

DP1028 MANUAL

OMEGADYNE PROCEDURE NUMBER
A012306

REVISION A
11/24/99

MODEL DP1028 TRANSDUCER INDICATOR OPERATING INSTRUCTIONS

Introduction

The Omegadyne model DP1028 Transducer Indicator is a rugged precision instrument which, when interfaced to an appropriate strain gage transducer, provides direct indication of pressure, weight, torque, etc. The DP1028 is self-contained with four (4) user selectable transducer excitation voltages together with a bridge network for self calibration.

Configuration

The DP1028 is preset at the factory to provide a 10 VDC excitation, to accept a 3 mV/V transducer, and to display the value 3000 when 30 mV is applied to its input. Should this setup match the application and transducer you have please skip this section.

To change the configuration, you will need to remove the instrument from its housing. First unplug the power cord. Next, utilizing a small flat tip screwdriver, carefully remove the four press-in mounting feet on the bottom of the unit. Finally, remove the four mounting screws on the rear panel and slide the instrument out. When done setting the configuration, reassemble the instrument in the reverse order.

Excitation Voltage: Locate the 4 position DIP switch (SW2) located behind the display panel as shown in Figure 1. Close the appropriate switch position to select the desired voltage according to Table I. Note that exactly one switch must be in the closed position (moved toward U6) for the proper voltage selection.

Table I. Configuration of DP1028 (ref. Figure 1). The excitation voltage is set by closing exactly one DIP switch position for SW2 (located behind the front display.)				
Excitation Voltage	SW2-pos 1	SW2-pos 2	SW2-pos 3	SW2-pos 4
10 VDC regulated	Closed	Open	Open	Open
12 VDC regulated	Open	Closed	Open	Open
15 VDC regulated	Open	Open	Closed	Open
28 VDC unregulated	Open	Open	Open	Closed

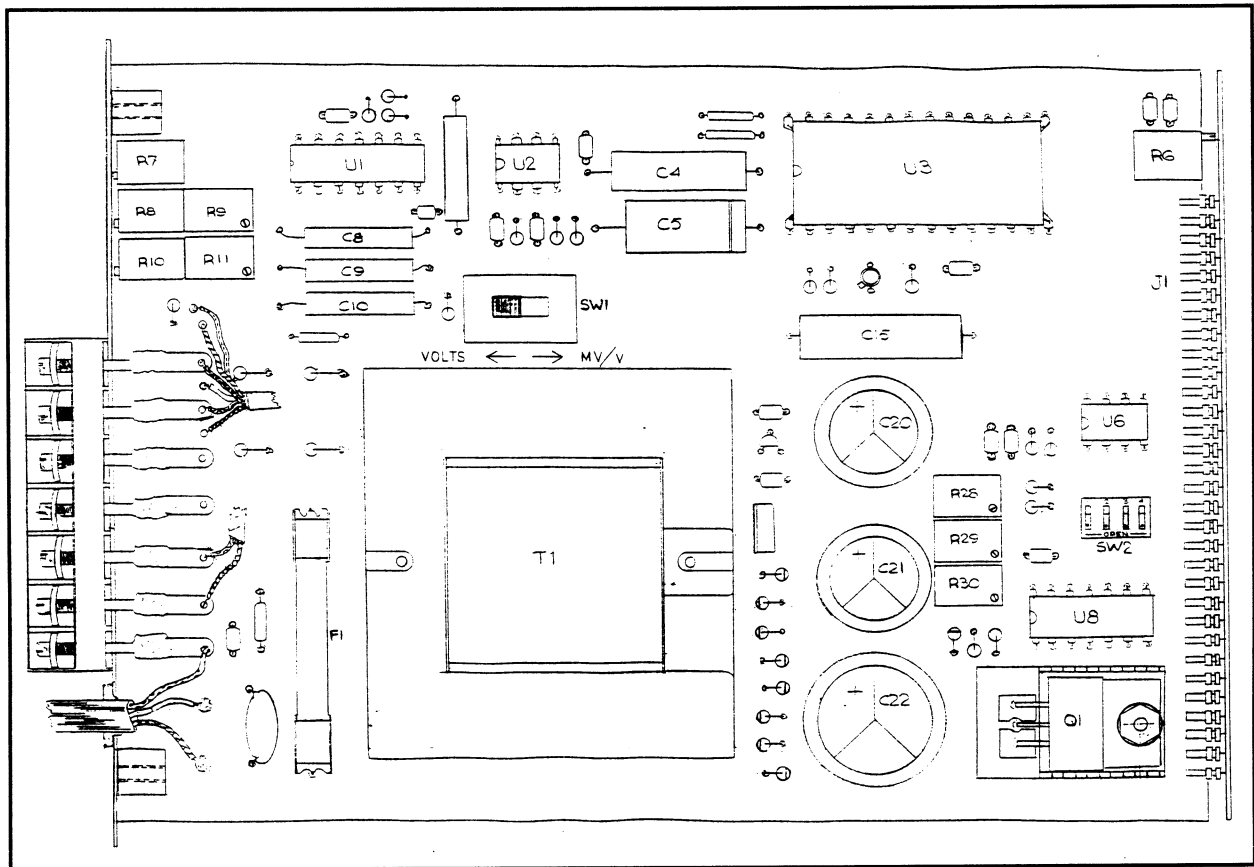


Figure 1

Bridge Output: The DP1028 is designed to receive either an unamplified millivolt (0-30mV typical) or an amplified Voltage (0-5VDC typical) signal from the transducer.

Locate the slide switch on the instrument as shown in Figure 1. For a mV device, set the slide switch to the forward position (toward the front of the instrument) and for an amplified Voltage device, set it to the rear position.

Decimal Point: The decimal point in the display may be configured to appear in one of

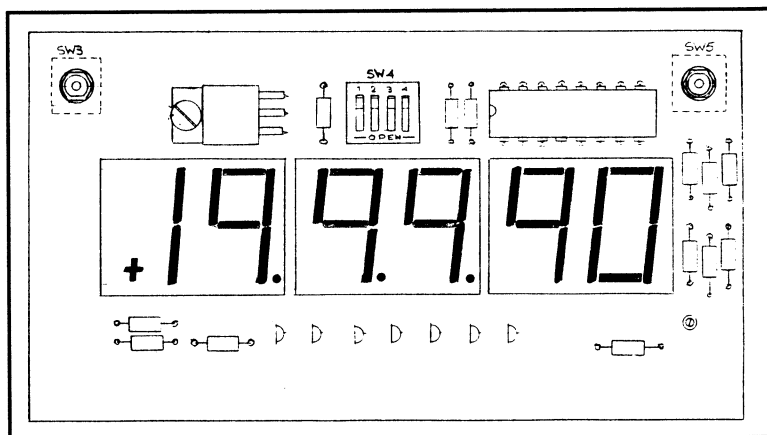


Figure 2

three positions or not at all. Locate the 4 position DIP switch (SW4) located on the top center portion the display panel as shown in Figure 2. Close the appropriate switch position to select the desired location according to Table II. Note that exactly one switch must be in the closed position (moved toward top of board) for the proper selection.

Table II. Configuration of DP1028 (ref. Figure 2). The decimal point location is set by closing exactly one DIP switch position [1-3] for SW4 (located on the front display.)
 NOTE: SW4-pos 4 *when closed* activates the dummy zero digit and operates independently of the other 3 positions of SW4.

Decimal Point	SW4-pos 1	SW4-pos 2	SW4-pos 3	SW4-pos 4
19.999	Closed	Open	Open	Open
199.99	Open	Closed	Open	Open
1999.9	Open	Open	Closed	Open
199990	Open	Open	Open	Closed

Verify Operation/Calibration

The DP1028 can accept inputs from a variety of transducers. Prior to placing the unit in service follow the instructions that follow to insure accurate and reliable readings.

Connections: Refer to Figures 3A and 3B. Connect the transducer to the appropriate terminals on the barrier strip located on the rear panel. Proper termination of the cable shield is essential for operation free from EMI and RFI interference.

Power: Plug the power cord into any properly grounded 3-prong outlet. To insure proper operation the DP1028 must be powered by 115 VAC $\pm 10\%$, 50-60Hz single phase power. Allow the instrument to warm up approximately one hour to obtain rated accuracy of ± 1 count over entire range.

Adjustments: With the transducer (load or pressure) set to produce an output equal to zero input, adjust the zero indication of the instrument with the coarse zero adjustment on the rear panel and/or the fine zero adjustment through the front panel. If no transducer is connected, short SIG- to SIG+ to obtain a zero reading.

Instrumentation Calibration: This feature provides a means for verifying the instrument's internal calibration. Pressing the INST CAL push-button will place the internal bridge network into the circuit resulting in a full scale indication appearing on the display.

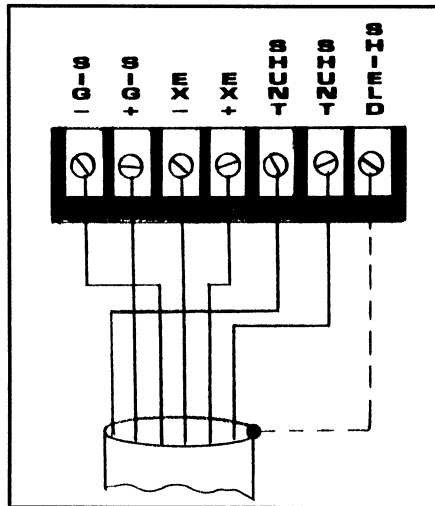


Figure 3A

The system is now ready for use. Actual force or pressure may be determined by comparing the instrument reading to the output data supplied with each transducer.

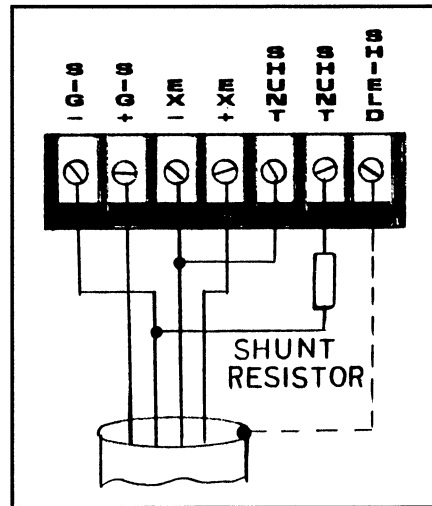


Figure 3B

Shunt Calibration

This feature, as set at the factory, allows for ease of checking for proper function of the instrument and transducer system. Pressing the SHUNT CAL button enables the transducer's shunt calibration resistor. When utilizing a transducer with a factory installed shunt calibration, the hook-up must be as shown in Figure 3A and requires a 6 wire cable. This same feature may be utilized with other transducers when set up per Figure 3B and with a user selected and installed shunt calibration resistor.

When the SHUNT CAL button is pressed, the instrument will indicate a calibrated reading equal to the shunt output as supplied on the calibration certificate with the transducer. This output may be converted directly to engineering units (PSI, LBS., etc.).

This feature may also be utilized for adjusting the instrument to directly read in engineering units i.e. PSI, LBS., etc. Please note that this will also alter the factory set full scale output calibration.

Shunt Calibration Adj: To calibrate the instrument in engineering units, hold the SHUNT CAL button in and turn the COARSE and/or FINE SPAN adjustments located on the rear panel to arrive at the required reading. Apply an input equal to zero output to verify the zero adjustment. Repeat as necessary to obtain accurate zero and full scale readings.

Note: Absolute Pressure (PSIA) transducers may be calibrated using the same method when a vacuum source is not available. Upon completion of calibration in engineering units, the instrument zero should be adjusted for a positive indication to equal atmospheric pressure.

Factory Calibration

When required, the instrument may be recalibrated as originally set up at the factory. Consult the factory.

Options

Consult Factory

Applicable Documents

A020024 DP1028 Specification/Control Drawing

MODEL DP1028-230
INPUT POWER OPTION INSTRUCTIONS

This unit has been assembled and calibrated to operate from a 230VAC 50-60Hz $\pm 10\%$ power source. The power cord provided may have to be changed in order to accommodate correctly plugging into the power outlets in your facility.