 - 7 mm cable diameter</li> <li>▪ M12 male fixed connector</li> </ul>
Voltage supply, 12...+30 V DC	<ul style="list-style-type: none"> <li>▪ filtered and regulated</li> <li>▪ SELV circuit at a non dangerous energy level</li> <li>▪ tolerance : ±10%</li> <li>▪ residual ripple : &lt; 5%</li> </ul>
Frequency input	1-600 Hz, sensor supply voltage approximately V+ minus 1 V

<p>4-20 mA output</p> <ul style="list-style-type: none"> <li>▪ Uncertainty of the output value</li> <li>▪ Min. voltage drop at the device terminals</li> <li>▪ Loop impedance</li> </ul>	<ul style="list-style-type: none"> <li>▪ <math>\pm 1,5\%</math> of the full scale</li> <li>▪ <math>&lt; 10\text{ V}</math> at 20 mA</li> <li>▪ max. <math>100\ \Omega</math> at 12 VDC, max. <math>700\ \Omega</math> at 24 VDC, max. <math>1000\ \Omega</math> at 30 VDC</li> </ul>
<p>Transistor output</p> <ul style="list-style-type: none"> <li>▪ Uncertainty of the output value</li> </ul>	<p>NPN or PNP, 50 mA max. current, frequency up to 600 Hz</p> <ul style="list-style-type: none"> <li>▪ <math>\pm 1\%</math> of the measured value</li> </ul>
<p>Maximum power consumption</p> <ul style="list-style-type: none"> <li>▪ Operating as a flow transmitter (4-20 mA output in a 2-wire system)</li> <li>▪ Operating as a pulse divider (NPN/PNP output in a 3-wire system)</li> </ul>	<ul style="list-style-type: none"> <li>▪ 0,6 W</li> <li>▪ 3,2 W, from which                             <ul style="list-style-type: none"> <li>- 0,2 W for the device,</li> <li>- max. 1,5 W for the flow sensor,</li> <li>- max. 1,5 W for the NPN/PNP output</li> </ul> </li> </ul>

## 7.2. Electrical wiring

The electrical connection of the device is made on a terminal strip via cable gland, or an M12 male fixed connector.

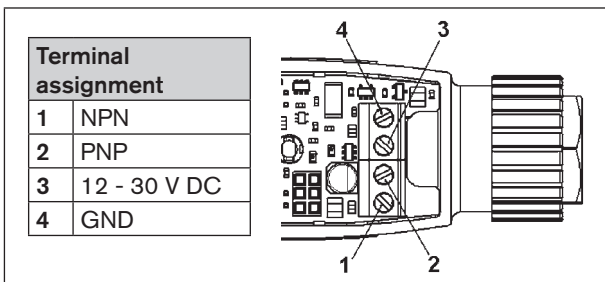


Fig. 2: Terminal assignment, version with cable gland

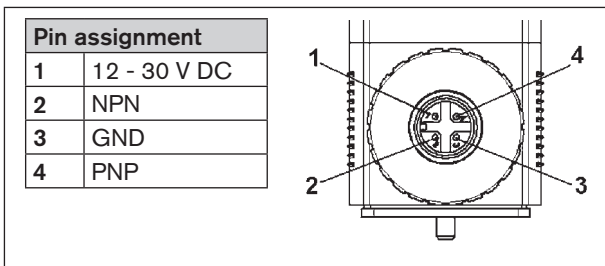


Fig. 3: Pin assignment, M12 male fixed connector

## 7. ASSEMBLY, INSTALLATION

### 7.1. Assembly of the device

#### NOTE!

**For the fault-free operation of the device observe the following during installation:**

- When screwing to the sensor, ensure the seal is seated correctly.
- Torque the screw to a value between 0.2 N·m and 0.3 N·m (between 0,15 and 0,22 lbf·ft), in order not to damage the housing. With a damaged housing, correct operation of the device cannot be guaranteed.

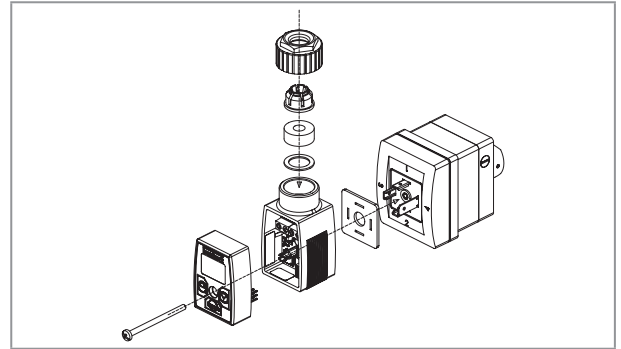


Fig. 1: Assembling the device and the sensor

#### 7.2.1. Wiring as a flow transmitter

For an operation as a flow transmitter, wire the 4-20 mA current output with 2 wires, as described in Fig. 4.

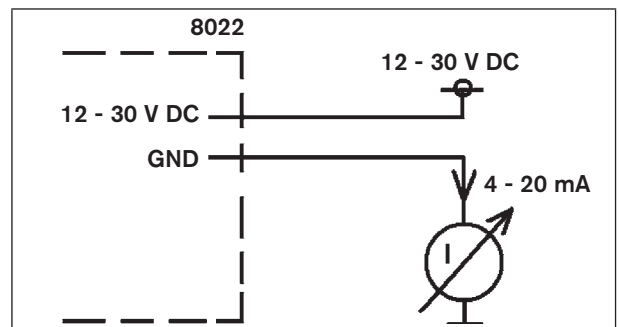


Fig. 4: Connection of the 4-20 mA current output of the flow transmitter

#### 7.2.2. Wiring as a pulse divider

For an operation as a pulse divider, wire the transistor output with 3 wires, as described in Fig. 5.

The transistor output can be wired in NPN or in PNP mode with 3 wires.

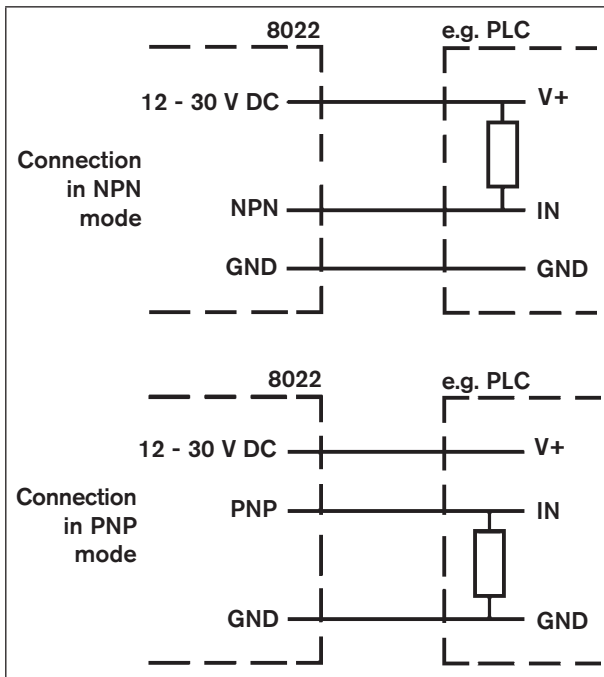


Fig. 5: Connection of the transistor output of the pulse divider

→ Adjust the device depending whether it is used as a flow transmitter or a pulse divider. Refer to the instruction manual on the delivered CD or on the internet at [www.burkert.com](http://www.burkert.com).

## 10. MAINTENANCE

The device is maintenance-free when operated according to these operating instructions.

## 8. COMMISSIONING

### NOTE!

- Only energize the device when the cover is closed.
- Switch off the device before removing the display and configuration unit.

## 9. ADJUSTMENT

### NOTE

The device is not tight when the display and configuration unit is removed.

- Screw the cover with order code 670549 on the device as soon as the display and configuration unit is removed.



The display and configuration unit is only required to indicate the flow rate or to configure the device. It can be removed after the settings have been made.

- Switch off the device before removing the display and configuration unit.

## 11. PACKAGING, TRANSPORT, STORAGE, DISPOSAL

### NOTE!

#### Transport damage!

Inadequately protected device may be damaged during transport.

- During transportation protect the device against moisture and dirt in shock-resistant packaging.
- Do not allow the temperature to exceed or drop below the permitted storage temperature.

#### Incorrect storage may damage the device.

- Store the device in a dry and dust-free location!
- Storage temperature: -20...65 °C

#### Damage to the environment.

- Dispose of the device and packaging in an environmentally friendly manner.
- Observe applicable regulations on disposal and the environment.