



DCT 571

Industrial Pressure Transmitter with RS485 Modbus RTU

Ceramic Sensor

accuracy according to IEC 61298-2:
standard: 0.35 % FSO
option: 0.25 % FSO

Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 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

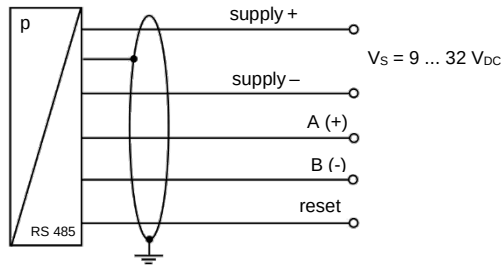


Modbus®

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
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	50	100	160	250	400
Overpressure	[bar]	3	4	5	5	5	7	7	12	12	20	20	20	40	70
Burst pressure ≥	[bar]	4	6	8	8	7	9	9	18	18	25	30	30	45	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: ≤ ± 0.35 % FSO option: ≤ ± 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 61298-2 – 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 the operation medium temperature is -30 ... 60 °C and in PP-HT 0 ... 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		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		standard: option for G3/4" flush: others on request						stainless steel 1.4404 (316 L) PVDF (p _{max} = 20 bar), PP-HT (p _{max} = 10 bar) 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 ₂ O 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													

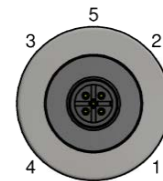
Wiring diagram

Modbus RTU



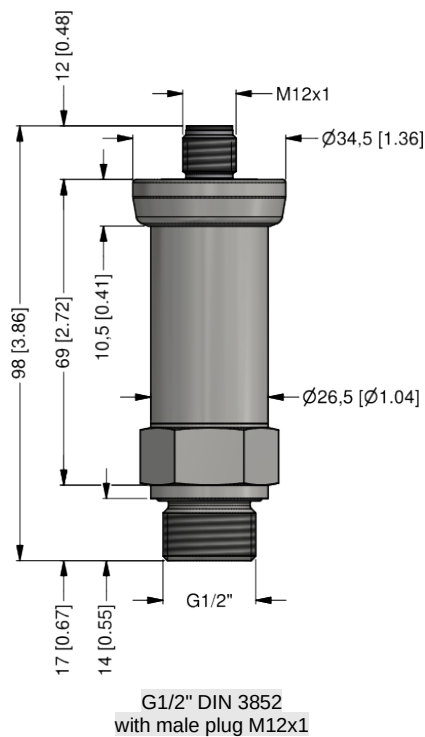
Pin configuration / electrical connection

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

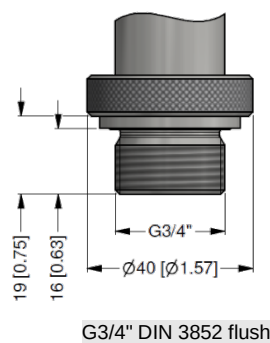
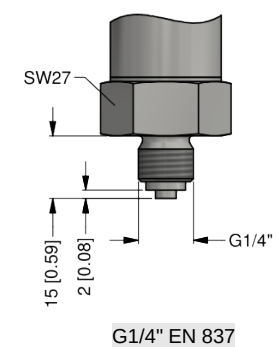
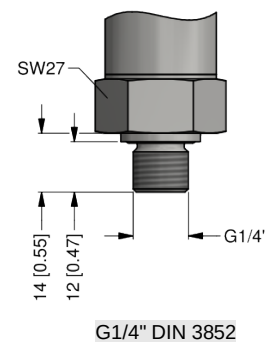
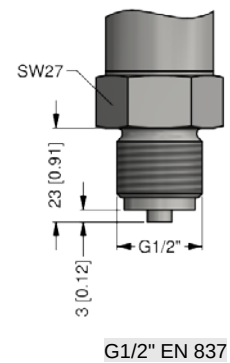
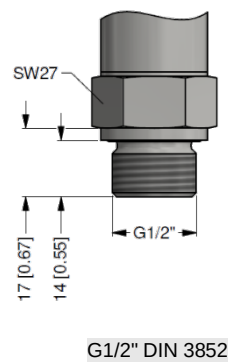


Dimensions / mechanical connection (mm / in)

standard



options



⇒ metric threads and other versions on request

DCT 571

Industrial Pressure Transmitter with RS485 Modbus RTU

Technical Data

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)					
		-		-	

Ordering code DCT 571

DCT 571

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Pressure									
gauge in bar		2	8	5					
gauge in mH ₂ O		2	8	6					
Input									
	[mH ₂ O]	[bar]							
	1.0	0.1	1	0	0	0			
	1.6	0.16	1	6	0	0			
	2.5	0.25	2	5	0	0			
	4.0	0.40	4	0	0	0			
	6.0	0.60	6	0	0	0			
	10	1.0	1	0	0	1			
	16	1.6	1	6	0	1			
	25	2.5	2	5	0	1			
	40	4.0	4	0	0	1			
	60	6.0	6	0	0	1			
	100	10	1	0	0	2			
	160	16	1	6	0	2			
	250	25	2	5	0	2			
	400	40	4	0	0	2			
customer			9	9	9	9			consult
Output									
RS485 Modbus RTU					L	5			
Accuracy									
standard		0.35 % FSO				3			
option		0.25 % FSO				2			
customer						9			consult
Electrical connection									
male plug M12x1 (5-pin) / metal					N	1	1		
customer					9	9	9		consult
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
G3/4" with flush sensor							K	0	0
customer							9	9	9
									consult
Seal									
FKM							1		
EPDM							3		
FFKM							7		
customer							9		consult
Pressure port									
stainless steel 1.4404 (316L)							1		
PVDF (p _{max} = 20 bar) ²							B		
PP-HT (p _{max} = 10 bar) ²							R		
customer							9		consult
Diaphragm									
ceramics Al ₂ O ₃ 99,9 %							C		
customer							9		consult
Special version									
standard							0	0	0
customer							9	9	9
									consult

¹ metric threads and others on request

² only for mechanical connection G3/4"; for pressure port in PVDF the operation medium temperature is -30 ... 60 °C and in PP-HT 0 ... 60 °C