



# HEIDENHAIN



Product Information

## **DA 300** Compressed Air Unit

September 2006

# DA 300 Compressed Air Unit

The HEIDENHAIN sealed **linear and angle encoders** can be provided with a slight overpressure, making it possible to increase the degree of protection against contamination. The compressed air introduced directly onto the encoders must be cleaned by a microfilter and must comply with the following quality classes as per ISO 8573-1 (Edition 1995):

- Solid contaminants: Class 1 (max. particle size 0.1 µm and max. particle density 0.1 mg/m<sup>3</sup> at 1 · 10<sup>5</sup> Pa)
- Total oil content: Class 1 (max. oil concentration 0.01 mg/m<sup>3</sup> at 1 · 10<sup>5</sup> Pa)
- Max. pressure dew point: Class 4 but with reference conditions of +3 °C at 2 · 10<sup>5</sup> Pa

HEIDENHAIN offers the **DA 300 Compressed Air Unit** for purifying and conditioning compressed air. It consists of two filter stages (fine filter and activated carbon filter), automatic condensation trap, and a pressure regulator with pressure gauge. The compressed air introduced into the DA 300 must fulfill the requirements of the following quality classes as per ISO 8573-1 (Edition 1995):

- Max. particle size and density of solid contaminants:  
Class 4 (max. particle size 15 µm, max. particle density 8 mg/m<sup>3</sup>)
- Total oil content:  
Class 4 (oil content: 5 mg/m<sup>3</sup>)
- Max. pressure dew point:  
Not defined, Class 7

It can serve for up to 10 encoders.

At an operating pressure of 7 · 10<sup>5</sup> Pa, the compressed air conducted to the encoder by far exceeds the required purity.

Its pressure gauge and automatic pressure switch (available as accessories) effectively monitor the DA 300. The required air flow is 7 to 10 l/min per linear encoder; permissible pressure is in the range of 0.6 to 10<sup>5</sup> Pa. The compressed air must flow through connecting pieces with integrated throttle.

Specifications		DA 300
Mechanical design		System for cleaning and conditioning compressed air
Supported encoders		Max. 10 linear encoders (total 35 m measuring length) angle encoders or rotary encoders
Mechanical Design		<ul style="list-style-type: none"><li>• <b>Fine filter</b> of microfiber for dust, oil and water with particle sizes as fine as 0.1 µm</li><li>• <b>Activated carbon filter</b> absorbs oil vapor up to 0.003 mg/m<sup>3</sup></li><li>• <b>Pressure regulator</b> for adjusting the output pressure</li></ul>
Items supplied		DA 300 compressed air unit 25 m pressure tubing 3 T-joints 4 connecting pieces for linear encoders
Overpressure	Typical Max. Min.	7 · 10 <sup>5</sup> Pa 16 · 10 <sup>5</sup> Pa 3 · 10 <sup>5</sup> Pa If air pressure falls below 6 · 10 <sup>5</sup> Pa and the air is saturated with water vapor, an additional air drier must precede the DA 300.
Output pressure		1 · 10 <sup>5</sup> Pa (adjustable up to 3 · 10 <sup>5</sup> Pa)
Operating temperature		1.5 °C to 30 °C
Flow rate		Max. 367 l/min (± 22 Nm <sup>3</sup> /h)
Connections	Compressed air inlet Condensate trap Compressed air outlet	R 1/4" R 1/8" Quick disconnect for pressure tubing 6 × 1
Maintenance		<b>Filter exchange</b> <i>Up to 3 encoders connected:</i> every two years <i>Up to 10 encoders connected:</i> annually

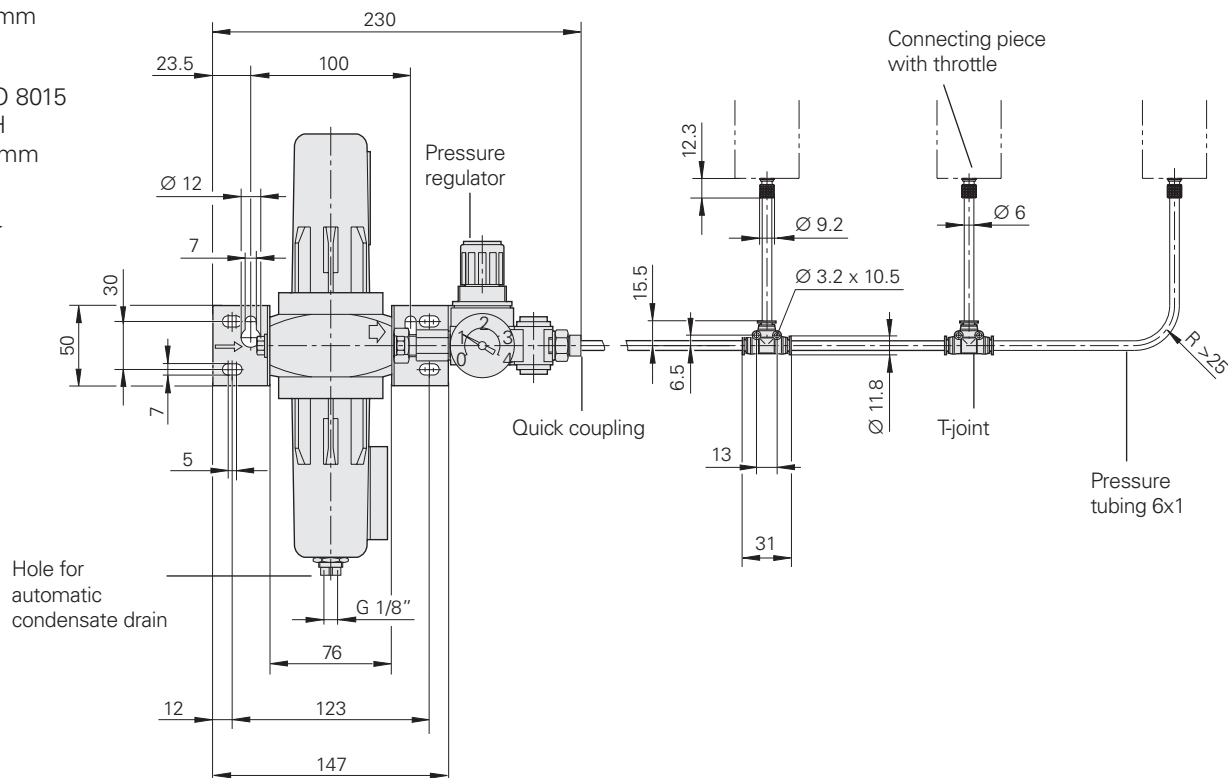
10<sup>5</sup> Pa ± 1 bar

Dimensions in mm

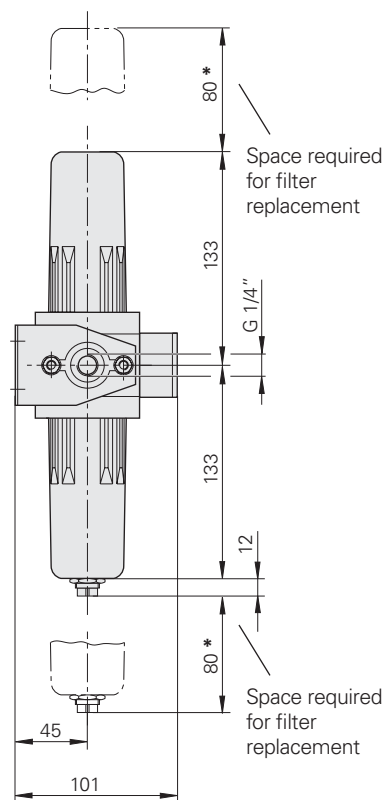


Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm:  $\pm 0.2$  mm

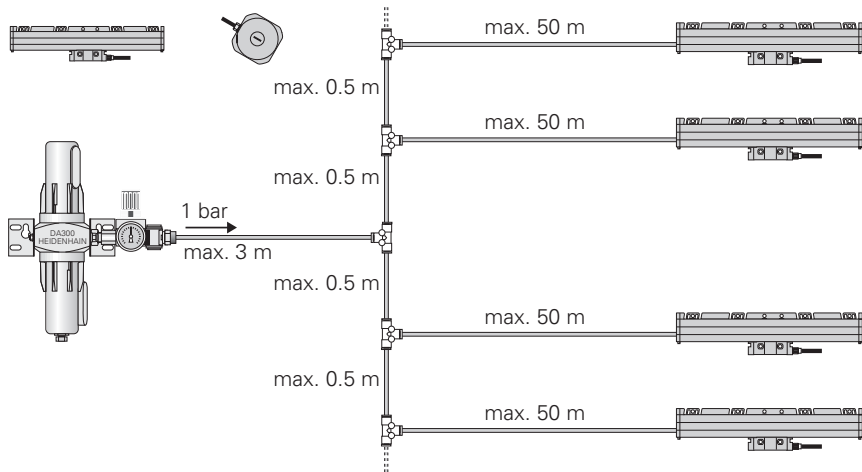
**A** →



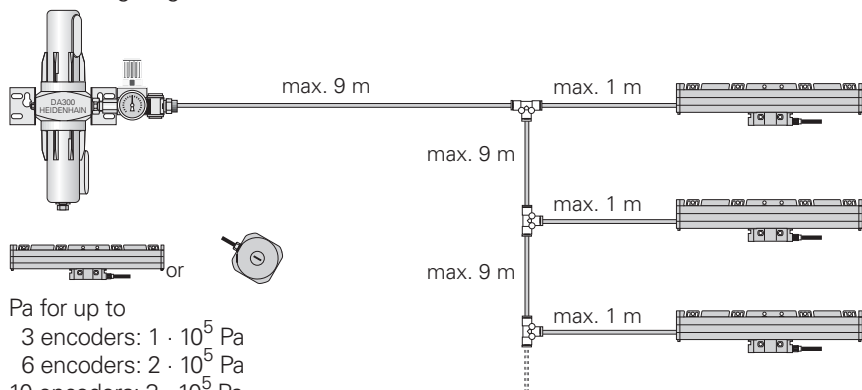
## View A



## Max. tubing lengths for parallel encoder connection

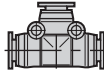
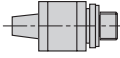
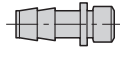

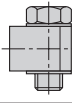
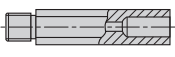
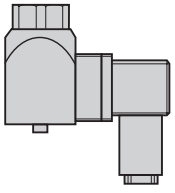


## Max. tubing lengths for serial encoder connection



Pa for up to  
3 encoders:  $1 \cdot 10^5$  Pa  
6 encoders:  $2 \cdot 10^5$  Pa  
10 encoders:  $3 \cdot 10^5$  Pa

# Accessories

<b>Pressure tubing 6 x 1</b> , length 25 m One piece included	ID 207881-09	
<b>T-joint</b> 4 pieces included	ID 310094-02	
<b>Connecting piece</b> for linear encoders with throttle and seal 3 pieces included	ID 226270-02	
<b>Connecting piece, short</b> for linear encoders with throttle and seal	ID 275239-xx	
<b>Connecting piece</b> for angle encoders with throttle and seal	ID 207835-04	
<b>M5 coupling joint</b> , swiveling, with seal	ID 207834-02	
<b>Spacer</b>	ID 230905-01	
<b>Pressure switch</b>	ID 345857-01	
<b>Fine filter element</b> (prefilter)	ID 337 147-01	
<b>Activated carbon filter element</b> (microfilter)	ID 337 148-01	

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### For more information

- Brochure: *Linear Encoders for Numerically Controlled Machine Tools*
- Brochure: *Angle Encoders with Integral Bearing*

