

16xPDIF

16x 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⁾	< ±1000mbar range	1400	mbar
	≥ ±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		60	mA
Mechanical features			
Dimensions		See \$Mechanical drawing	
Material		Aluminum	
Weight		110	g
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	

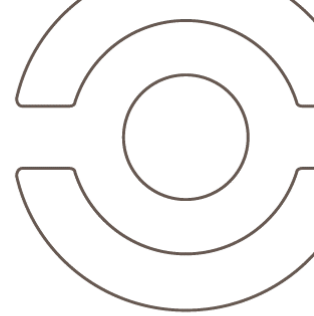
(1) Do not blow into the tubes with the mouth or a compressed air line

Date		Operator	
Customer			
Order			
Product Ref	16xPDIF-#-#-#-#		
SW version	V#.#		

Sensor Readings			
Channel	at mBar	at 0 mBar	at mBar
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Software setup			
CAN	☒ 2.0A	☐ 2.0B	-
Baudrate	1M		bps
Frequency	10		Hz
Rx trig ID	0x7F0		-
Tx1 ID	0x3F0		-
Tx2 ID	0x3F4		-
Tx3 ID	0x3F8		-
Tx4 ID	0x3FC		-
Unit	☒ 0.1mBar/bit	☐ 1mPSI/bit	-

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

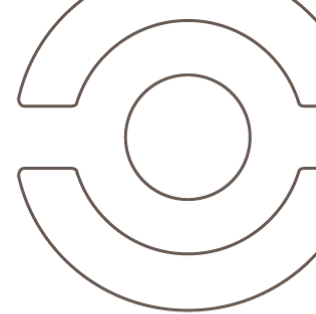


Mechanical drawing

Manifold version	Mechanical drawing	Common ports	Manifold drawing
Standard		1x common port (ordering code "1")	
		2x common ports: 1x common port for channels 1 to 8 1x common port for channels 9 to 16 (ordering code "2")	
Round manifold option (ordering code "R")		1x common port (ordering code "1")	
		2x common ports: 1x common port for channels 1 to 8 1x common port for channels 9 to 16 (ordering code "2")	

Pinout

Pinout	
Connector ref.: 8STA00406PN	
Mating connector ref.: 8STA60406SN	
Pin	Function
1	Supply
2	0 V
3	CAN Low
4	CAN High
5	Reserved (do not connect)
6	Reserved (do not connect)



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.

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	

Frame #3 (default Tx3 Frame ID: 0x03F8)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x03F8	Channel 9 MSB	Channel 9 LSB	Channel10 MSB	Channel10 LSB	Channel11 MSB	Channel11 LSB	Channel12 MSB	Channel12 LSB
	Pressure 9		Pressure 10		Pressure 11		Pressure 12	

Frame #4 (default Tx4 Frame ID: 0x03FC)

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x03FC	Channel13 MSB	Channel13 LSB	Channel14 MSB	Channel14 LSB	Channel15 MSB	Channel15 LSB	Channel16 MSB	Channel16 LSB
	Pressure 13		Pressure 14		Pressure 15		Pressure 16	

Data input (optional autozero command)

Auto-zero (optional)

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

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	CAN2.0A 1Mbps	Default	
		0x01	CAN2.0A 500 Kbps		
		0x02	CAN2.0A 250 Kbps		
		0x03	CAN2.0A 125 Kbps		
		0x10	CAN2.0B 1Mbps		
		0x11	CAN2.0B 500 Kbps		
		0x12	CAN2.0B 250 Kbps		
		0x13	CAN2.0B 125 Kbps		
0x01	Emission frequency	0x00	Rx frame trig	On request - 10Hz max.	
		0x01	1 Hz		
		0x02	5		
		0x03	10	Default	
		0x04	50		
		0x05	100		
		0x06	200		
0x02	Rx frame ID	if CAN2.0A: 0x1 to 0x7F0		MSB	Default 0x07F0
0x03		if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)		LSB	
0x04	Tx1 frame ID	if CAN2.0A: 0x1 to 0x7F0		MSB	Default 0x03F0
0x05		if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)		LSB	
0x06	Tx2 frame ID	if CAN2.0A: 0x1 to 0x7F0		MSB	Default 0x03F4
0x07		if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)		LSB	
0x08	Unit	0x00	PSI	0.001 PSI / bit	Default
		0x01	Bars	0.1 mBar / bit	
0x09	Tx3 frame ID	if CAN2.0A: 0 to 0x7F0		MSB	Default 0x03F8
0x0A		if CAN2.0B: 0 to 0xFFFF		LSB	
0x0B	Tx4 frame ID	if CAN2.0A: 0 to 0x7F0		MSB	Default 0x03FC
0x0C		if CAN2.0B: 0 to 0xFFFF		LSB	

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

Ordering information

Ordering ref:

16xPDIF – Manifold version – Common ports – Range – Autozero

Blank: Rectangular manifold
R: Round manifold

1: 1x common port (1x ref for channels 1 to 16)
2: 2x common ports (1x ref for channels 1 to 8
and 1x ref for channels 9 to 16)

N: None
Z: Auto-zero

50: ±50mbar range
70: ±70mbar range
100: ±100mbar range
150: ±150mbar range
200: ±200mbar range
250: ±250mbar range
350: ±350mbar range
1000: ±1000mbar range

ex: 16xPDIF-1-350-Z