

XJ2 Transmitter Installation Guide.

Programmable Isolating
Multi-Input to 4~20mA Output
Loop Powered Transmitter.

Features.

- Field Programmable Bi-Polar Input Ranges.
- Input types:
 - mV, V, & mA.
 - RTD Pt100.
 - Differential RTD.
 - Thermocouple (T/C).
 - Bridge/Strain Gauge.
 - Potentiometer.
 - Resistance.
- Input to Output Isolation 2kV.
- High Accuracy 0.1%.
- Reverse Polarity Protected.
- LED Indication of Current Loop (CL).
- Compact DIN Rail Mount Enclosure.
- Available With One or Two Transmitters per Enclosure.
- Available Standard or Special Calibration.
- Easy to Install.
- Low Cost .



Ordering Information.

XJ2-X

XJ22-X

XJ2 - - -

M **IR** **SB**

XJ22 - - -

M **IR** **SB**

Standard Calibration Unit: Input 4~20mA;

Standard Calibration Units: Inputs 4~20mA;

One XJ2 transmitter per enclosure. Select the Model, Input Range and Sensor Break from the table below.

Two XJ2 transmitters per enclosure. Select the Model, Input Range and Sensor Break from table below. Both transmitters must be the same Model and Range.

Ranging Options of XJ2								
Input Model	M	Input Range - IR					Sensor Break	SB
			or Specify Within		Min ¹⁾	Max ¹⁾		
Bridge/Strain Gauge	B	0~20mV	0mV to 100mV & Bipolar		6mV	100mV	Upscale	U
DC Current	D	4~20mA	0mA to 26mA & Bipolar		60µA	26mA	Downscale	D
or DC Voltage	D	0~10V	0V to 40V & Bipolar		50mV	40V		
Resistance	K	0~200Ω	12Ω to 220Ω		12Ω	220Ω		
Differential RTD	N	0~100C	-100C to 520C	-150F to 940F	32C	520C		
Potentiometer	P	0~100%	0% to 100%		6%	100%		
RTD	R	0~100C	-100C to 520C	-150F to 940F	32C	520C		
Thermocouple	T	K: 0~1200C	B: 50C to 1820C	140F to 3310F	1100C	1820C		
Note: The XJ4 Thermocouple input is CJC, linear with mV, not linear with temperature.			E: -270C to 1000C	-454F to 1840F	100C	1000C		
			J: -210C to 1200C	-350F to 2200F	110C	1200C		
			K: -270C to 1370C	-454F to 2500F	140C	1370C		
			L: -200C to 760C	-330F to 1400F	110C	760C		
			N: -270C to 1300C	-450F to 2380F	200C	1300C		
			R: -50C to 1760C	-60F to 3200F	650C	1760C		
			S: -50C to 1760C	-60F to 3200F	650C	1760C		
			T: -270C to 400C	-454F to 760F	140C	400C		
			U: -200C to 400C	-330F to 760F	140C	400C		

Note 1) Min or Max Input Span Range = Signal High - Signal Low. On any Span range, offsets from 0% to ±60% are available.

Note 2) The XJ2 can be field recalibrated from any Input Range, and Output range to any other Input Range, and Output Range.

To change the unit to a different Model (For example from XJ2-D to XJ2-T) ask your local distributor to reconfigure the unit.

Note 3) Sensor Break option only applies to XJ2-K, XJ2-N, XJ2-R, XJ2-T.

Note 4) All RTD and Thermocouple models are rangable for both Celcius and Fahrenheit.

Ordering Examples.

1/ XJ2 - B - -10~30mV XJ2; Bridge, -10~30mV Input; 4~20mA Output.

2/ XJ2 - D - 0~200mV XJ2; DC, 0~200mV Input; 4~20mA Output.

Quality Assurance Programme.

The modern technology and strict procedures of the ISO9001 Quality Assurance Programme applied during design, development, production and final inspection grant long term reliability of the instrument. This instrument has been designed and built to comply with EMC and Safety Standards requirements.

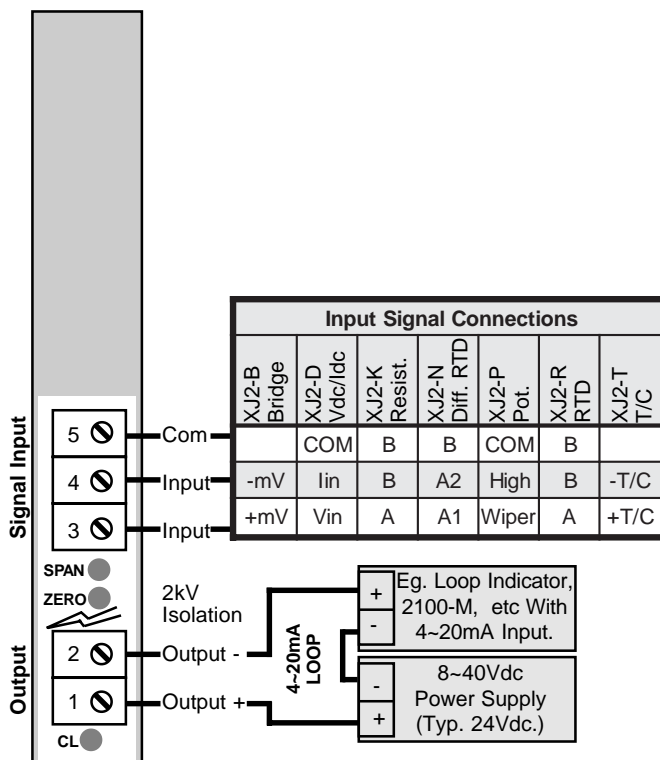
XJ2 Common Specifications.

Output	2 wire 4~20mA. (Loop Powered.)
Power Supply	8~33Vdc.
Supply Voltage Sensitivity	<±0.005%/V FSO.
Output Load Resistance	800Ω @ 24Vdc. (50Ω/V Above 8Vdc.)
Maximum Output Current	Limited to <28mA.
EMC Emissions Compliance	EN 55022-A
EMC Immunity Compliance	EN 50082-1
Safety Compliance.	EN 60950
Accurate to	<±0.1% FSO Typical.
Linearity & Repeatability	<±0.1% FSO Typical. (Unless Individual Specifications State Otherwise.)
Ambient Drift	<±0.02%/C FSO Typical.
Noise Immunity	125dB CMRR Average. (2.0kVdc Limit.)
R.F. Immunity	<1% Effect FSO Typical.
Isolation Test Voltages	-Between Input and Output: 2000Vdc for 1min. -Between the two XJ2 transmitters: 2000Vdc for 1min.
Response Time	200msec Typical. (From 10 to 90% 50msec Typical.)
Operating Temperature	0~70C.
Storage Temperature	-20~80C.
Operating Humidity	5~85%RH Max. Non-Condensing.
Mounting	35mm Symetrical Mounting Rail.
Dimensions	L=100, W=22.5, H=100mm.

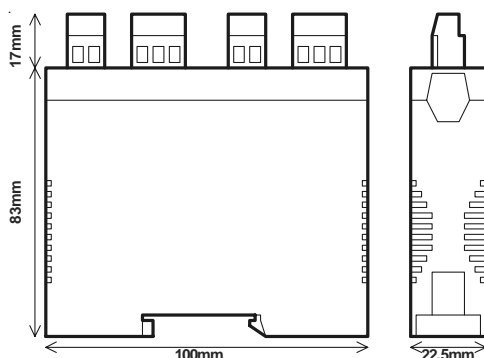
Product Liability. This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independant fail-safe back-up system must always be implemented.

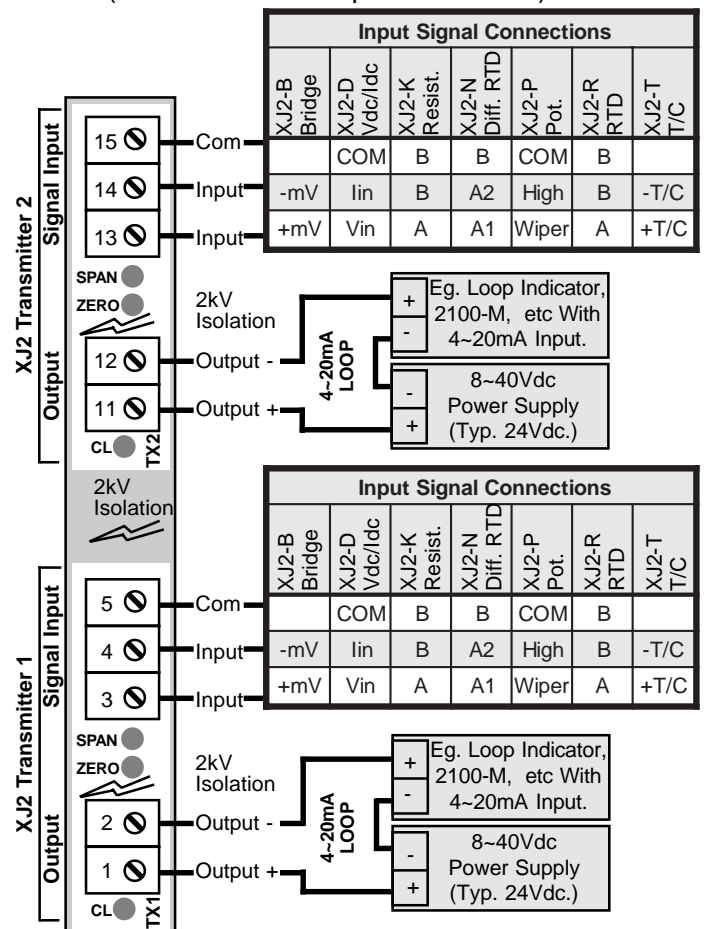
Top Overview of XJ2 Terminals.



XJ22 Enclosure Dimensions.



Top Overview of XJ22 Terminals. (Two Transmitters per enclosure.)



XJ2 Terminations.

Input: 5 COM
4 Input
3 Input

Output: 2 -mA
1 +mA

XJ22 Terminations.

TX1 In: 5 COM
4 Input
3 Input

TX2 In: 15 COM
14 Input
13 Input

TX1 Out: 2 -mA
1 +mA

TX2 Out: 12 -mA
11 +mA

XJ2 Individual Models Specifications.

XJ2-B Bridge/Straingage Input Specifications.

MilliVolts Input	-Field Programmable Zero	From 0 to $\pm 60\%$ of the Span.
	-Field Programmable Span	From 6mVdc to 100mVdc and Bipolar.
	-Minimum Input Resistance	130k Ω .
	-Maximum Over-range	40Vdc Continuous.

XJ2-D DC Voltage or DC Current Input Specifications.

Voltage Input	-Field Programmable Zero	From 0 to $\pm 60\%$ of the Span.
	-Field Programmable Span	From 50mV to 40Vdc and Bipolar. (Special Higher Vdc available)
	-Minimum Input Resistance	130k Ω .
	-Maximum Over-range	40Vdc Continuous.
Current Input	-Field Programmable	Zero From 0 to $\pm 60\%$ of the Span.
	-Field Programmable	Span From 60 μ A to 26mAdc and Bipolar.
	-Input Resistance	100 Ω .
	-Maximum Over-range	50mAdc Continuous. (Special Higher mAdc available)

XJ2-K Resistance Input Specifications.

Resistance Input		3 Wire Resistance. (2 Wire can be used with offset Calibration)
	-Lead Wire Resistance	5 Ω /Wire Max. 0.1%FSO Offset error per Ω of lead resistance.
	-Field Programmable Zero	From 0 to 60% of the Span.
	-Field Programmable Span	From 12 Ω to 220 Ω .
	-Linearity	0.1%FSO/20 Ω (0~20 Ω =0.1%FSO; 0~200 Ω =1%FSO)
	-Sensor Break Output Drive	Funct Jump 4='0' Upscale.
		Funct Jump 4='1' Downscale to within 5% of 0% FSO typical.
	Excitation Current	0.5mA Nominal

XJ2-N Differential RTD Input Specifications.

Differential RTD Input		Pt100 DIN (2 Wire Type) Standard.
	-Sensor Current	0.5mA Nominal.
	-Field Programmable Zero	From 0 to $\pm 60\%$ of the Span.
	-Field Programmable Span	From 32C(60F) to 520C(940F).
	-Sensor Break Output Drive	Funct Jump 4='0' RTD1 Break Upscale, RTD2 Break Downscale.
		Funct Jump 4='1' RTD1 Break Downscale, RTD2 Break Downscale.
	Linearity	0.1%FSO with RTD2=0.0.C for SPAN Inputs \leq 200C.
		0.2%FSO with RTD2=0.0.C for SPAN Inputs \leq 520C.
Other Types of RTD Available:		JIS Pt100, Pt250, Pt500, Pt1000.

XJ2-P Potentiometer (Pot) Input Specifications.

Potentiometer Input	3 Wire Potentiometer.
-Excitation Voltage	2.5Vdc.
-Minimum Pot Resistance	2K Ω .
-Maximum Pot Resistance	1M Ω .
-Field Programmable Zero	From 0 to 60% of the Span.
-Field Programmable Span	From 6 to 100%.

XJ2-R RTD Input Specifications.

RTD Input		Pt100 DIN 3 Wire Type. (2 Wire can be used with offset Calibration)
	-Sensor Current	0.5mA Nominal
	-Lead Wire Resistance	5 Ω /Wire Max. 0.1%FSO Offset error per Ω of lead resistance.
	-Field Programmable Zero	From 0 to $\pm 60\%$ of the Span.
	-Field Programmable Span	From 32C(60F) to 520C(940F).
	-Sensor Break Output Drive	Funct Jump 4='0' Upscale.
		Funct Jump 4='1' Downscale.
	Linearity	0.1%FSO for SPAN Inputs \leq 200C.
		0.2%FSO for SPAN Inputs \leq 520C.
Other Types of RTD Available.		JIS Pt100, Pt250, Pt500, Pt1000.



CAUTION: Dangerous Voltages may be present. The XJ2 has no user serviceable parts.
Protective enclosure only to be opened by qualified personnel.
Remove ALL power sources before removing protective cover.



XJ2 Individual Models Specifications. Cont.

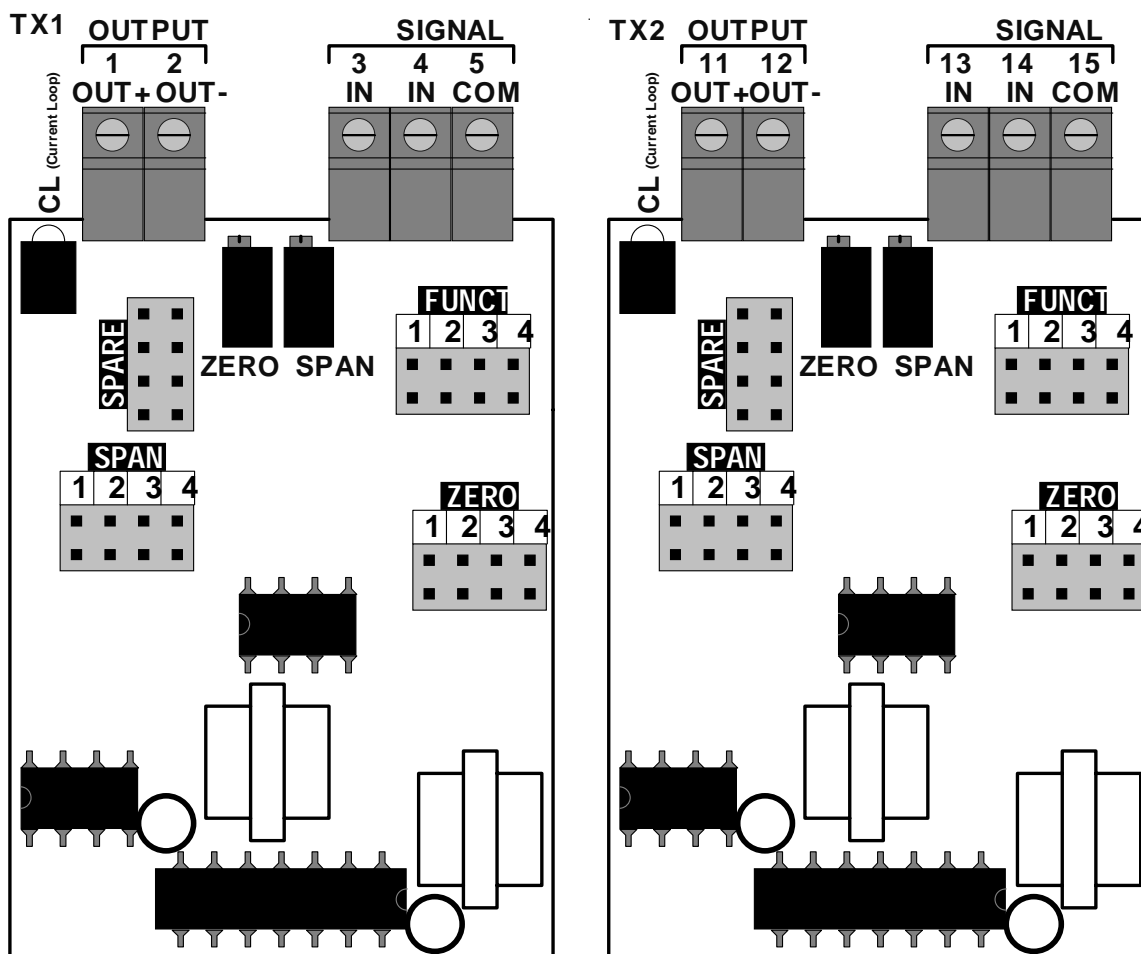
XJ2-T Thermocouple (T/C) Input Specifications.

Input	-Thermocouple	Types B, E, J, K, L, N, R, S, T, U.
	-Field Programmable Zero	From 0 to $\pm 60\%$ of the Span.
	-Field Programmable Span	Refer to Ordering Information for Min/Max Ranges for Each Type.
	-Input Impedance	130K Ω Minimum.
	-T/C Lead Resistance	100 Ω Maximum.
	-Cold Junction Comp.	0~60C.
	-CJC Accuracy -B, K, T, U	<0.05C/C (<0.05F/F) Typical.
	-CJC Accuracy -J, L, S	<0.1C/C (<0.1F/F) Typical.
	-CJC Accuracy -N, R	<0.2C/C (<0.2F/F) Typical.
	-CJC Accuracy -E	<0.3C/C (<0.3F/F) Typical.
	-Sensor Break Output Drive	Funct Jump 1='0' Downscale. Funct Jump 1='1' Upscale.

Note: Output is linear with mV input only. Output is not linear with temperature.

XJ22 PCB Layout

This shows the XJ22 layout; two XJ2 transmitters per enclosure.



Note.

The header marked 'SPARE' has spare jumpers to be used for reranging. The 'SPARE' header has no electrical connection to the rest of the circuit.



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