LR-Cal

DRUCK & TEMPERATUR LEITENBERGER



DPS 300

Multi Range Differential Pressure Transmitter for Gas and Compressed Air

Silicon Sensor

accuracy according to IEC 60770:
1% FSO

Differential pressure

from 0 ... 1.6 mbar up to 0 ... 1000 mbar

Output signals

3-wire: 0 ... 10 V, 0 ... 20 mA
(0 ... 5 V, 4 ... 20 mA switchable)

2-wire: 4 ... 20 mA (optional)

Special characteristics

- adjustable ranges
- high overpressure capability
- adjustable damping
- compact form

Optional versions

- LC-display, two-line
- automatic zero adjustment
- contacts
  (only in combination with display)
- square root extraction
  (only in combination with display)

The pressure transmitter **DPS 300** was developed for the differential pressure measuring for dry, non aggressive gases and compressed air and can be used for several HVAC applications

The **DPS 300** is a multi range transmitter with up to three adjustable ranges.

The device is equipped with a two-line LC display optionally and can be parameterized simply. Values, status of the contact and the unit are shown on the display.

Preferred applications are

HAVC applications
e.g. air conditioning, clean room technology, filter monitoring

Medical

Preferred areas of use are

Gas, compressed air

DRUCK & TEMPERATUR Leitenberger GmbH • Bahnhofstr. 33 • D-72138 Kirchentellinsfurt • GERMANY
Tel. +49 (0) 7121-90920-0 • Fax +49 (0) 7121-90920-99 • E-Mail: DT-Info@Leitenberger.de • www.druck-temperatur.de

Input pressure range						
Nominal pressure P_N [mbar] (differential, gauge pressure)	1.6	4	10	40	250	1000
Adjustable to [mbar]	1.0	2.5	6	25	60 / 160	400 / 600
Nominal pressure P_N symmetric (differential pressure) [mbar]	±1.6	±4	±10	±40	±250	±1000
Max. static pressure [mbar]	200	200	200	345	1000	3000

Output signal / Supply				
Standard	3-wire:		0 ... 10 V / 0 ... 20 mA	V_S = 19 ... 32 V_{DC}
		switchable on:	0 … 5 V / 4 … 20 mA	
			with automatic zero adjustment:	V_S = 24 ... 32 V_{DC}
Option	2-wire:		4 ... 20 mA	V_S = 11 ... 32 V_{DC}
			with automatic zero adjustment:	V_S = 24 ... 32 V_{DC}

Performance			
Accuracy	for $P_N \geq 6$ mbar: ≤ ± 1% FSO (IEC 60770)		for $P_N < 6$ mbar: ≤ ± 2% FSO (IEC 60770)
Permissible load	voltage 3-wire:	R_{min} = 10 kΩ	current 3-wire: 330 Ω
	current 2-wire:	$R_{max} = [(V_S - V_{S\,min}) / 0{,}02\ A]$ Ω	
Influence effects	supply:	0.05 % FSO / 10 V	load: 0.05 % FSO / kΩ
Response time T_{90}	< 100 msec; adjustable by potentiometer in the range of 0 msec up to 5000 msec		
Turn on time	500 msec		
Long term stability	≤ ± 0.5% FSO / year at reference conditions, for $P_N < 6$ mbar ≤ ± 0.2% FSO / year at reference conditions, for $P_N \geq 6$ mbar		
Measuring rate	12.5 Hz		

Contact (optional)		
	3-wire version	2-wire version
Number, form	2 x relay-output (NO/NC)	2 x PNP-open-collector-contact
switching current switching voltage switching capacity	max. 1 A max. 60 V_{DC}; max. 40 V_{AC} max. 60 W	max. 125 mA resistant; short-circuit-proof
Accuracy of switching points	≤ ± 2 % FSO	≤ ± 2 % FSO
Accuracy of repeatability	≤ ± 0.5 % FSO	≤ ± 0.5 % FSO
Switching frequency	5 Hz	5 Hz
Switching cycles	< 100 x 10^6	< 100 x 10^6

Thermal effects / Permissible temperatures			
Thermal error (offset and span)	≤ ± 0.5 % FSO / 10 K (typ.) for $P_N < 6$ mbar		≤ ± 0.3 % FSO / 10 K (typ.) for $P_N \geq 6$ mbar
in compensated range	0 ... 50 °C		
Permissible temperatures	medium: 0 … 50°C	electronics / environment: 0 … 50°C	storage: -10 … 70°C

Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic protection	EMC directive: 2014/30/EU emission and immunity according to EN 61326

Materials	
Pressure port	brass nickel plated
Housing	ABS
Sensor	ceramic, silicon, epoxy, RTV
Media wetted parts	pressure port, PVC / silicone tube, sensor

Display (optional)	
Performance	two-line LC-Display, visible range 32.5 x 22.5 mm; 5-digit 7-segment-main display, digit size 8 mm, range of indication: ±9999; 8-digit 14-segment-additional display, digit size 5 mm; 52-segment-bargraph; accuracy: 0.1% ±1 digit
Functions	- parameterisation of contacts - selection of units - selection of signal (linear, square root extraction) - cut-off-function (only with square root extraction) - min- / max-value - recalibration - autozeroing - factory setting

Miscellaneous		
Current consumption	2-wire: max. 22 mA (during automatic zero adjustment: +23 mA)	3-wire: max. 30 mA
Weight	approx. 200 g	
Ingress protection	IP 54	
Installation position	vertical [1]	
Operational life	100 million load cycles	

[1] The devices are calibrated in a vertical position with pressure port down. If this position is changed on installation there can be slight deviations in the zero point.

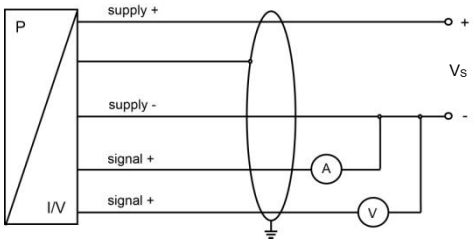
Mechanical connections (dimensions in mm)	
Standard	Ø 6.6 x 11 (for flex. tubes Ø 6)
Option	Ø 4.4 x 10 (for flex. tubes Ø 4)

Electrical connections (conductor cross-section)	
Without ferrule	1.5 mm²
With ferrule	1 mm²

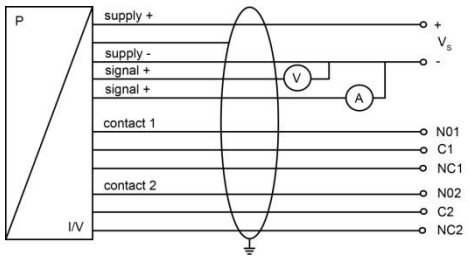
Pin configuration		
Standard	cable gland M16x1.5	
Electrical connections	3-wire	2-wire
supply + supply – signal + (only for 3-wire) contact 1 contact 2	VS + VS - Iout / Vout C1 / NO1 / NC1 C2 / NO2 / NC2	VS + VS - - S1 S2

Wiring diagram

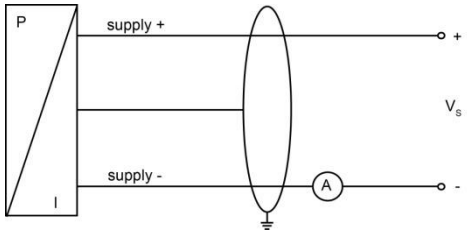
3-wire-system (current / voltage)



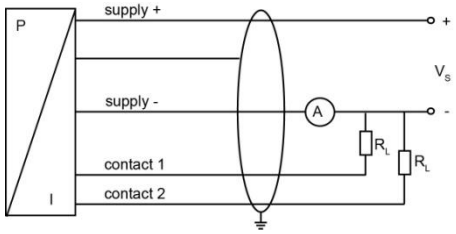
3-wire-system (current / voltage) with 2 contacts



2-wire-system (current

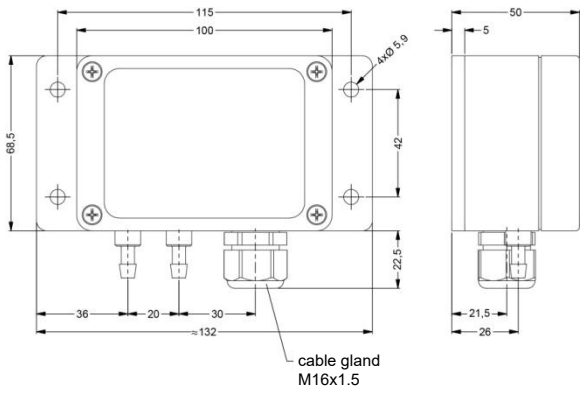


2-wire-system (current) with 2 contacts



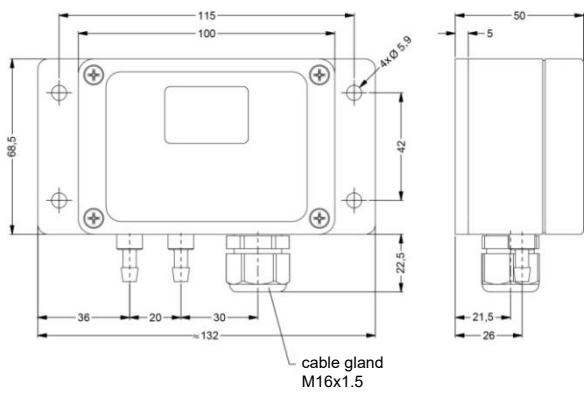
Dimension (in mm)

standard



DPS 300 without display

option



DPS 300 with display

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DRUCK & TEMPERATUR Leitenberger GmbH • Bahnhofstr. 33 • 72138 Kirchentellinsfurt • GERMANY
Tel. +49-7121-90920-0 • E-Mail: DT-Export@Leitenberger.de • **www.druck-temperatur.de**

DRUCK & TEMPERATUR
LEITENBERGER GMBH

Spezifikationsblatt - specification sheet

DPS 300

DPS 300 □□□-□□□□-□-□-□-□-□-□□□-□-□□□

Deutsch	English	Code	
Messgröße	**Pressure**		
Differenzdruck	differential pressure	815	
Relativdruck	gauge pressure	816	auf Anfrage consult
Eingang [mbar]	**Input [mbar]**		
1,6	1.6	0016	
4,0	4.0	0040	
10	10	0100	
40	40	0400	
250	250	2500	
1000	1000	1001	
-1,6 … 1,6	-1.6 … 1.6	S1K6	
-4 … 4	-4 … 4	S004	
-10 … 10	-10 … 10	S010	
-40 … 40	-40 … 40	S040	
-250 … 250	-250 … 250	S250	
-1000 … 1000	-1000 … 1000	S102	
Sondermessbereiche	customer	9999	auf Anfrage consult
Ausgang	**Output**		
3-Leiter: 0 … 10 V, 0 … 20 mA	3-wire: 0 … 10 V, 0 … 20 mA [1]	3Z	
2-Leiter: 4 … 20 mA	2-wire: 4 … 20 mA	1	
andere	customer	9	auf Anfrage consult
Schaltausgang	**contact**		
ohne	without	0	
2 Schaltausgänge	2 contacts [2]	B	
Genauigkeit	**Accuracy**		
$P_N \geq$ 6 mbar 1,0 % FS	$P_N \geq$ 6 mbar 1,0 % FS	8	
$P_N <$ 6 mbar 2,0 % FS	$P_N <$ 6 mbar 2,0 % FS	G	
Anzeige	**Display**		
ohne Anzeige	without display	0	
LC-Display	LC display	C	
andere	customer	9	auf Anfrage consult
Bedienfolie	**Front foil**		
LEITENBERGER	LEITENBERGER	9	
neutral	neutral	N	
Mechanischer Anschluss	**Mechanical connection**		
Ø6,6 x 11 (für flex. Schläuche Ø6)	Ø6.6 x 11 (for flex. tubes Ø6)	Y00	
Ø4,4 x 10 (für flex. Schläuche Ø4)	Ø4.4 x 10 (for flex. tubes Ø4)	Y02	
andere		999	auf Anfrage consult
Druckanschluss	**Pressure port**		
Messing vernickelt	brass nickel plated	M	
andere	customer	9	auf Anfrage consult
Sonderausführungen	**Special version**		
Standard	standard	000	
automatische Nullierung	automatic zeroing	600	
radiziertes Ausgangssignal	square-root extraction [2]	605	
andere	customer	999	auf Anfrage consult

Preise EXW Kirchentellinsfurt, ausschl. Verpackung / Prices ex factory Kirchentellinsfurt, without packing

[1] Ausgaangssignal umschaltbar auf 0 … 5 V / 4 … 20 mA — output switchable on 0 … 5 V / 4 … 20 mA
[2] nur in Verbindung mit Display — only in combination with display

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