8xPDIF-S

8x channel differential pressure sensor with CAN bus

SN: P#########

Texense sensors are designed for data logging. Should the users want to include this sensor in a closed loop system, they must undertake total responsibility from doing so.

| Measurement features		
Available ranges	±50 to ±1000	mBar
	±0.7 to ±15	PSI
Sensitive Element	Piezo resistive Cells	
Proof pressure(1)	≤ ±350mbar range	1400
	±1000mbar range	3000
Calibrator	Mensor CPC 4000	
Accuracy	±0.5	% FS
Non linearity / Hysteresis	±0.7	% FS
Offset Drift	±0.5	% FS
Sensitivity drift	0.5	%
Sampling Frequency	200	Hz
CAN features		
CAN bus standard	2.0A or 2.0B	
Baudrate	125K to 1M	bps
Output data frequency	1Hz to 200Hz, or on trig	
Electrical features		
Supply Voltage	6 to 16	V
Supply Current	30	mA
Mechanical features		
Dimensions	See §Mechanical drawing	
Material	Aluminum	
Weight	80	g
Internal gasket	EPDM 70sh	
Environment		
Protection	IP64	
Vibration test	20Gpp 5'	
Shock	500	G
Operating Temp	+5 to +85	°C
Storage Temp	-40 to +125	°C
Humidity	This sensor withstands high humidity. Avoid water entering in the tube as well as condensation, it may block the pressure.	

Note: for the Proof pressure rows the unit "mbar" spans both range rows.

(1) Do not blow into the tubes with the mouth or a compressed air line

Date		Operator	
Customer			
Order			
Product Ref	8xPDIF-S-#x#-###-#		
SW version	V#.##		

Sensor Readings			
Channel	at mBar	at 0 mBar	at mBar
1			
2			
3			
4			
5			
6			
7			
8			

Software setup		
CAN	☒2.0A ☐2.0B	-
CAN output	☒STD ☐MUX	-
Baudrate	1M	bps
Frequency	10	Hz
Rx trig ID	0x7F0	-
Tx1 ID	0x3F0	-
Tx2 ID	0x3F4	-
Unit	☒0.1mBar/bit ☐1mPSI/bit	-

Factory setup		
Autozero	☒ Enable	☐ Disable
CAN 120Ω termination resistor	☐Connected	☒Not connected
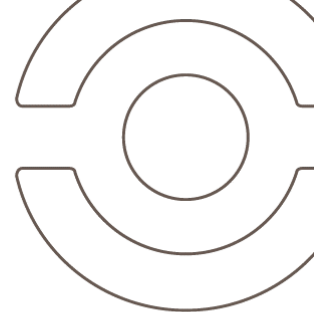
Mechanical drawing

Manifold version	Mechanical drawing
1x common port ("S-1" ordering code)	
2x common port ("S-2" ordering code)	
8x common port ("S-8" ordering code)	

Pinout

Cable		
5x26AWG FEP tinned copper braided cable 250V 200°C Length: 1000mm Tubing: 50mm Connector: on request		
Color	Function	Pin
Red	Supply	-
Black	0V	-
White	CAN Low	-
Green	CAN High	-
Yellow	Do not connect and isolate	-
Braid	-	

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CAN data
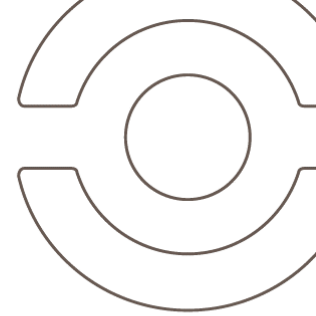
Data output

The pressure values are provided in 16bit signed integer format. Resolution is 0.1mbar/bit or 1mPSI/bit, depending on configured unit.

Standard CAN (interframe spacing 2ms)

Frame #1   (default Tx1 Frame ID: 0x03F0)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x03F0	Channel 1 MSB	Channel 1 LSB	Channel 2 MSB	Channel 2 LSB	Channel 3 MSB	Channel 3 LSB	Channel 4 MSB	Channel 4 LSB
	Pressure 1		Pressure 2		Pressure 3		Pressure 4	

Frame #2   (default Tx2 Frame ID: 0x03F4)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x03F4	Channel 5 MSB	Channel 5 LSB	Channel 6 MSB	Channel 6 LSB	Channel 7 MSB	Channel 7 LSB	Channel 8 MSB	Channel 8 LSB
	Pressure 5		Pressure 6		Pressure 7		Pressure 8	

Multiplexed CAN Data output (interframe spacing 1.5ms)

Frame #1   (default Tx1 Frame ID: 0x03F0, default Sensor ID: 0xF4)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x03F0	Sensor ID	Multiplexed Msg ID = 0	Channel1 MSB	Channel1 LSB	Channel2 MSB	Channel2 LSB	Channel3 MSB	Channel3 LSB
			Pressure 1		Pressure 2		Pressure 3	

Frame #2   (default Tx1 Frame ID: 0x03F0, default Sensor ID: 0xF4)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x03F0	Sensor ID	Multiplexed Msg ID = 1	Channel4 MSB	Channel4 LSB	Channel5 MSB	Channel5 LSB	Channel6 MSB	Channel6 LSB
			Pressure 4		Pressure 5		Pressure 6	

Frame #3   (default Tx1 Frame ID: 0x03F0, default Sensor ID: 0xF4)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x03F0	Sensor ID	Multiplexed Msg ID = 2	Channel7 MSB	Channel7 LSB	Channel8 MSB	Channel8 LSB	Signed char	0
			Pressure 7		Pressure 8		Internal Temp. (°C)	

Data input

Trig frame

Rx Frame (default Rx Frame ID: 0x07F0)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x07F0	Sensor ID	Multiplexed Msg ID	Don't Care					
	ID / 0xFF (all sensors)	0,1,2 / 0xFF(all Msg)						

Auto-zero command (optional)

Command input frame

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x07F1	0xFF	-	-	-	-	-	-	0x01

Acknowledge output frame

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x07F3	0xFF	Serial Number				0x00	0x00	0x01

This command can be used to re-zero all channels. Each time the sensor will receive the above CAN frame, the autozero function will be launched (except during first second after power-on). When autozero function is launched, a "customer offset" is set up and added for each channel on top of factory calibration. Those "Customer offsets" will be stored in volatile memory. Therefore, they will be lost when switching OFF the sensor and they will be initialized to 0 when switching ON the sensor.

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3/4   8xPDIF-S – Spec V10

Changing parameters

> Must be setup according to Texense CAN protocol, or by using the tWist® software (texense Windows software tool) with the tSIB (texense Smart Interface Box).

N°	Parameter	Raw values	Values	Comments
0x00	Baudrate	0x00	CAN2.0**A** 1Mbps	Default
		0x01	CAN2.0**A** 500 Kbps	
		0x02	CAN2.0**A** 250 Kbps	
		0x03	CAN2.0**A** 125 Kbps	
		0x10	CAN2.0**B** 1Mbps	
		0x11	CAN2.0**B** 500 Kbps	
		0x12	CAN2.0**B** 250 Kbps	
		0x13	CAN2.0**B** 125 Kbps	
0x01	Emission frequency AND Standard CAN	0x00	Rx frame trigger mode	
		0x01	1 Hz	
		0x02	5	
		0x03	10	Default
		0x04	50	
		0x05	100	
		0x06	200	
	Emission frequency AND Multiplexed CAN	0x10	Rx frame trigger mode	
		0x11	1 Hz	
		0x12	5	
		0x13	10	
		0x14	50	
		0x15	100	
		0x16	200	
0x02	Rx frame ID	if CAN2.0A: 0x1 to 0x7F0 if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)	MSB of triggering frame ID	Default 0x07F0
0x03			LSB of triggering frame ID	
0x04	Tx1 frame ID	if CAN2.0A: 0x1 to 0x7F0 if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)	MSB of data frame 1 ID	Default 0x03F0
0x05			LSB of data frame 1 ID	
0x06	Tx2 frame ID	if CAN2.0A: 0x1 to 0x7F0 if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)	MSB of data frame 2 ID	Default 0x03F4
0x07			LSB of data frame 2 ID	
0x06	if Multiplexed CAN: Sensor ID	Don't care	Not used	Default 0xF4
0x07		0 to 0xFE	Sensor ID	
0x08	Unit	0x00	PSI	0.001 PSI / bit	Default
		0x01	Bars	0.1 mBar / bit	

For complete information, contact us at info@texense.com

Ordering information

Ordering ref:

8xPDIF-S – *Common ports – Range – Autozero*

1x1: 1x 1mm common port (1x ref for channels 1 to 8)
1x1.6: 1x 1.6mm common port (1x ref for channels 1 to 8)
2x1: 2x 1mm common port (1x ref for channels 1 to 4) and 1x ref for channels 5 to 8)
2x1.6: 2x 1.6mm common ports (1x ref for channels 1 to 4 and 1x ref for channels 5 to 8)
8x1.6: 8x 1.6mm common ports (1x ref per channel)

N: None
Z: Auto-zero

50: ±50mbar range
70: ±70mbar range
150: ±150mbar range
200: ±200mbar range
250: ±250mbar range
350: ±350mbar range
1000: ±1000mbar range

ex: 8xPDIF-S-2x1-350-Z