THNF8x-C

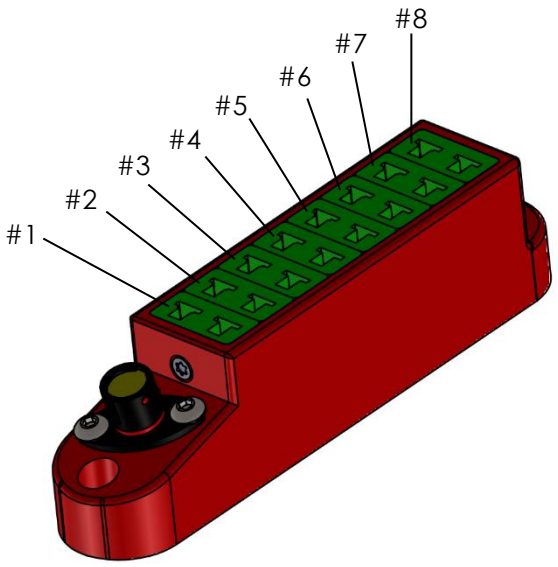
8 Channels Digital Thermocouple conditioner
50Hz sampling frequency, CAN bus output

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.

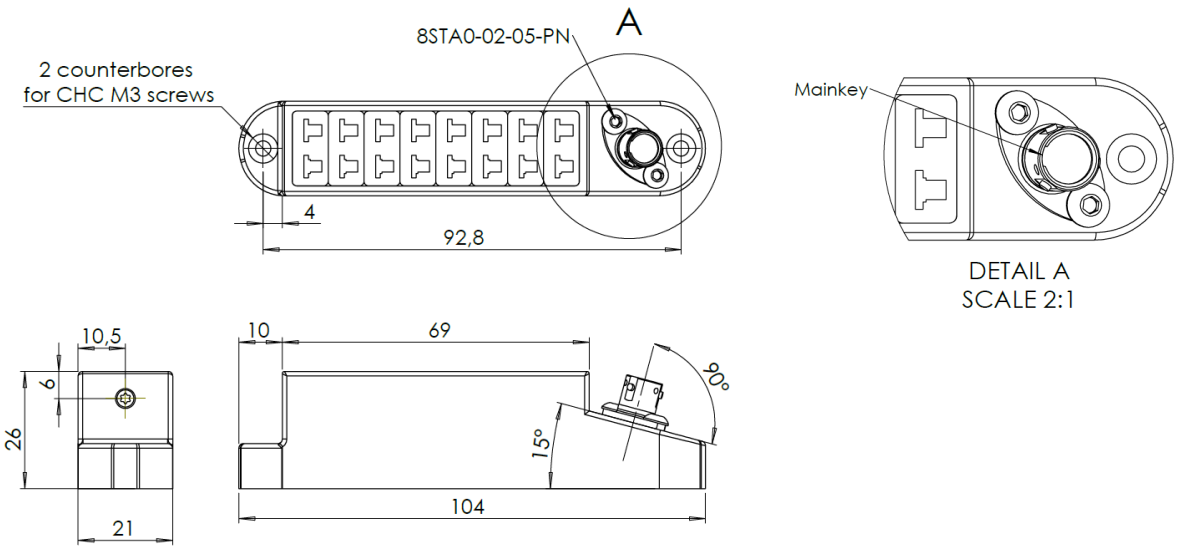
Measurement features			
Range	-100°C min to +2300 max (see §Available ranges)		°C
Type	K, C, R, J, N, B, S, T		
Calibrator	Fluke 714B or 753		
Sampling frequency per channel	50		Hz
Integration time	1 to 2560		ms
Sampling error	±0.2		%FS
Cold junction error	Type K, R, J, N, B, S, T	±0.7	°C
	Type C	±5	°C
Accuracy	Range ≤ 400°C	±1	°C
	Range > 400°C	0.25	%FS
CAN bus output			
Standard	2.0A or B		
Termination	R=120 Ω, switchable via CAN bus		
Baudrate	125kbps to 1Mbps		
Resolution	0.1°C or 0.1°F		
Electrical features			
Supply Voltage	6 to 25		V
Supply Current	<30		mA
Mechanical features			
Dimension	104 x 26 x 21		mm
Material	Aluminum		
Weight	90		g
Environment			
Protection	IP53		
Vibration test	20Gpp5'		
Shock	500		G
Operating Temp	-40 to +125		°C
Storage Temp	-40 to +125		°C

Pinout	
Connector: 8STA0-0205PN Mating connector: 8STA6-0205SN	
Pin	**Function**
1	Supply input
2	0V
3	CAN Low
4	CAN High
5	Do not connect and isolate

The Thermocouple probe wires must be isolated from supply ground



Mechanical drawing



CAN data output

- 8 thermocouple temperatures (1Hz to 100Hz output rate):

Tx1 ID 0x3F0	Byte 0 MSB	Byte 1 LSB	Byte 2 MSB	Byte 3 LSB	Byte 4 MSB	Byte 5 LSB	Byte 6 MSB	Byte 7 LSB
	Temperature #1		Temperature #2		Temperature #3		Temperature #4	
	Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit	

Tx2 ID 0x3F4	Byte 0 MSB	Byte 1 LSB	Byte 2 MSB	Byte 3 LSB	Byte 4 MSB	Byte 5 LSB	Byte 6 MSB	Byte 7 LSB
	Temperature #5		Temperature #6		Temperature #7		Temperature #8	
	Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit	

- 4 ambient temperatures (1Hz output rate if activated):

Tx3 ID 0x3F8	Byte 0 MSB	Byte 1 LSB	Byte 2 MSB	Byte 3 LSB	Byte 4 MSB	Byte 5 LSB	Byte 6 MSB	Byte 7 LSB
	Ambient#1		Ambient #2		Ambient #3		Ambient #4	
	Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit		Signed integer 16bits 0.1°/bit	

- Resolution is 0.1°C or 0.1°F, depending on degree unit configuration.

CAN 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	0x**0**0	CAN2.0**A** 1Mbps	Default	
		0x**0**1	CAN2.0**A** 500 Kbps		
		0x**0**2	CAN2.0**A** 250 Kbps		
		0x**0**3	CAN2.0**A** 125 Kbps		
		0x**1**0	CAN2.0**B** 1Mbps		
		0x**1**1	CAN2.0**B** 500 Kbps		
		0x**1**2	CAN2.0**B** 250 Kbps		
		0x**1**3	CAN2.0**B** 125 Kbps		
0x01	Emission frequency	0x00	Rx frame trig	Triggering mode - 50Hz max.	
		0x01	1 Hz		
		0x02	10 Hz	Default	
		0x03	50 Hz		
0x02	RxTrig frame ID	if CAN2.0A: 0x1 to 0x7F0 if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)		MSB	Default 0x07F0
0x03				LSB	
0x04	Tx1 frame ID	if CAN2.0A: 0x1 to 0x7F0 if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)		MSB	Default 0x03F0
0x05				LSB	
0x06	Tx2 frame ID	if CAN2.0A: 0x1 to 0x7F0 if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)		MSB	Default 0x3F4
0x07				LSB	
0x08	Tx3 frame ID	if CAN2.0A: 0x1 to 0x7F0 if CAN2.0B: 0x1 to 0xFFFF (except 0x7F1 to 0x7F3)		MSB	Default 0x3F8
0x09				LSB	
0x0A	Degree unit	0	Fahrenheit		
		1	Celsius	Default	
0x0B	CAN Bus Termination Resistor	0	Not connected	Default	
		1	Connected		
0x0C	Tx3 frame Enable	0	Disable	Default	
		1	Enable	This frame is sent at 1Hz	
0x0D	Integration time #1				
0x0E	Integration time #2				
0x0F	Integration time #3				
0x10	Integration time #4				
0x11	Integration time #5				
0x12	Integration time #6				
0x13	Integration time #7				
0x14	Integration time #8				

0x00	No Integration (1 sample)	
0x01	160ms (8 samples)	Default
0x02	320ms (16 samples)	
0x03	640ms (32 samples)	
0x04	1280ms (64 samples)	
0x05	2560ms (128 samples)	

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

Available ranges

Ranges			
Type	Ordering code	Type	Ordering code
K	K-100+400	R	R0+1250
	K-100+800		R0+1800
	K-100+1300	J	J-100+400
	K-50+200		J-100+800
	K-40+150		J-50+200
	K-40+300		J0+100
	K-40+1370		J0+1250
	K0+120	N	N-100+1000
	K0+300	B	B0+1800
	K0+800	S	S0+1500
	K0+900	T	T-100+300
	K0+1000		T-100+400
	K0+1100		T-50+200
	K0+1250		T-40+150
	K-50+1050		T-20+150
C	C0+2300		

Connectors standard and color		
Type	Standard	Color
K	IEC	Green
	ANSI	Yellow
C	IEC	White
R	IEC	Orange
S	IEC	
J	IEC	Black
	ANSI	
N	IEC	Pink
B	IEC	Grey
T	IEC	Brown

Ordering information

Ordering ref:

THNF8x-C – *Type/Range* – *Color Standard*

K-100+400 : K type -100°C to +400°C
K-100+800 : K type -100°C to +800°C
...
T-20+150 : T type -20°C to +150°C

IEC: IEC standard
ANSI: ANSI standard

ex: THNF8x-C-K-100+400-IEC