



# ADVANCED FORCE MEASUREMENT 500 In-Line Signal Conditioner Installation Information

## Analog Output Signal Conditioner with RCAL (Serial C- - - -)

500 -- X:  $\pm$  input range: 1=10mV 2=20mV 3=30mV 4=40mV  
Y: Excitation: 10=10V 5=5V

### Specifications:

Power	12-24 VDC (approx. 60 ma with 350 ohm transducer)
Excitation	5 or 10 VDC , $\pm$ 0.01 VDC, solder pad selectable (30 ma)
Input range	$\pm$ 10, 20, 30, or 40 mV full scale (set at factory)
Output (Voltage)	$\pm$ 5.0 V full scale
Output (Current)	4 to 20 ma full scale, positive input polarity only
Overrange	40% voltage output, 0% current output
Span adjust range	$\pm$ 10% of nominal
Zero adjust range	$\pm$ 1.4 mV with 350 ohm transducer, $\pm$ 2.8 mV with 700 ohm transducer
Bandwidth	1 kHz (2 pole filter)
Operating temp range	0 to 70 °C

Model	Input Range ( $\pm$ mV)	R3 (ohm)	Jmp Pad 4	R5 (ohm)	Jmp Pad 5	Gain	Zero Adjustment Range at Output ( $\pm$ VDC)*
500-1	10	180	S	180	S	500	0.72
500-2	20			180	S	250	0.36
500-3	30			270	S	167	0.24
500-4	40	360	S			125	0.18

S = Jumper Pad Short, blank = open \* Above for 350 ohm, double amount for 700 ohm transducer.  
Excitation 10V: Jumper Pad 1=Short, Jumper Pad 2=open 5V: Jumper 1=open, Jumper Pad 2=Short

### Calibration Procedure:

1. Apply input of 0 V. Adjust ZERO pot for output voltage reading of 0.000.
2. Apply known input near full scale. Adjust SPAN pot for proper output voltage reading.  
Reading = nom span \* known input / transducer output.

For example, for 2.120 mV/V transducer to produce 5.000 V full scale output and using known input = 2.000 mV/V, adjust SPAN pot for reading of  $5.000 * 2.000 / 2.120 = 4.717$  V.

3. The ZERO and SPAN adjustments are independent. If it is desired to set a particular offset, for example the zero balance of a transducer, it may now be set with the ZERO pot and span will not be affected.

### Calibration Procedure Continued on Page 2...

Interface, Inc., 7401 E Butherus Dr., Scottsdale, AZ 85260 USA  
(480) 948-5555 - FAX (480) 948-1924 - [www.interfaceforce.com](http://www.interfaceforce.com)

**Calibration Procedure Continued from Page 1:**

4. The current output follows the voltage output, 0 to +5V corresponding to 4 to 20 ma. If fine adjustment of the relationship is desired, use internal adjustments R15 and R9.
  - a. Apply input of 0V. Note current reading.
  - b. Apply known input near full scale. Adjust R9 for desired span (example 16 ma).
  - c. Apply input of 0V. Adjust R15 for desired minimum current (example 4 ma).
  - d. Repeat as necessary, as R15 and R9 may be interactive. Adjustment ranges for R15 offset and R9 span are each 0.5 ma.
  
5. Use of RCAL with internal switch is optional. Shunt may be changed by user. Default R19 = 59.1 Kohm.

1	2	3	4	5	5	4	3	2	1
6	7	8	9	9	8	7	6		

Dimensions: L x W x H: 2.73 x 1.68 x 0.8

P1 (DE-9 pins)	J1 (DE-9 sockets)
1. 4-20 ma Out	1. + Exc
2. 4-20 ma Rtn	2. + Signal
6. 12-24 VDC com	3. - Signal
7. ±5V Rtn	4. - Exc
8. ±5V Out	
9. +12 - 24 VDC	