

DCT 532

Industrial Pressure Transmitter with i²C interface

Stainless Steel Sensor

Accuracy according to IEC 60770:
standard: $\leq \pm 0.35\%$ FSO
option: $\leq \pm 0.25\%$ FSO



Nominal pressure

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

Digital output signal

- i²C
- bus frequency max. 400 kHz
- configuration of data format
- interrupt signal

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

Contrary to the industrial pressure transmitter with analogue signal, the DCT 532 has a digital i²C-interface. i²C has a master-slave topology, whereby you can use up to 127 devices at one master. In addition to the typical settings, as slave address, data format, etc., it is possible to do special parametrisation for pressure unit and more.

Due to the usage of high quality materials and components, the DCT 532 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 pressure transmitter to different conditions on-site.

Preferred areas of use are



Plant and machine engineering

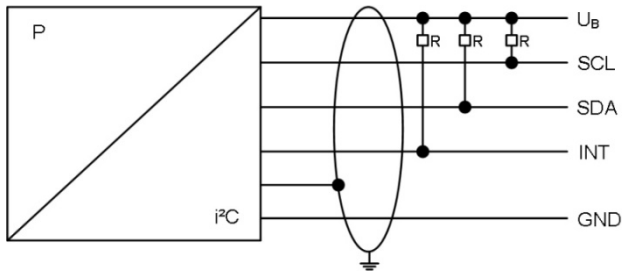


Energy industry



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 _N ≥ 1 bar: unlimited vacuum resistance P _N < 1 bar: on request											
Output signal / Supply													
i ² C		V _S = 3.5 ... 5.5 V _{DC}											
Performance													
Accuracy ¹		standard for P _N ≥ 0.4 bar: ≤ ± 0.35 % FSO standard for P _N < 0.4 bar: ≤ ± 0.5 % FSO option for P _N ≥ 0.4 bar: ≤ ± 0.25 % FSO											
Max. I/O current		10 mA											
Long term stability		≤ ± 0.1 % FSO / year at reference conditions											
Response time		1.5 msec + transmission time (depending on bus frequency)											
Measuring rate		500 Hz											
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)													
Thermal effects (Offset and Span)													
Nominal pressure P _N	[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													
Permissible temperatures		medium: -25 ... 125 °C electronics / environment: -25 ... 85 °C storage: -40 ... 85 °C											
Electrical protection													
Short-circuit protection		permanent											
Reverse polarity protection		by exchanged supply connections no damage, but also no function by exchanged communication with signal lines it can come according to constellation to damages.											
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 / Housing		stainless steel 1.4404 (316 L)											
Seals (media wetted)		standard: FKM options: EPDM welded version ² (for P _N ≤ 40 bar) others on request											
Diaphragm		stainless steel 1.4435 (316 L)											
Media wetted parts		pressure port, seal, diaphragm											
² welded version only with pressure ports according to EN 837, P _N ≤ 40 bar													
Miscellaneous													
Current consumption		< 15 mA											
Weight		approx. 140 g											
Ingress protection		IP 67 / IP 68 for cable with ventilation tube											
Installation position		any ³											
Operational life		100 million load cycles											
CE-conformity		EMC Directive: 2014/30/EU					Pressure Equipment Directive: 2014/68/EU (module A) ⁴						
³ 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 _N ≤ 1 bar.													
⁴ This directive is only valid for devices with maximum permissible overpressure > 200 bar													

Wiring diagrams

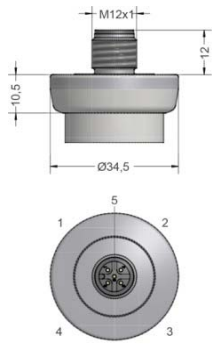


Pin configuration

Electrical connection	M12x1 / metal (5-pin)	Binder 723 (5-pin)	cable colour (IEC 60757)
Supply +	1	1	wh (white)
Supply -	3	3	bn (brown)
SDA	2	2	ye (yellow)
SCL	4	4	gn (green)
INT	5	5	pk (pink)
Shield	housing	housing	gnye (green-yellow)

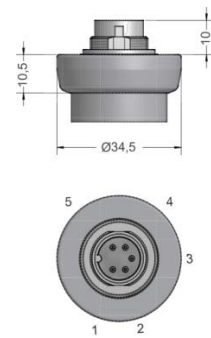
Electrical connections (dimensions in mm)

Standard

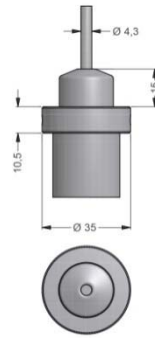


M12x1 5-pin (IP 67)

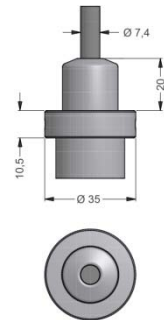
Optional



Binder Serie 723 5-pin (IP 67)



cable outlet with PVC cable (IP 67) ⁵ (on request)



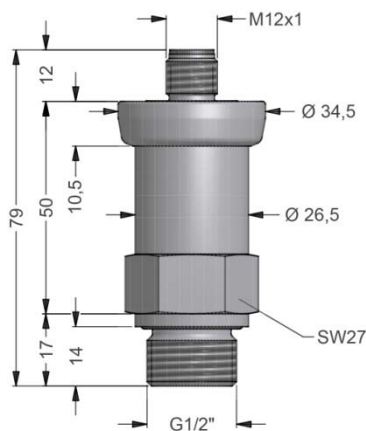
cable outlet, cable with ventilation tube (IP 68) ⁶ (on request)

⁵ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)

⁶ different cable types and lengths available, permissible temperature depends on kind of cable

Mechanical connections (dimensions in mm)

standard



G1/2" DIN 3852 with ISO 4400

Mechanical connections (dimensions in mm)

option

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

Configuration i ² C-interface																	
Stand configuration	0	5	0	-	0	-	0	-	0	-	0	-	0	0	0	1	
Slave address																	
address	0	0	1														
	1	2	7														
Type of result register																	
32bit IEEE float					0												
16bit Integer					1												
Byte order of values																	
Low byte first								0									
High byte first								1									
Mode of result register																	
Value									0								
Percent of nominal									1								
Restore of address pointer																	
No restore										0							
To last set address on next start										1							
Digital meaning																	
Count of result													0	0	0	0	1
														...			
													1	0	0	0	0
Configuration code (has to be defined with the order)					-	-	-	-	-	-							

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Ordering code DCT 532

DCT 532

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Pressure		gauge	D	C	0																	
	absolute		D	C	1																	
Input		[bar]																				
	0.1	1				1	0	0	0													
	0.16	1				1	6	0	0													
	0.25	1				2	5	0	0													
	0.4					4	0	0	0													
	0.6					6	0	0	0													
	1					1	0	0	1													
	1.6					1	6	0	1													
	2.5					2	5	0	1													
	4					4	0	0	1													
	6					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													
	-1 ... 0					X	1	0	2													
	customer					9	9	9	9													consult
Output		i°C								IC												
Accuracy																						
	standard for $P_N \geq 0.4$ bar	0.35 %								3												
	standard for $P_N < 0.4$ bar	0.5 %								5												
	option for $P_N \geq 0.4$ bar	0.25 %								2												
		0.1 %								1												consult
	customer									9												consult
Electrical connection																						
	Male plug M12x1 (5-pin) / metal									N	1	7										
	Male plug Binder series 723 (5-pin)									2	0	7										
	Cable outlet with PVC cable ²									T	A	0										
	Cable outlet (IP68) ³									T	R	0										
	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										
	G1/2" DIN 3852 with flush sensor ⁴									F	0	0										
	G1/2" DIN 3852 open pressure port ⁴									H	0	0										
	1/2" NPT									N	0	0										
	1/4" NPT									N	4	0										
	customer									9	9	9										consult
Seals																						
	FKM									1												
	EPDM									3												
	without (welded version) ⁵									2												
	customer									9												consult
Special version																						
	standard																					
	customer																					consult

¹ absolute pressure possible from 0.4 bar

² standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C), others on request

³ cable with ventilation tube (code TR0 = PVC cable), different cable types and lengths available, price without cable

⁴ not possible for nominal pressure $P_N > 40$ bar

⁵ welded version only with pressure ports according to EN 837, possible for $P_N \leq 40$ bar

