Differential pressure sensor DS 85, DS 85GS

Low pressure sensor with analog output, digital indication or switch output

- ❑ **Diaphragm element with differential transformator**
- ❑ **Lowest span 50 Pa = 0,5 mbar**
- ❑ **Analog output signal 0...10 V or 4...20 mA, two-wire-system**
- ❑ **3 digit LCD indication as option**
- ❑ **Switch output (open collector) at DS 85GS**
- ❑ **Supply voltage 24 Vdc ou 24 Vac, on two-wire-system 12...30 Vdc**

Description and operation

Safety indications

Attention! Read this instructions carefully, before you insert or connect this item. Only qualified personnel who is familar with installation, construction and operation of the equipment should work around these sensors.

Application

The differential pressure sensors DS 85 and DS 85GS serve for measuring low pressure of non-aggressive gases, particularly of air.

They are used mainly for e.g. in air conditioning systems for fan controlling, for pressure control of rooms or filter controlling.

Description

The differential pressure to be measured affects to both sides of a silicone diaphragm element, which is displaced against a measuring spring. The displacement of the diaphragm is converted into an electrical output signal by a differential transformator with suitable electronics.

A 3-digit LCD indicator is optionally available.

Beside of the analog output signal the model DS 85GS has an open-collector output switch, which is capable to force an external output relais with currents of max. 50 mA. Time delay and hysteresis can be set by two potentiometers in the front. The operation status (relay is activated) will be indicated by a LED.

Mounting

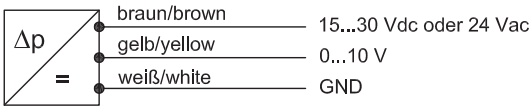
The differential pressure sensors are meant for wall-mounting. Mounting should be done vertically.

Pressure applying is recommended by plasic hose, inside diameter 4 mm.

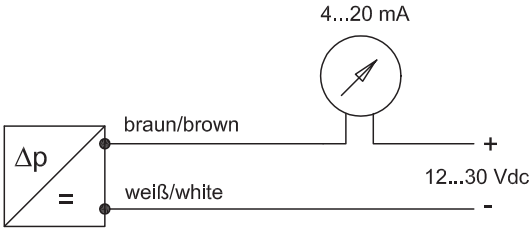
There is a 50 cm long colour coded cable for electrical wiring.

Electrical wiring

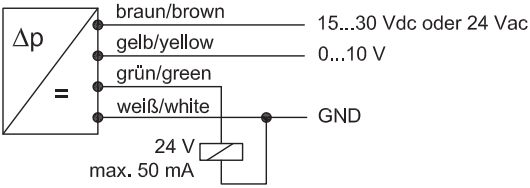
Electrical wiring is executed via 2-wire, 3-wire or 4-wire colour coded cable which is 50 cm long.



Connection diagram DS 85

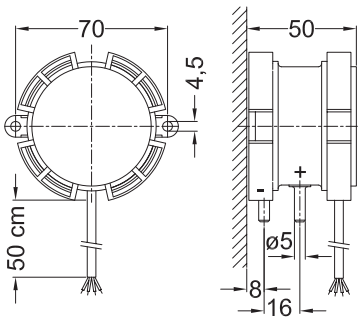


Connection diagram DS 85
Two-wire-system, 4...20 mA
Polarity at the sensor is arbitrary



Connection diagram DS 85GS

Dimensions



Time delay setting
Left hand stop: 0 s
Right hand stop: 7 s

Hysteresis setting
Left hand stop: 0,25%
Right hand stop: 5%

Settings, model DS 85GS

Technical data

Measuring ranges:	0.....50 Pa (0...0,5 mbar), 0.....100 Pa (0.....1 mbar) 0.....200 Pa (0.....2 mbar), 0.....500 Pa (0.....5 mbar) 0...1000 Pa (0...10 mbar), 0... 2000 Pa (0...20 mbar) 0...4000 Pa (0...40 mbar), 0... 6000 Pa (0...60 mbar)
Overpressure protection:	at least up to ten fold of the range, 0,2 bar from 2 mbar
Static pressure:	max. 0,2 bar
Pressure connections:	hose liners 5 mm ø
Electrical connections:	colour coded cable, 50 cm long, with 3 or 4 wires electronics protected against mispolarity
Case:	Ultramid, glas-fibre concentrated, black diameter 70 mm, depth 50 mm
Protection class:	IP65 acc. to EN 60529
Supply voltage:	24 Vac (15...30 V) ou 24 Vdc ± 15 %
Current cosumption:	app. 12 mA
Ambient température:	0...50 °C
Usage position:	vertical, position dependence by turning of 90°: app. 0,25 mbar
Weight:	app. 90 g
EMC:	Test according to EN 50081-2, 50082-2, CE-sign
Output signal:	0...10 V, max. load 2 mA, 3-wire connection 4...20 mA, two-wire-system, supply voltage 12...30 Vdc, polarity arbitrary
Digital indication:	3 digit LCD indicator, character height 9 mm, indication in pressure units
Switch output: (DS85GS)	open collector, 24 V, max. 50 mA nominal value potentiometer with scale 0...100 % hysteresis adjustable 0,25 % ... 5 % time delay adjustable 0...7 s Switching function min. or max. is fixed adjusted on dispatch

Influences limits	
Zero error:	± 0,75 %
Sum of linearity and hysteresis	
at ranges of 50 Pa and 100 Pa:	± 1 %
at ranges from 200 Pa:	± 0,5 %
Temperature drift, zero point:	± 0,3 % / 10 K
Temperature drift, span:	± 0,2 % / 10 K

Arthur Grillo GmbH · Am Sandbach 7 · 40878 Ratingen ·
Telefon +49 21 02 - 47 10 22 · Telefax +49 21 02 - 47 58 82
Internet: www.grillo-messgeraete.de · email: info@grillo-messgeraete.de