DCT 571

Industrial Pressure Transmitter with RS485 Modbus RTU

Ceramic Sensor

accuracy according to IEC 60770:
standard: 0.35 % FSO
option: 0.25 % FSO

Nominal pressure

from 0 ... 100 mbar up to 0 ... 60 bar

Output signal

RS485 with Modbus RTU protocol

Special characteristic

- diaphragm ceramics 99.9 % Al_2O_3
- high long-term stability
- reset function

Optional versions

- different kinds of inch threads
- pressure port in PVDF or PP-HT for aggressive media on request

The pressure transmitter DCT 571 was developed for applications in plant and mechanical engineering or in laboratory technology, e.g. designed to measure pressures or levels of pasty, contaminated or aggressive media.

The self-developed pressure sensor made of 99.9% pure ceramic is characterized by a high overload capacity, as well as temperature and media resistance.

The integrated RS 485 interface and the MODBUS RTU protocol used ensure reliable and robust data transmission, which also works smoothly over long distances.

Preferred areas of use

- Plant and machine engineering
- Laboratory techniques
- Water
- Aggressive media

CE ROHS REACH Modbus®

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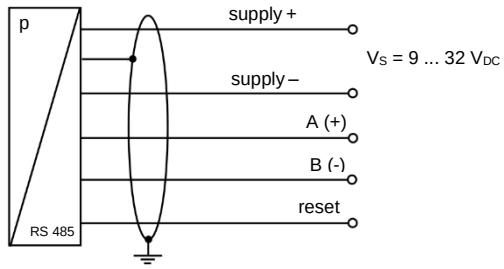
Input pressure range																
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60
Level	[mH_2O]	1	1.6	2.5	4	6	10	16	25	40	50	100	160	250	400	600
Overpressure	[bar]	3	4	5	5	5	7	7	12	12	20	20	20	40	70	70
Burst pressure ≥	[bar]	4	6	8	8	7	9	9	18	18	25	30	30	45	80	80
Permissible vacuum	[bar]	-0.2	-0.3	-0.5				-1 (unlimited vacuum resistance)								

Output signal		
Digital (pressure)	RS485 with Modbus RTU protocol	
Supply		
Direct current (DC)	V_S = 9 … 32 V_{DC}	
Performance		
Accuracy [1]	standard: option:	≤ ± 0.35 % FSO ≤ ± 0.25 % FSO
Long term stability	≤ ± 0,1 % FSO / year at reference conditions	
Measuring rate	500 Hz	
Delay time	500 msec	
[1] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)		
Thermal effects (offset and span)		
Tolerance band	≤ ± 1 % FSO	
In compensated range	-20 ... 80 °C	
Permissible temperatures [2]		
Medium	-40 ... 125 °C	
Electronics / environment	-40 ... 85 °C	
Storage	-40 ... 85 °C	
[2] for pressure port in PVDF or PP-HT the operation medium temperature is -30 … 60 °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	10 g RMS (25 ... 2000 Hz)	according to DIN EN 60068-2-6
Shock	100 g / 1 msec	according to DIN EN 60068-2-27
Materials		
Pressure port	standard: option for G3/4" flush: others on request	stainless steel 1.4404 (316 L) PVDF, PP-HT on request
Housing	stainless steel 1.4404 (316 L) others on request	
Seals (O-rings)	standard: options: others on request	FKM EPDM FFKM
Diaphragm	ceramics Al_2O_3 99.9 % others on request	
Media wetted parts	pressure port, seals, diaphragm	
Miscellaneous		
Ingress protection	IP 67	
Installation position	any	
Current consumption	max. 10 mA	
Weight	approx. 180 g	
Operational life	100 million load cycles	
CE-conformity	EMC Directive: 2014/30/EU	

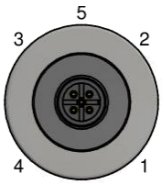
Wiring diagram

Modbus RTU



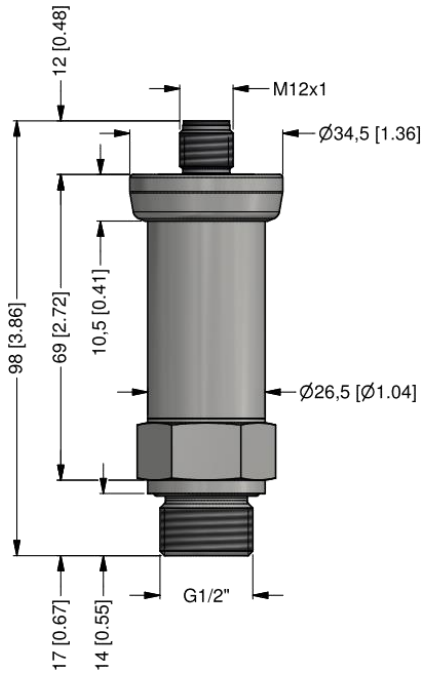
Pin configuration / electrical connection

Electrical connection	M12x1, metal (5-pin)
Supply +	1
Supply –	3
A (+)	2
B (–)	4
Reset	5
Shield	plug housing



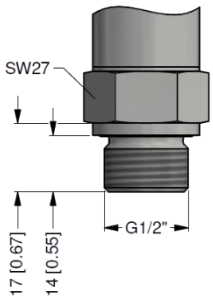
Dimensions / mechanical connection (mm / in)

standard

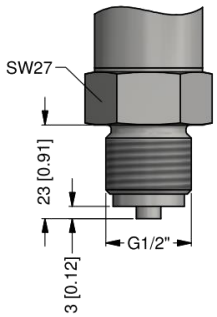


G1/2" DIN 3852
with male plug M12x1

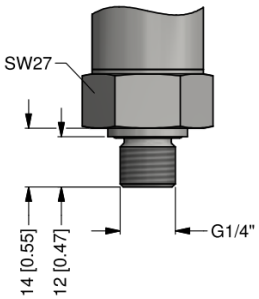
options



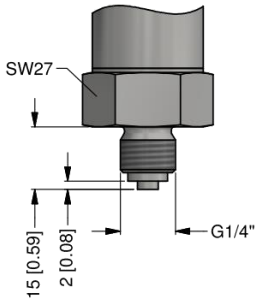
G1/2" DIN 3852



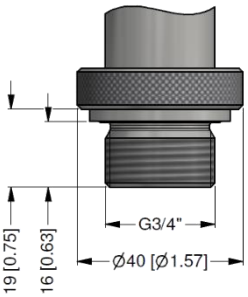
G1/2" EN 837



G1/4" DIN 3852



G1/4" EN 837



G3/4" DIN 3852 flush

⇨ **metric threads and other versions on request**

Configuration Modbus RTU					
Standard configuration	001	-	1	-	1
Address					
Address	001				
	…				
	247				
Baud Rate					
4800 Bd			0		
9600 Bd			1		
19200 Bd			2		
38400 Bd			3		
Parity					
None					0
Odd					1
Even					2

Configuration code (to specify with order)		-		-	

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BD|SENSORS
pressure measurement

Ordering code DCT 571

DCT 571 □□□-□□□□-□□-□-□□□-□□□-□-□-□-□□□

Pressure			
	gauge in bar	285	
	gauge in mH_2O	286	
Input	**[mH_2O]**	**[bar]**	
	1.0	0.1	1000
	1.6	0.16	1600
	2.5	0.25	2500
	4.0	0.40	4000
	6.0	0.60	6000
	10	1.0	1001
	16	1.6	1601
	25	2.5	2501
	40	4.0	4001
	60	6.0	6001
	100	10	1002
	160	16	1602
	250	25	2502
	400	40	4002
	600	60	6002
	customer		9999 consult
Output			
	RS485 Modbus RTU		L5
Accuracy			
standard	0.35 % FSO		3
option	0.25 % FSO		2
	customer		9 consult
Electrical connection			
	male plug M12x1 (5-pin) / metal		N11
	customer		999 consult
Mechanical connection [1]			
	G1/2" DIN 3852		100
	G1/2" EN 837		200
	G1/4" DIN 3852		300
	G1/4" EN 837		400
	G3/4" with flush sensor		K00
	customer		999 consult
Seal			
	FKM		1
	EPDM		3
	FFKM		7
	customer		9 consult
Pressure port			
	stainless steel 1.4404 (316L)		1
	PVDF [2]		B consult
	PP-HT [2]		R consult
	customer		9 consult
Diaphragm			
	ceramics Al_2O_3 99,9 %		C
	customer		9 consult
Special version			
	standard		000
	customer		999 consult

[1] metric threads and others on request

[2] only for mechanical connection G3/4"; for pressure port in PVDF or PP-HT the operation medium temperature is -30 … 60 °C

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