

XN4

Digital controlled strain gauge amplifier

Supply voltage	5 to 16 V
Supply current (amplifier only)	< 5 mA
Bridge supply voltage (internal)	5 V
Bridge gauge impedance	120 to 1000 Ω
Output signal	0 – 5 V
Output impedance	100 Ω

Offset by VPROG by Tx/Rx *	0.5 to 2.5 V 0 to 5 V
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Gain by VPROG by Tx/Rx *	2.6 to 4.5 V (under force) 70 to 1250 V/V
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Cut off frequency (1 pole filter)	90 (default) up to 8 KHz
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Offset drift with temperature	< 10 mV
Gain drift with temperature	0.2 %

Temperature compensation:

- Offset
- Gain

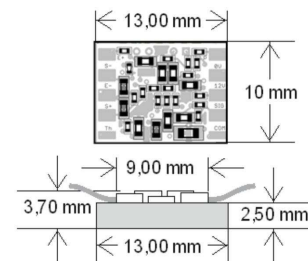
By self-training in oven
By resistor R metal depending
on part & gauge material or
by Tx/Rx wire digital PPM

Max initial recommended bridge unbalance	120 Ω	1.5 mV
.....	350 Ω	2 mV
.....	1000 Ω	3.5 mV

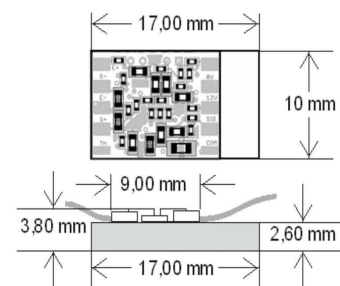
Dimensions XN4	13x10x4 mm
XN4 -P (120 Ω groups)	17x10x4 mm

Material	PCB + Epoxy encapsulation
Weight	1g
Shock	500 G

Operating temp	-40 to +125°C
Storage temp	-40 to +125°C



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XN4-P

Digital communication commands

command	value	min	max	offset in mV
offset 'o'	2500	0	5000	gain in tenth
gain 'g'	4995	700	12500	gain in tenth
ppm 'p'	-335	-1000	1000	ppm/°C (DIG)
ppm_dig 'u'	0	0	1	
out_dig 'd'	0	0	1	
timeout 't'	5	2	12	
compens 'c'	(5hours max)			
table 'x'				
check 'v'				
header 'h'				
reset '!''				

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
Aluminium	-0.059	-590	33KΩ
No compensation (if XN4 is used with a compensated gauge bridge)	0	0	11.5KΩ

Bandwidth capacitor values

Capacitor	Fc	Capacitor value = 1/(2π Fc x 18000)
220nF	40Hz	
100nF	90Hz (Default)	
47nF	190Hz	
1nF	9kHz	

*Tx/Rx Only with Texense USB-Connect

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