



# DCT 533

## Industrial Pressure Transmitter with IO-Link Interface

Stainless Steel Sensor

accuracy according to IEC 61298-2:  
standard:  $\leq \pm 0.35 \% \text{ FSO}$   
option:  $\leq \pm 0.25 \% \text{ FSO}$

### Nominal pressure

from 0 ... 100 mbar up to 0 ... 400 bar

### Digital output signal

- IO-Link according to specification V 1.1
- data transfer 38.4 kbit/sec
- smart sensor profile

### Special characteristic

- ▶ perfect thermal behaviour
- ▶ excellent long term stability

### Optional versions

- ▶ pressure port  
G 1/2" flush up to 40 bar
- ▶ welded sensor
- ▶ customer specific versions

IO-Link is a digital interface for sensors and actuators, which is worldwide standardized by IEC 61131-9. IO-Link does not have a bus topology, but it is a powerful point-to-point communication, where the device can be parametrized, and the measured values transferred. The integration to the master is easy by using the IODD-file.

The sensor technology of the DCT 533 is the same as those of the proven pressure transmitter DMP 331 / DMP 333, whereby the DCT 533 is suitable for almost every industrial application, if medium is compatible with stainless steel 316L.

The modular concept of the pressure transmitter allows customized electrical or mechanical connections, so it is easy to adapt the DCT 533 to different conditions on-site.

### Preferred areas of use are



Plant and machine engineering



Energy industry



**IO-Link**

Input pressure range												
Nominal pressure gauge	[bar]	-1...0	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	-	0.40	0.60	1	1.6	2.5	4	6
Overpressure	[bar]	5	0.5	1	1	2	5	5	10	10	20	40
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50

Nominal pressure gauge / abs.	[bar]	10	16	25	40	60	100	160	250	400
Overpressure	[bar]	40	80	80	105	210	600	600	1000	1000
Burst pressure ≥	[bar]	50	120	120	210	420	1000	1000	1250	1250
Vacuum resistance	p <sub>N</sub> ≥ 1 bar: unlimited vacuum resistance      p <sub>N</sub> < 1 bar: on request									

Output signal / Supply	
Standard	IO-Link (measured value transmission)      V <sub>S</sub> = 18 ... 30 V <sub>DC</sub> SIO (switching output)
IO-Link	V 1.1 / slave / smart sensor profile
Data transfer	COM 2    38.4 kbit/sec
Mode	SIO / IO-Link
Standard	IEC 61131-9

Performance	
Accuracy <sup>1</sup>	standard    for p <sub>N</sub> ≥ 0.4 bar:    ≤ ± 0.35 % FSO for p <sub>N</sub> < 0.4 bar:    ≤ ± 0.50 % FSO option      for p <sub>N</sub> ≥ 0.4 bar:    ≤ ± 0.25 % FSO
Switching current (SIO-Mode)	max. 200 mA
Switching frequency	max. 200 Hz
Switching cycles	> 100 x 10 <sup>6</sup>
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Turn-on time	SIO mode: approx. 20 msec
Response time	SIO mode: < 4 msec
Measuring rate	400 Hz

<sup>1</sup> accuracy according to IEC 61298-2 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (offset and span)			
Nominal pressure p <sub>N</sub>	[bar]	-1 ... 0	< 0.40      ≥ 0.40
Tolerance band	[% FSO]	≤ ± 0.75	≤ ± 1      ≤ ± 0.75
in compensated range	[°C]	-20 ... 85	0 ... 70      -20 ... 85

Permissible temperatures	
Medium	-25 ... 125 °C
Electronics / environment	-25 ... 85 °C
Storage	-40 ... 85 °C

Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326

Mechanical stability	
Vibration	20 g RMS / 10 ... 2000 Hz      according to DIN EN 60068-2-6
Shock	500 g / 1 msec half sine      according to DIN EN 60068-2-27

Materials	
Pressure port / housing	stainless steel 1.4404 (316 L)
Seals (media wetted)	standard: FKM options: EPDM welded version <sup>2</sup> (for p <sub>N</sub> ≤ 40 bar)      others on request
Diaphragm	stainless steel 1.4435 (316 L)
Media wetted parts	pressure port, seal, diaphragm

<sup>2</sup> welded version only with pressure ports according to EN 837 and NPT, p<sub>N</sub> ≤ 40 bar

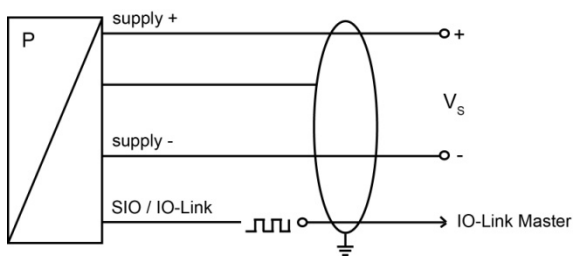
  

Miscellaneous	
Current consumption	max. 15 mA
Weight	approx. 140 g
Installation position	any <sup>3</sup>
Protection class	IP 67
Operational life	100 million load cycles
CE-conformity	EMC Directive: 2014/30/EU      Pressure Equipment Directive: 2014/68/EU (module A) <sup>4</sup>

<sup>3</sup> Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges p<sub>N</sub> ≤ 1 bar.

<sup>4</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.

### Wiring diagram

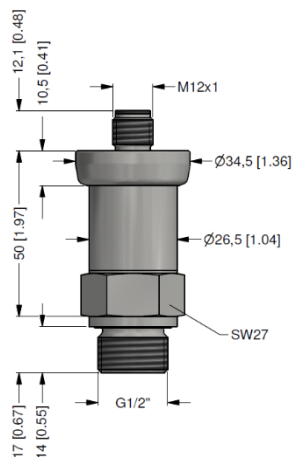


### Pin configuration

Electrical connection	M12x1 / metal (4-pin)	
Supply +	1	
Supply -	3	
SIO / IO Link	4	
Shield	housing	

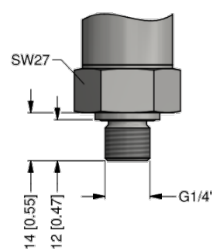
### Dimensions (mm / in)

#### standard

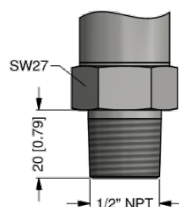


G1/2" DIN 3852  
with M12x1

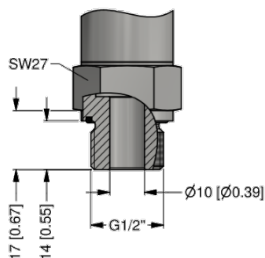
#### optionally



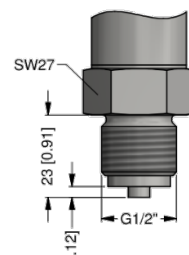
G1/4" DIN 3852



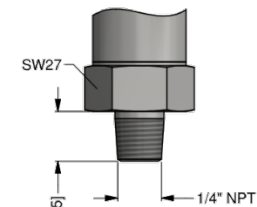
1/2" NPT



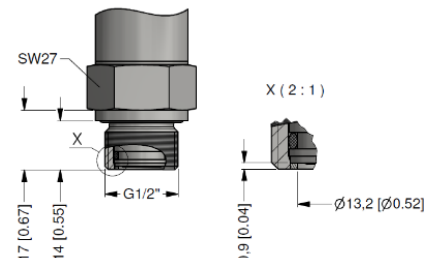
G1/2" DIN 3852 open port,  
 $p_N \leq 40$  bar



G1/2" EN 837



1/4" NPT



G1/2" DIN 3852  
with flush sensor,  $p_N \leq 40$  bar

⇒ metric threads and other versions on request

Ordering code DCT 533

DCT 533

□	□	□	-	□	□	□	□	-	□	-	□	-	□	□	□	-	□	□	□
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Pressure					
	gauge absolute <sup>1</sup>	D D	C C	2 3	
Input [bar]					
	0.10 <sup>1</sup>		1	0	0
	0.16 <sup>1</sup>		1	6	0
	0.25 <sup>1</sup>		2	5	0
	0.40		4	0	0
	0.60		6	0	0
	1.0		1	0	1
	1.6		1	6	0
	2.5		2	5	0
	4.0		4	0	1
	6.0		6	0	1
	10		1	0	2
	16		1	6	0
	25		2	5	0
	40		4	0	2
	60		6	0	2
	100		1	0	3
	160		1	6	0
	250		2	5	0
	400		4	0	3
	-1 ... 0	X	1	0	2
	customer		9	9	9
Output IO-Link / SIO		IO			
Accuracy					
standard for p <sub>N</sub> ≥ 0.4 bar	0.35 % FSO			3	
standard for p <sub>N</sub> < 0.4 bar	0.50 % FSO			5	
option for p <sub>N</sub> ≥ 0.4 bar	0.25 % FSO			2	
	customer			9	
Electrical connection					
male plug M12x1 (4-pin) / metal customer				M 9	1 9
Mechanical connection					
G1/2" DIN 3852			1	0	0
G1/2" EN 837			2	0	0
G1/4" DIN 3852			3	0	0
G1/4" EN 837			4	0	0
G1/2" DIN 3852 with flush sensor <sup>2</sup>			F	0	0
G1/2" DIN 3852 open pressure port <sup>2</sup>			H	0	0
1/2" NPT			N	0	0
1/4" NPT			N	4	0
	customer		9	9	9
Seal					
FKM				1	
EPDM				3	
without (welded version) <sup>3</sup>				2	
	customer			9	
Special version					
standard				0	0
customer				9	9

<sup>1</sup> absolute pressure possible from 0.4 bar

<sup>2</sup> not possible for nominal pressure  $p_N > 40$  bar

<sup>3</sup> welded version only with pressure ports according to EN 837 and NPT, possible for  $p_N \leq 40$  bar