IB6-CAN-V2

3 axis Capacitive and Gas mixed accelerometers and 3 axis gyroscope with CAN output

SN: B########

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.

Accelerometer X and Y axis features (Gas technology)		
Available Ranges	±3, ±5, or ±10	G
Accuracy	±2	%FS
Sensitivity	666 to 200 ±2%	mV/G
Bandwidth (@ -3dB)	DC to 20 ±15%	Hz
Signal at 0G	2.500 ±0.050	V
Offset Drift (20 to 80°C)	±20	mV
Gain Drift (20 to 80°C)	±1.5	%
Cross axis sensitivity	4	%
Accelerometer Z axis features (Capacitive technology)		
Available Ranges	±5, ±10, ±15, ±20	G
Accuracy	±1.5	%FS
Sensitivity	400 to 100 ±8%	mV/G
Bandwidth (@ -3dB)	DC to 70	Hz
Z signal at 0G	2.500±0.050	V
Offset Drift (20 to 80°C)	±20	mV
Gain Drift (20 to 80°C)	±1	%
Cross axis sensitivity	2.5	%
Gyroscope		
Range	±50, ±100, ±150	°/s
Accuracy	±2	%FS
Sensitivity	40, 20, 13.3	mV/°/s
signal at 0°/sec	2.500±0.100	V
Offset drift (20 to 80°C)	±25	mV
Gain Drift (20 to 80°C)	±1	%
Cut off frequency 1st order (@ -3dB)	50	Hz
Anti-Aliasing Filter – Type	Low pass, Linear phase 5th-Order	
Anti-Aliasing Filter – Cut off frequency	Programmable from 15 to 250Hz	
CAN interface		
CAN bus type	2.0A or 2.0B	
CAN termination resistor	Software switchable 120Ω	
Baud rate	125kbps to 1Mbps	
Output Frequency	1Hz to 500Hz(1), request mode.	
Output Data	16 bits per channel	
Output format	16bits or mV	
Electrical features		
Supply Voltage	6 to 16	V
Typical supply Current	65	mA

(1) 500Hz output rate only available with 1Mbps baudrate

Date	##/##/####	Operator	
Customer			
Order			
Product Ref	IB6-CAN-V2-XY#-Z##-GX###-GY###-GZ###		
SW version	Acc Gas board	V#.##	
	Gyro board	V#.##	
	CAN interface board	V#.##	

Accelerometer Sensor Readings			
	X	Y	Z
Signal (V) @ -1G			
Signal(V) @ 0G			
Signal (V) @ +1G			
Sensitivity (mV/G)			
Cross axis (%)			

Gyroscope Sensor Readings		
	0°/s	mV/°/s
X		
Y		
Z		

Setup parameters		
CAN	2.0A ~~2.0B~~	-
CAN termination resistor	☐yes ☒no	-
Baudrate	1M	bps
Frequency	100	Hz
Rx trig ID	0x7F0	Hex
Tx1 ID	0x3F0	Hex
Tx2 ID	0x3F4	Hex
CAN termination resistor	Not connected ~~Connected~~	-
Output format	~~16bits~~ mV	-
Gyro anti-aliasing filter cut off frequency	40	Hz

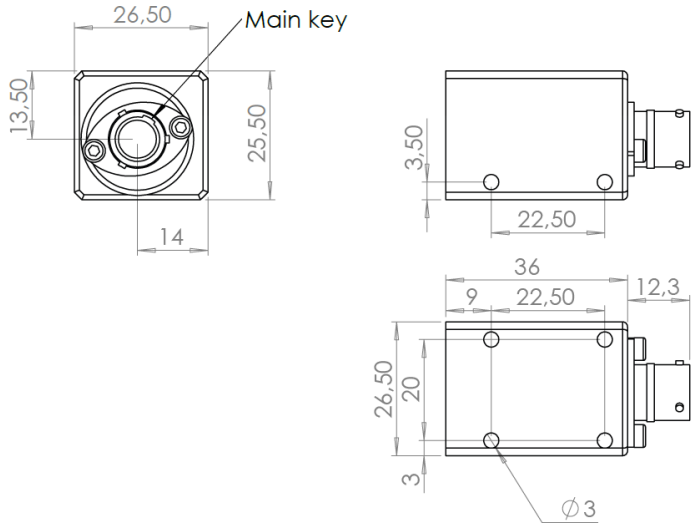
Mechanical features		
Housing Dim	36x26.5x25.5	mm
Material	Aluminum	
Weight	60	g
Protection	IP66	
Environment		
Vibration test	20Gpp 5'	
Shock	500	G
Operating Temp	-20 to +100	°C
Storage Temp	-40 to +125	°C

Calibration table

Acc. Calibration table						Gyro. Calibration table			
g	3G 666mV/g	5G 400 mV/g	10G 200 mV/g	15G 133mV/g	20G 100mV/g	°/s	±50°/s 40mV/°/s	±100°/s 20mV/°/s	±150°/s 13,3mV/°/s
-20					0.500				
-15				0.500	1.000	-150			0.500
-10			0.500	1.167	1.500	-100		0.500	1.167
-5		0.500	1.500	1.833	2.000	-50	0.500	1.500	1.833
-3	0.500	1.300	1.900	2.100	2.200	-25	1.500	2.000	2.167
0	2.500	2.500	2.500	2.500	2.500	0	2.500	2.500	2.500
3	4.500	3.700	3.100	2.900	2.800	25	3.500	3.000	2.833
5		4.500	3.500	3.167	3.000	50	4.500	3.500	3.167
10			4.500	3.833	3.500	100		4.500	3.833
15				4.500	4.000	150			4.500
20					4.500				

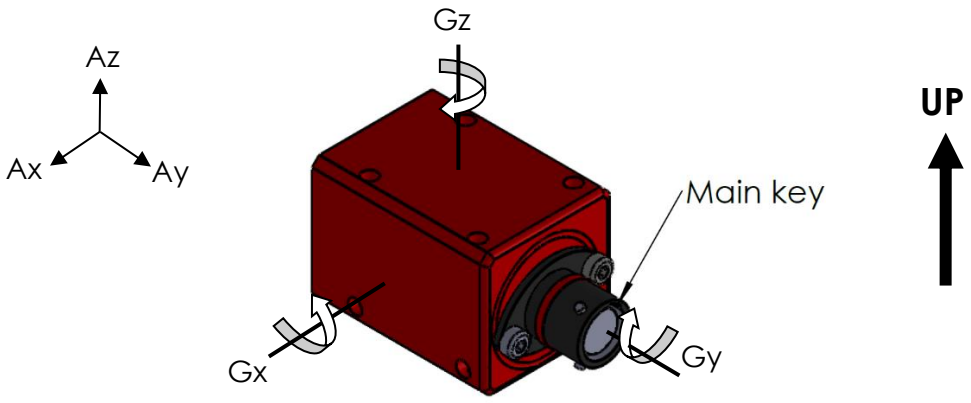
Out of Range

Mechanical drawing and pinout



Pinout	
Connector : ASDD006-09PN-HE Mating connector : ASDD606-09SN-HE	
Pin	Function
1	Supply (6 to 16 V)
2	GND
3	CAN HIGH
4	CAN LOW
5	Do not connect
6	Do not connect
7	NC
8	Do not connect
9	NC

Axis definition



CAN Data output

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	ACC X MSB	ACC X LSB	ACC Y MSB	ACC Y LSB	ACC Z MSB	ACC Z LSB	GYR Z MSB	GYR Z LSB
	Resolution: 1mV/bit if output format = mV 0.076mV/bit if output format = 16bit raw value							

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	GYR X MSB	GYR X LSB	GYR Y MSB	GYR Y LSB	GYR Z MSB	GYR Z LSB	-	-
	Resolution: 1mV/bit if output format = mV 0.076mV/bit if output format = 16bit raw value						-	-

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).

Address	Parameter	Raw values	values	Comments	
0x00	Baudrate & Type A or B (11 or 29bits ID)	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	0x00	Rx frame trig	Request mode - 100Hz max	
		0x01	1 Hz		
		0x02	5 Hz		
		0x03	10 Hz		
		0x04	50 Hz		
		0x05	100 Hz	Default	
		0x06	200 Hz		
		0x07	500 Hz	Only with baudrate 1Mbps	
0x02	Rx frame ID	if CAN2.0A: 0 to 0x07F0 if CAN2.0B: 0 to 0xFFFF		MSB	Default: 0x07F0
0x03				LSB	
0x04	Tx1 frame ID	if CAN2.0A: 0 to 0x07F0 if CAN2.0B: 0 to 0xFFFF		MSB	Default: 0x03F0
0x05				LSB	
0x06	Tx2 frame ID	if CAN2.0A: 0 to 0x07F0 if CAN2.0B: 0 to 0xFFFF		MSB	Default: 0x03F4
0x07				LSB	
0x08	CAN termination resistor	0	Not connected		Default: 0
		1	Connected		
0x09	Output format	0	16bits		Default: 1
		1	mV		
0x0A	cut off frequency	15 to 250	Hz	1Hz step	Default: 40
0x0B	TX Frame selection	Bit 0: Tx1 frame enabled (=1) or disable (=0) Bit 1: Tx2 frame enabled (=1) or disable (=0)		Default: 0x03 (all frames activated)	

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

Ordering information

Ordering ref:

IB6-CAN-V2-XY*Range*-Z*Range*-GX*Range*-GY*Range*-GZ*Range*

Range				
Acc XY	±3g	±5g	±10g	
Acc Z	±5g	±10g	±15g	±20g
Gyro XYZ	±50°/s	±100°/s	±150°/s	

ex: IB6-CAN-V2-XY5-Z15-GX150-GY50-GZ150