IRN8C-F2-V2

8 channels infrared temperature sensor with CAN bus output

IRN8C-F2-200-V2-### SN: I########

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		
Range	-20 to +200	°C
Accuracy at FS	±1	%FS
Response time at FS	260	ms
Sensitive Element	Thermopile with Silicon Lens	
Wave Length	8 to 14	µm
Emissivity / Distance tuning	Gain factor 0.5 to 2 configurable by CAN	
Field of view (90% radiation)	6.5:1 (30mm at 200mm)	
Mean Angle between channels	4.5	°
Total horizontal angle	41.6	°
Lens protection	Replaceable window (PEHD)	
Calibrator	HGH ECN 100 H12	
Calibration distance	50 to 1000	mm
CAN bus		
CAN type	2.0A or B	
Output Data	Calibrated temperature and ambient temperature	
Resolution	0.1	°/bit
Baud rate	125k to 1Mbps	
Frequency	1Hz to 10Hz, request mode	
Electrical features		
Supply Voltage	6 to 16	V
Supply Current	17	mA
Mechanical features		
Dimensions	31x11x17	mm
Material	Aluminum	
Weight (without cable)	15	g
Environment		
Protection	IP64	
Vibration test	20Gpp 5'	
Shock	500	G
Operating Temp	-20 to +85	°C
Storage Temp	-40 to +125	°C

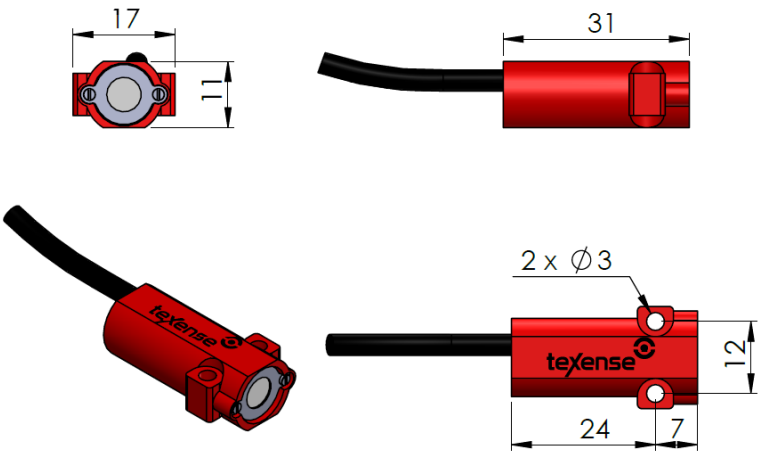
Date		Operator	
Customer			
Order			
Product Ref	IRN8C-F2-200-V2-###		
SW version	V#.##		

Sensor Readings		
Calibrator Temperature	25 °C	180 °C
Channel 1		
Channel 2		
Channel 3		
Channel 4		
Channel 5		
Channel 6		
Channel 7		
Channel 8		

Setup parameters	
CAN type	2.0A
Baudrate	1Mbps
Frequency	10Hz
Data format	☒ STD ☐ MUX
Rx trig ID	0x7F0
Tx1 ID	0x3F0
Tx2 ID / Sensor ID	0x3F4
Degree unit	Celsius
Gain factor	1000
Digital low pass filter	400 ms
Dynamic compensation	ON

Hardware parameters	
CAN termination resistor	☒ Not connected
	☐ Connected
Cable	☒ 4x26AWG FEP tinned copper braided cable 250V 200°C
	☐ EPD116760A

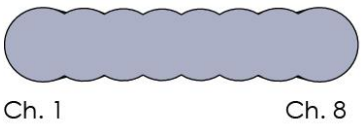
Mechanical drawing

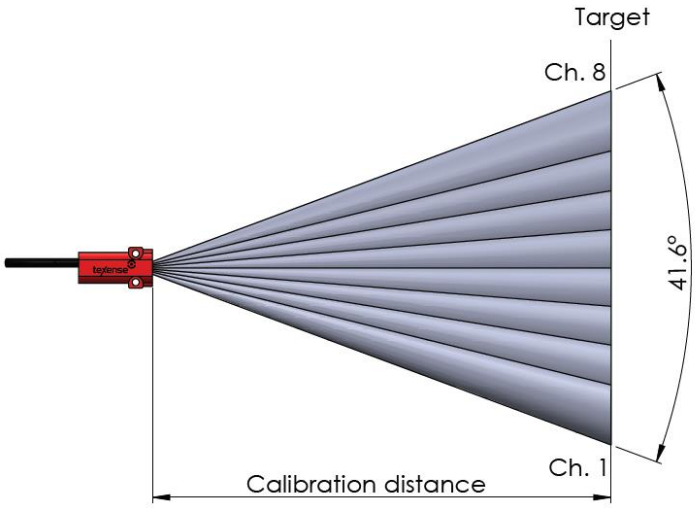


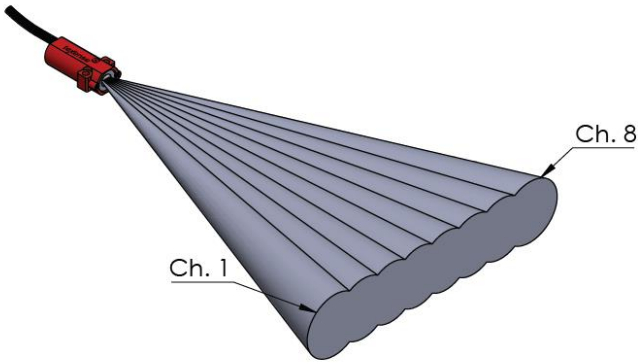
Wiring

Cable		
Cable: • Default: 4x26AWG FEP tinned copper braided cable 250V 200°C • Optional: EPD116760A Length: 1000 mm ±10% Tubing: None Connector: N/A		
Color	**Function**	**Pin**
Red	Supply	
Black	0V	
Green	CAN High	
White	CAN Low	
Braid (not for EPD116760A)		

FOV (Field of view)







CAN data output

Standard format (STD mode):

Interframe spacing is 5ms

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
	Resolution: 0.1°/bit		Resolution: 0.1°/bit		Resolution: 0.1°/bit		Resolution: 0.1°/bit	

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
	Resolution: 0.1°/bit		Resolution: 0.1°/bit		Resolution: 0.1°/bit		Resolution: 0.1°/bit	

Multiplexed format (MUX mode):

Interframe spacing is 33±2ms

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	Muxed Msg ID = 0	Channel 1 MSB	Channel 1 LSB	Channel2 MSB	Channel 2 LSB	Channel 3 MSB	Channel 3 LSB
			Resolution: 0.1°/bit		Resolution: 0.1°/bit		Resolution: 0.1°/bit	

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	Muxed Msg ID = 1	Channel 4 MSB	Channel 4 LSB	Channel 5 MSB	Channel 5 LSB	Channel 6 MSB	Channel 6 LSB
			Resolution: 0.1°/bit		Resolution: 0.1°/bit		Resolution: 0.1°/bit	

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	Muxed Msg ID = 2	Channel 7 MSB	Channel 7 LSB	Channel 8 MSB	Channel 8 LSB	Ambient Temperature MSB	Ambient Temperature LSB
			Resolution: 0.1°/bit		Resolution: 0.1°/bit		Resolution: 0.1°/bit	

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	0x00	1000 Kbps	Default	
		0x01	500 Kbps	-	
		0x02	250 Kbps		
		0x03	125 Kbps		
0x01	Emission frequency AND STD format	0x02	10 Hz	Default	
		0x03	1 Hz	-	
		0x04	Rx frame trig	On trig - 10Hz max.	
	Emission frequency AND MUX format	0x12	10 Hz	-	
		0x13	1 Hz	-	
		0x14	Rx frame trig	On trig - 10Hz max.	
0x02	Rx frame ID	0 to 0x07	0x0000 to 0x07F0	MSB	Default 0x07F0
0x03		0 to 0xFF		LSB	
0x04	Tx1 frame ID	0 to 0x07	0x0000 to 0x07F0	MSB	Default 0x03F0
0x05		0 to 0xFF		LSB	
0x06	If STD format: Tx2 frame ID	0 to 0x07	0x0000 to 0x07F0	MSB	Default 0x03F4
0x07		0 to 0xFF		LSB	
0x06	If MUX format : Sensor ID	Not used			Default 0xF4
0x07		0 to 0xFE		LSB	
0x08	Degree Unit	0	Fahrenheit	-	
		1	Celsius	Default	
0x09	Gain factor	500 to 2000	1/1000 (0.5 to 2)	MSB	Default 1000
0x0A				LSB	
0x0B	Digital filter response time	100 to 10000	ms (0.1 to 10s)	MSB	Default 400 ms
0x0C		0: disable		LSB	
0x0D	Dynamic compensation	0	OFF	Compensation for quick changes in ambient (sensor) Temperature	Default ON
		1	ON		

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

Ordering information

Ordering ref:

IRN8C-F2-*200*-V2 - *Distance* – *R120*

200: Range 200°C

Calibration distance in mm

Optional 120Ω termination resistor

ex: IRN8C-F2-200-V2-510-R120