SCHNEIDER
MESSTECHNIK

IDCT 561

Industrial Pressure Transmitter with RS485 Modbus RTU

Ceramic Sensor

accuracy according to IEC 60770:
0.5 % FSO

Nominal pressure

from 0 ... 600 mbar up to 0 ... 600 b

Output signal

RS485 with Modbus RTU protocol

Special characteristic

- good thermal behaviour
- good long term stability
- reset function

Optional versions

- pressure port G 1/2" open port
  PVDF for aggressive media
  (up to 60 bar)
- oxygen application

The IDCT 561 with RS485 interface uses the communication protocol Modbus RTU which has found the way in industrial communication as an open protocol. The Modbus protocol is based on a master slave architecture with which up to 247 slaves can be questioned by a master – the data will transfer in binary form.

The sensor technology of the IDCT 561 is the same as those of the proven pressure transmitter DMK 331, whereby the IDCT 561 is suitable for pasty, polluted and aggressive media as well as for low-pressure oxygen applications.

The modular concept of the pressure transmitter allows customized electrical or mechanical connections, so it is easy to adapt the IDCT 561 to different conditions on-site.

Preferred areas of use are

- Plant and machine engineering
- Environmental engineering
  (water - sewage - recycling)
- Medical technology

CE RoHS REACH c UL us LISTED Modbus®

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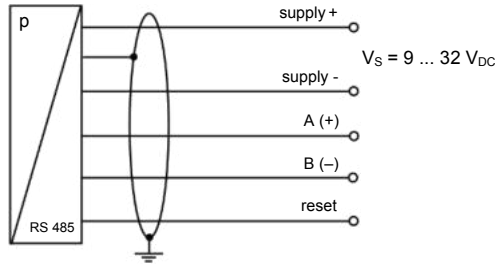
Input pressure range [1]									
Nominal pressure gauge [bar]	-1 … 0	0.6	1	1.6	2.5	4	6	10	16
Nominal pressure absolute [bar]	-	0.6	1	1.6	2.5	4	6	10	16
Overpressure [bar]	3	2	3	5	5	12	12	20	50
Burst pressure ≥ [bar]	4	4	4	7	7.5	15	18	30	70

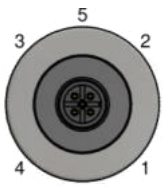
Nominal pressure gauge / absolute [bar]	25	40	60	100	160	250	400	600
Overpressure [bar]	50	120	120	200	400	400	650	800
Burst pressure ≥ [bar]	75	150	180	300	500	750	1000	1100
Vacuum resistance	unlimited vacuum resistance							

[1] PVDF pressure port possible for nominal pressure ranges up to 60 bar

Output signal			
Digital (pressure)	RS485 with Modbus RTU protocol		
Supply			
Direct current	V_S = 9 … 32 V_{DC}		
Performance			
Accuracy [2]	≤ ± 0.5 % FSO		
Long term stability	≤ ± 0.3 % FSO / year at reference conditions		
Measuring rate	500 Hz		
Delay time	500 msec		
[2] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)			
Thermal effects (offset and span) / Permissible temperatures			
Thermal error	≤ ± 0.2 % FSO / 10 K		
In compensated range	0 ... 85 °C		
Permissible temperatures [3]	medium: -25 ... 125 °C	electronics / environment: -25 ... 85 °C	storage: -40 ... 80 °C
[3] for pressure port in PVDF the medium temperature is -25 … 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	500 g / 1 msec	according to DIN EN 60068-2-27	
Materials			
Pressure port	standard: stainless steel 1.4404 (316 L) optional for G1/2" open port with nominal pressure range up to 60 bar: PVDF		others on request
Housing	stainless steel 1.4404 (316L)		
Seals	standard: FKM options: EPDM (for p_N ≤ 160 bar)		others on request
Diaphragm	ceramic Al_2O_3 96 %		
Media wetted parts	pressure port, seal, diaphragm		
Miscellaneous			
Option oxygen application	for p_N ≤ 25 bar: O-ring in FKM Vi 567 (with BAM-approval); permissible maximum values are 25 bar / 150° C		
Current consumption	max. 10 mA		
Weight	approx. 210 g		
Installation position	any		
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) [4]	
[4] This directive is only valid for devices with maximum permissible overpressure > 200 bar			

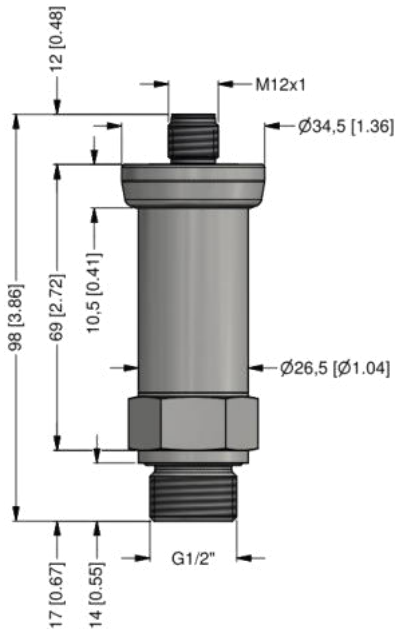
Wiring diagram



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

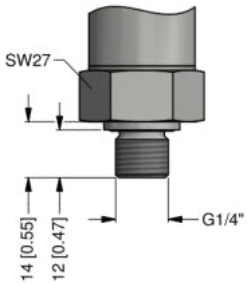
Dimensions (mm / in)

standard

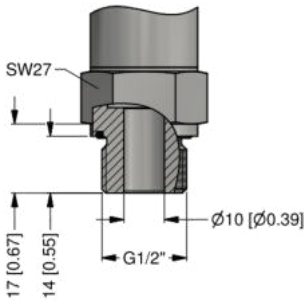


G1/2" DIN 3852
with M12x1

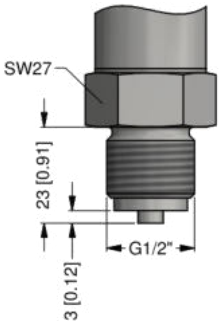
options



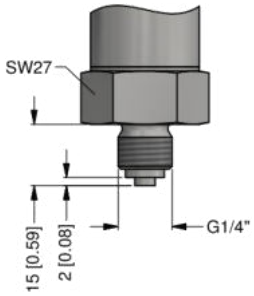
G1/4" DIN 3852



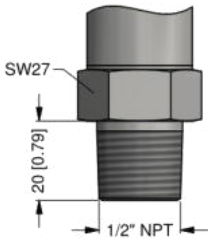
G1/2" DIN 3852
open port



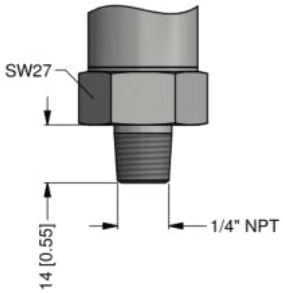
G1/2" EN 837



G1/4" EN 837



1/2" NPT



1/4" NPT

⇨ **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)		-		-	

Ordering code IDCT 561

IDCT 561 □□□-□□□□-□□-□-□□□-□□□-□-□-□-□□□

Pressure																									
gauge	2	5	0																						
absolute	2	5	1																						
Input	**[bar]**																								
0.6				6	0	0	0																		
1.0				1	0	0	1																		
1.6				1	6	0	1																		
2.5				2	5	0	1																		
4.0				4	0	0	1																		
6.0				6	0	0	1																		
10				1	0	0	2																		
16				1	6	0	2																		
25				2	5	0	2																		
40				4	0	0	2																		
60				6	0	0	2																		
100				1	0	0	3																		
160				1	6	0	3																		
250				2	5	0	3																		
400				4	0	0	3																		
600				6	0	0	3																		
-1 … 0				X	1	0	2																		
customer				9	9	9	9																		consult
Output																									
RS485 Modbus RTU								L	5																
Accuracy																									
0.5 % FSO										5															
customer										9															consult
Electrical connection																									
male plug M12x1 (5-pin) / metal												N	1	1											
customer												9	9	9											consult
Mechanical connection [1]																									
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 open pressure port															H	0	0								
1/2" NPT															N	0	0								
1/4" NPT															N	4	0								
customer															9	9	9								consult
Seal																									
FKM																		1							
EPDM [2]																		3							
customer																		9							consult
Pressure port																									
stainless steel 1.4404 (316L)																			1						
PVDF [3]																			B						
customer																			9						consult
Diaphragm																									
ceramics Al_2O_3 96%																				2					
customer																				9					consult
Special version																									
standard																					0	0	0		
oxygen application [4]																					0	0	7		
customer																					9	9	9		consult

[1] metric threads and others on request

[2] possible for nominal pressure range $p_N \leq 160$ bar

[3] PVDF only with G1/2" DIN 3852 open pressure port (up to 60 bar); permissible medium temperature: -25 … 60 °C

[4] oxygen application with FKM-seal up to 25 bar

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