

G4-433



SPECIFICATIONS

ISOLATION	
Input to Output	700VDC 60pF
AMPLIFIER	
Gain:	
Adjustment range (Input for 4 – 20mA output)	5 to 50mV
Linearity	0.01%FS
Temperature stability	50PPM(0.005%/°C)
Input Noise:	
.1 to 10Hz	2µV P-P
Tare Adjustment Range:	
Bridge offset	-3 to 25mV
Input Resistance:	
Differential & common mode	1000MΩ
Common Mode Rejection, DC	100dB min.
Common Mode Input	+5V
OUTPUT	
Zero Adjust	0 or 4mA
Temperature coefficient	1µA/°C
Current Output Span	4 to 20 or 0 to 20mA
Compliance voltage	1 to 20V
Current	-1 to 20mA
Loop resistance	0 to 1000Ω
Frequency response (-3dB)	10Hz 2 pole roll off
Response Time	
Rise Time 10% to 90%	35ms
To 0.1% of Final Value	100ms
BRIDGE SUPPLY	
Voltage Adjustment Range	5 to 10V
Temperature coefficient	100PPM typ.
Fixed	10.2V±2.5%
Temperature coefficient	60PPM typ.
Load Current	0 to 120mA
Regulation – Load & Line	0.02 max.
Output Noise:	
120Hz bandwidth	1mV RMS max.
POWER INPUT	
Power Input	115VAC±10 50/60Hz @7 VA
Optional	100, 220 or 230VAC±10%
Line Isolation:	
Capacitance	60pF
Dielectric withstand	1100V RMS
ENVIRONMENT	
Ambient Operating	-25 to 55°C
Storage	-25 to 85°C
Weight	18oz. (510g)
Size	3.75" X 2.0" X 2.87"

NOTE: Unless otherwise noted, specifications apply after one hour warm up at 25°C ambient. Temperature coefficients apply between 0°C and 55°C ambient.

Tare Weight Compensation

The Model 433 has two different zero controls. One is called the OUTPUT zero and can be set to 0mA or 4mA with SWA-2. The other zero control is called TARE. SWA-1 allows the selection of one of two TARE ranges, -3 to 15 or 15 to 25mV. Potentiometers are available for COARSE and FINE TARE adjustments.

Transducer Excitation

The bridge excitation supply voltage is set by SWB-1 and potentiometer E. Set SWB-1 ON for a fixed 10V. This will provide the best temperature stability. The supply can be adjusted between 5 and 10V by setting SWB-1 OFF and adjusting potentiometer E. The supply will deliver up to 120mA current at any voltage setting to power up to four 350Ω sensors.

Getting Started with the Model 433

1. Excitation Supply. If remote sensing is not used, connect +Sense to +Excitation, terminal 3 to 4, and connect-Sense to -Excitation, terminal 1 to 2.
2. Apply power the UNIT and adjust the Excitation supply. Turn SWB-1 "ON" for a fixed 10V. This will set the supply to 10.2VDC±2.5% and provide the best temperature stability. For voltages between 5 and 10V, place SWB-1 in the "OFF" position and set the Excitation supply with the Potentiometer "E". SWB-2 may be in either position.
3. Turn the power to the UNIT off and connect the load cell to the Model 433 excitation terminals and the signal terminals.
4. Turn ON the power to the UNIT.
5. Turn SWA-3 "ON". (To set the output ZERO current with pot "D". Typically this is to be set at 4mA.)
6. Select the expected full scale output signal range according to the table with SWA-4 and SWA-5. If the output of the cell is unknown, set both SWA-4 and SWA-5 to "ON" for the 40 to 50mV range.
7. Set SWA-2 "OFF" for 4mA or SWA-2 "ON" for 0mA output at zero.
8. Adjust "D" potentiometer for desired ZERO current.
9. Turn SWA-3 "OFF". Expect output current to change.
10. Apply no load or dead weight to load cell. (Make certain tank is empty and all attachments are made.)
11. Adjust TARE potentiometers A and B for the same ZERO current set in step 8. SWA-1 "OFF" provides a bridge output balance of -3mV to 15mV and "ON" between 15mV and 25mV.
12. Apply no load or dead weight to load cell. (Make certain tank is empty and all attachments are made.)
13. Remove full scale load and check ZERO output current. Adjust FINE TARE potentiometer "A" if required.
14. Recheck full scale as in step 12.
15. END.

NOTE: If the amplifier is used without using the 433 Excitation Supply, the external power supply low side must be connected to the -EXC terminal 2 on the Model 433, or one of the inputs must be tied to terminal 2, -EXC.

Amplifier

The amplifier is a true differential input, low drift instrumentation amplifier with less than 100pA input current. It has a common mode range of 5 Volts with respect to the - EXCITATION supply terminal and a minimum of 100dB rejection of the common mode voltage. The input amplifier and excitation supply are DC isolated from the AC line and the current output. The isolated output current source has a compliance of 20 Volts to allow the Model 433 to operate with zero to 1000Ω of loop resistance.

Connecting to a Sensor

Any amplifier has a finite input current which must have DC return path to the amplifier power supplies. This path is automatically provided when the Model 433 bridge excitation supply is used to excite the sensor. If an external supply is used, one side of the external supply must be connected to the Model 433 common, terminal 2. Be sure that the common mode voltage limits are observed.

NOTE: All wires used connecting the 433 should be of the same material. If any intervening connections are made such as a terminal block, the terminal block connecting points should have good thermal contacts.