IRN4C-F1-V2

4 channels infrared temperature sensor with CAN bus output

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		
Available ranges	-20 to +140 or -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)	
Total horizontal angle	22.5 or 41.6	°
Lens protection	Replaceable window (PEHD)	
Calibrator	HGH ECN 100 H12	
CAN bus		
CAN type	2.0A or B	
Output data	Calibrated 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

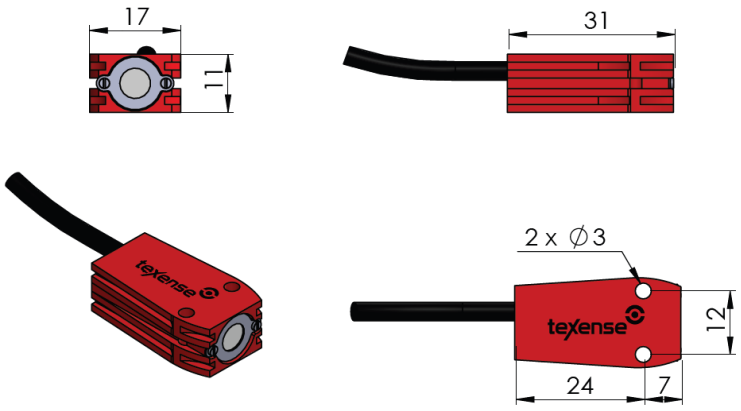
Date		Operator	
Customer			
Order			
Product Ref	IRN4C-F1-###-V2-##.#-###		
SW version	V#.##		

Sensor Readings		
Calibrator Temperature	25 °C	… °C
Channel 1		
Channel 2		
Channel 3		
Channel 4		

Setup parameters	
CAN type	2.0A
Baudrate	1Mbps
Frequency	10Hz
Rx trig ID	0x7F0
Tx ID	0x3F0
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

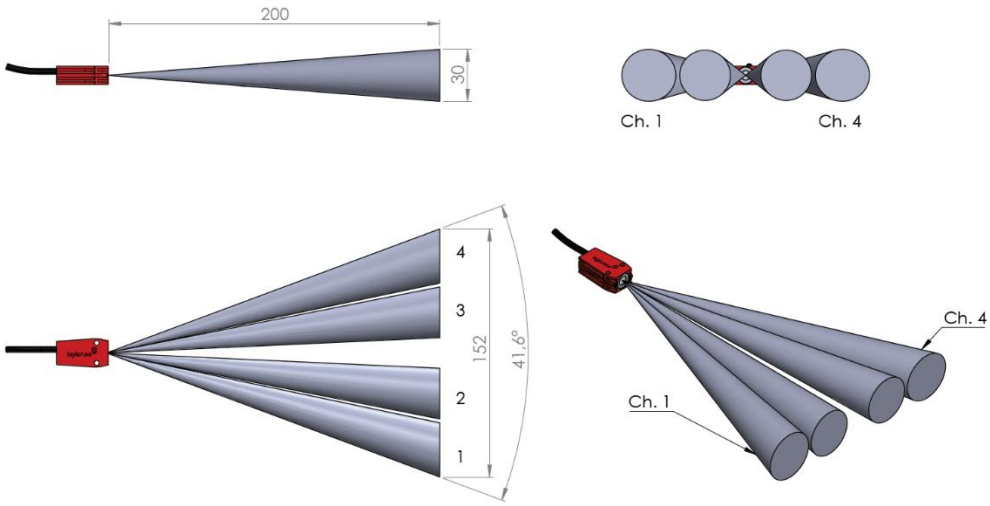


Wiring

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 or Blue	CAN High	
White	CAN Low	
Braid (not for EPD116760A)	-	

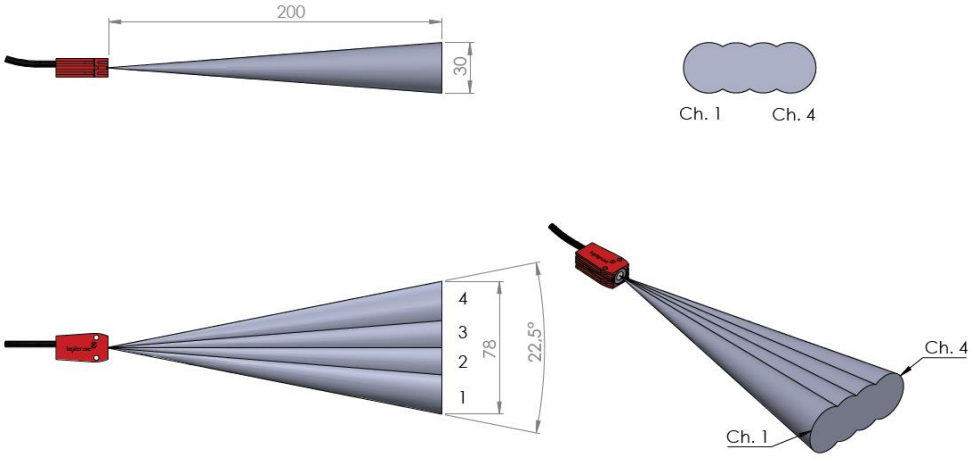
FOV (Field of view)

41.6° FOV version:



Distance	Ø target per channel	Total width
50 mm	15 mm	40 mm
100 mm	19 mm	75 mm
150 mm	24 mm	112 mm
200 mm	30 mm	152 mm
300 mm	45 mm	228 mm
400 mm	60 mm	304 mm

22.5° FOV version:



Distance	Ø target per channel	Total width
200 mm	30 mm	78 mm
300 mm	45 mm	117 mm
400 mm	60 mm	156 mm
500 mm	75 mm	195 mm
600 mm	90 mm	234 mm
700 mm	105 mm	273 mm
800 mm	120 mm	312 mm

CAN data output

Frame #1 (default Tx 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	

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	0x02	10 Hz	Default	
		0x03	1 Hz	-	
		0x04	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	Tx frame ID	0 to 0x07	0x0000 to 0x07F0	MSB	Default 0x03F0
0x05		0 to 0xFF		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:

IRN4C-F1-*Range*-V2-*FOV* - *Distance* – *R120*

140: Range 140°C
200: Range 200°C

22.5: FOV 22.5°
41.6: FOV 41.6°

Calibration distance in mm

Optional 120Ω termination resistor

ex: IRN4C-F1-200-V2-41.6-200