

XN6	
DIGITALLY CONTROLLED STRAIN GAUGE AMPLIFIER – ENHANCED VOLTAGE	
Ref: XN6	
S/N: X#####	Software version: v#.#

Texsys sensors are designed for data recording. If the user wants to include this sensor in a close loop system or active control, he must assume all responsibility.

Supply Voltage	8 to 30	V	
Supply Current under 12V (Amplifier only)	< 3	mA	
Bridge supply voltage (internal)	5	V	
Bridge gauge impedance	120 to 1000	Ω	
Output signal	0.5 to 4.5	V	
Output impedance	100	Ω	
Parameters	Offset, Gain, Compensation		
Offset	0 to 5	V	
Gain	70 to 1250	V/V	
Cut off frequency (1 pole filter) Adjustable on demand by "Bandwidth" capacitor See table	40 to 9000	Hz	
Temperature measurement	Internal Temperature Probe (NTC) or external for remote application		
Offset drift with temperature	<10	mV	
Gain drift with temperature	0.2	%	
Temperature compensation	Offset	by self training in oven start by Tx/Rx wire *	
	Gain	by resistor "R Metal" depending on part & gauge material or by Tx/Rx wire*	
Max initial recommended bridge unbalance	120Ω	1.5	mV
	350Ω	2	
	1000Ω	3.5	
Dimensions	18x10.3x4	mm	
Material	PCB + Epoxy + Inox cover		
Weight	5	g	
Vibration test	20Gpp 5'		
Shock	500	G	
Accuracy Temp	-40 to +125	°C	
Operating Temp	-40 to +125	°C	
Storage Temp	-40 to +125	°C	

* Use Texense USB Connect 1-Wire 5V or tSIB.

Readings		
V _{in}	@ 0 mV input	@ 10 mV input
V _{out}	...V	...V

Cut Off Frequency	...	Hz		
R Metal	...	Ohms		
V Metal	...	V		
PPM	...	Ppm/°C	ANA	DIG
Offset	2.5	V	ANA	DIG
gain	200	V/V	ANA	DIG

Digital communication commands
38400 bauds / 8 bits data / 1 stop / no parity / no flow control

command	value	min	max		
offset	'o'	2500	0	5000	to set offset (mV)
gain	'g'	2000	700	12500	to set gain (tenth)
ppm	'p'	-335	-1000	1000	ppm/°C (DIG).
ppm_dig	'u'	0	0	1	ppm DIG or ANA.
out_dig	'd'	0	0	1	DIG output 100Hz.
timeout	't'	5	2	12	for self learning.
compens	'c'	(5hours max)	Start of a self learning in oven.		
table	'x'	Displays the compensation table.			
erase	'e'	To erase the compensation table.			
check	'v'	To enter in Check mode.			
header	'h'	Displays this header.			
reboot	'!'	Reboot the XN6.			

R Metal value for gain temperature compensation (Constantan gauges)

Material of strain gauged part	Usual coeff %/°C	PPM/°C	R Metal
Steel (default)	-0.033	-330	20KΩ
Titanium	-0.050	-500	27KΩ
Aluminum	-0.059	-590	33KΩ
No compensation (if XN6 is used with a compensated gauge bridge)	0	0	11.5KΩ

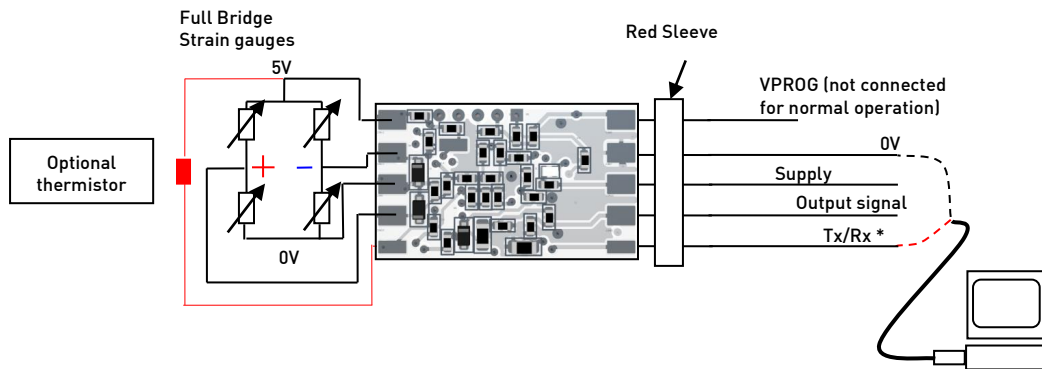
Bandwidth capacitor values (adjustable on demand)

Capacitor	Fc
220nF	40Hz
100nF	90Hz
47nF	190Hz
10nF	900Hz
1nF	9kHz (Default)

Capacitor value:

$$\frac{1}{2\pi F_c \times 18000}$$

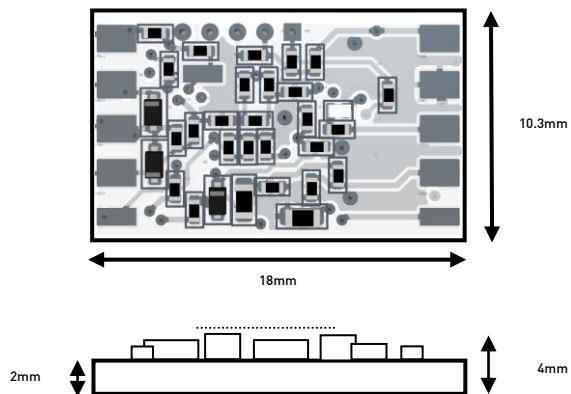
Wiring



* Only with Texense USB Connect 1-Wire 5V or tSIB
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The temperature probe is fitted close to the gauges to insure proper compensation. Only use 15k Ω NTC Thermistor (15k Ω at 25°C, Beta = 4000)

Mechanical design



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