Flow control valve HON 530-E-WG DN 500/500

Serving the Gas Industry Worldwide

PRODUCT INFORMATION
Flow control valve HON 530-E-WG DN 500/500

Application, properties, technical specifications

Applications

- For feeding gas into and/or withdrawing gas from gas storage facilities and important gas mains
- For all tasks in connection with optimising gas supply
- For all tasks of flow-rate or gas-pressure control with small change dynamics
- Bi-directional operation
- Suitable for gases according to DVGW Worksheet G 260 and neutral, non-aggressive gases – Other gases: on enquiry.

Characteristics

- Main valve with electric variable-speed drive
- In-line flow guarantees very high flow rates
- Valve sleeve with full compensation of static inlet and outlet pressures
- Comes with standard noise-reducing devices, additional/optional devices are available on request
- Valve performance curve may be adjusted to match prevailing operating conditions
- In case auxiliary energy fails → valve stays put in last position (function: fail position (FP))
- Electric variable-speed drive is suitable for three-step control with PI behaviour in combination with electric pilots
- Frequency-dependent valve control speeds are possible – setting by means of a frequency converter depending on operating conditions
- Explosion-proof design

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Actuator unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. admissible pressure PS</td>
<td>depending on flange pressure stage up to 105 bar</td>
</tr>
<tr>
<td>Max. operating pressure pmax; bi-directional operation possible</td>
<td>depending on flange pressure stage up to 105 bar</td>
</tr>
<tr>
<td>Pipe size DN*</td>
<td>Inlet</td>
</tr>
<tr>
<td>Valve seat diameter, valve stroke and $K_G$ value</td>
<td>500</td>
</tr>
<tr>
<td>Type of connection</td>
<td>Flange class 600 accor. to ANSI 16.5</td>
</tr>
<tr>
<td>Temperature range class 2 (DIN) EN 334</td>
<td>Ambient and operating temperatures ~20 °C to +60 °C (Other temperature ranges on enquiry)</td>
</tr>
<tr>
<td>Valve sleeve</td>
<td>– with full compensation of static inlet and outlet pressures – with oxide-ceramic surface coating to protect guide and sealing areas</td>
</tr>
<tr>
<td>Bubble-tight shut off of final control element (valve seal)</td>
<td>Bubble-tight shut off accor. to DIN EN 334 by means of elastic sealing ring</td>
</tr>
<tr>
<td>Integrated primary noise attenuation</td>
<td>standard</td>
</tr>
</tbody>
</table>

* other pipe sizes on enquiry
** for natural gas w/d = 0.64 ($p_0 = 0.83$ kg/m$^3$) and $t_u = 15$ °C gas inlet temperature
### Specifications

**Electric variable-speed drive/electric control**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power supply</strong></td>
<td>400 V 3-phase AC, 50 Hz – other frequencies available on request</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>0.56 kW</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>3-step control → ccw/OFF/cw</td>
</tr>
<tr>
<td><strong>Nominal speed (n_{50})</strong></td>
<td>definition accor. to valve travel time (t_f)</td>
</tr>
<tr>
<td><strong>Stroke limiting switch; (W_{Emin}/W_{Emax})</strong></td>
<td>standard for valve stroke 0 and 100 %</td>
</tr>
<tr>
<td><strong>Emergency torque limiting switch DME</strong></td>
<td>standard for both directions</td>
</tr>
<tr>
<td><strong>Explosion protection of variable-speed drive</strong></td>
<td>II 2 G Ex de IIC T4/de IIC T3*</td>
</tr>
</tbody>
</table>

#### Electrical control

- **Power supply unit**: with standard drive systems (make: Drehmo): optional use of a frequency converter is possible
- **Control unit (automation)**: control via programmable logic controller (PLC) or micro-controller

#### Actuator unit

- **Mechanical transmission of power**: via rotary drive
- **Variable speed drive/final control element**: approx. 1 to 4 min. per stroke, depending on type
- **Valve travel time \(t_f\)**: remote position indicator potentiometer 5 kΩ via ex-protection isolating amplifier – also 0/4 – 20 mA signal

#### Materials

- **Casing**: cast steel (HON standard)
- **Internal parts of main valve**: steel, spheroidal iron, Ms, Al alloys
- **Sealing ring**: rubber plastics (NBR), PTFE

#### Strength – leak proofness – functionality

Following DIN EN 334

#### Explosion protection, general

All mechanical components of this device are without potential ignition sources and/or hot faces. They are not subject to ATEX 95 (94/9/EC). All electronic accessories, on the other hand, meet ATEX requirements.

* depends on variable speed drive

### Registration

**CE registration according to PED** pending
Flow control valve HON 530-E-WG DN 500/500

Design and operation

Applications

The flow control valve HON 530-E-WG DN 500/500 has been designed for flow-rate and gas-pressure control duties with small change dynamics – in particular for volume/supply optimisation (feeding gas into and/or withdrawing gas from gas storage facilities and important mains). But first and foremost, this product is at home wherever maximum gas flow must be achieved even at smallest pressure differences. This flow control valve may be operated as a bi-directional valve.

Functional description

The flow control valve HON 530-E-WG DN 500/500 may be used as a final control element in electronic flow rate and/or pressure control loops. There is an electric variable-speed drive to adjust the travel of the valve sleeve (i.e. change the stroke). The variable speed drive is integrated with the final control element, thus transferring the torque of the motor directly to the shaft of the control valve. The rotary drive and spindle unit converts the rotary motion of the shaft into the axial stroke required for the valve sleeve. That way, the opening of the valve can be adjusted.

The flow control valve HON 530-E-WG DN 500/500 has been designed with a minimum of parts to provide for easy maintenance. The final control element consists of one axial inline body. Valve sleeve with full static pressure compensation between inlet and outlet. The valve sleeve sits in the expansion sleeve. Thanks to a special coating, it requires only minimum forces during adjustments. To reduce noise, the design makes recourse to the well-proven method of splitting the jet in the expansion sleeve (perforated flow restrictor). The operating side of the variable speed drive may be arranged as needed.

Flow control valve
HON 530-E-WG DN 500/500

---

Variable speed drive
Expansion sleeve (perforated flow restrictor)
Valve sleeve
inlet side
storage facility
outlet side
mains
Final control element

1) for use with gas storage facility
### Dimensions and weight

<table>
<thead>
<tr>
<th>Nominal width</th>
<th>Valve seat diameter</th>
<th>A in mm</th>
<th>B* Drehmo in mm</th>
<th>C* in mm</th>
<th>Weight (approx.) in kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inlet</td>
<td>Outlet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>500</td>
<td>480</td>
<td>1194</td>
<td>874</td>
<td>450</td>
</tr>
</tbody>
</table>

* depends on drive
Flow control valve HON 530-E-WG DN 500/500

### Description

<table>
<thead>
<tr>
<th>Final control element</th>
<th>HON 530-E-WG</th>
<th>DN 500/500</th>
<th>480</th>
<th>1</th>
<th>FU</th>
<th>A</th>
<th>So</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN inlet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN outlet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve seat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable drive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Pipe size DN**
  - Inlet: 500
  - Outlet: 500
  - VS: 480

- **Variable speed drive**
  - Make: EMG (Drehmo)
  - 1

- **Electric power control**
  - Frequency converter: FU

- **Electric signal control**
  - Automation (Please specify details): A

- **Special design (Please specify details)**: So
Flow control valve HON 530-E-WG DN 500/500
For More Information
To learn more about Honeywell’s
Advanced Gas Solutions, visit
www.honeywellprocess.com or contact
your Honeywell account manager

GERMANY
Honeywell Process Solutions
Honeywell Gas Technologies GmbH
Osterholzstrasse 45
34123 Kassel, Deutschland
Tel: +49 (0)561 5007-0
Fax: +49 (0)561 5007-107