

AUTOMATION

PRODUCTS
GROUP, INC.

Operator's Manual

PG-5000



Automation Products Group, Inc.

APG...Providing tailored solutions for measurement applications

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• Warranty and Warranty Restrictions

APG warrants its products to be free from defects of material and workmanship and will, without charge, replace or repair any equipment found defective upon inspection at its factory, provided the equipment has been returned, transportation prepaid, within 18 months from date of shipment from factory.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

No representation or warranty, express or implied, made by any sales representative, distributor, or other agent or representative of APG which is not specifically set forth herein shall be binding upon APG. APG shall not be liable for any incidental or consequential damages, losses or expenses directly or indirectly arising from the sale, handling, improper application or use of the goods or from any other cause relating thereto and APG's liability hereunder, in any case, is expressly limited to the repair or replacement (at APG's option) of goods.

Warranty is specifically at the factory. Any on site service will be provided at the sole expense of the Purchaser at standard field service rates.

All associated equipment must be protected by properly rated electronic/electrical protection devices. APG shall not be liable for any damage due to improper engineering or installation by the purchaser or third parties. Proper installation, operation and maintenance of the product becomes the responsibility of the user upon receipt of the product.

Returns and allowances must be authorized by APG in advance. APG will assign a Return Material Authorization (RMA) number which must appear on all related papers and the outside of the shipping carton. All returns are subject to the final review by APG. Returns are subject to restocking charges as determined by APG's "Credit Return Policy".

• Instructions

All units are factory calibrated prior to shipment.

NOTE: Due to the temperature sensitivity of the strain gages within the sensor, sudden temperature changes, such as holding an unmounted gauge by the sensor, will cause the readings on the display to fluctuate. Please install the gauge in your system before determining stability.

1. Zero Trimming

NOTE: Some units are equipped with zero “knob”.

If it becomes necessary to re-adjust the “Zero” on the display, this can be accomplished by turning the trimpot marked “Z” just to the left of the On/Off push button. On the PG-5000 there is either a zero adjustment knob or a black nylon cover screw. If the gauge has a cover screw, it is necessary to remove the cover screw to access the zero adjustment pot. An ideal zero is indicated by a reading of 000 with an intermittently flashing “-” sign.

NOTE: A jewelers screwdriver or an eyeglass repair screwdriver (supplied) is a suitable instrument. Do not make changes to the Span adjustment (the “S” pot to the right of the push button) as part of the zero trimming. The Span should only be changed as part of the re-calibration of a gauge with a known pressure source.

2. Use of Auto-Tare Feature

When the PG-5000 is first turned on you will notice that the display flashes for the first 4 seconds. If the On/Off button is pushed and held during this period, any existing reading will be re-set to zero. This allows the user to “Tare-Out” a starting weight in hydraulic weighing applications. To remove the Tare feature turn the unit off and back on again and do not push the On/Off button during the flashing period.

3. Battery Replacement (9 Volt Type)

The battery can be replaced simply by removing the single screw at the top of the battery door. Remove the old battery, unplug the cable connector and replace with Eveready type 216 or equivalent. Replace the battery door and secure with the self-tapping screw. (Do not overtighten)

NOTE: For best accuracy, re-calibration per step 4 should be performed at the time batteries are replaced.

4. Re-Calibration

This procedure requires a known pressure source of at least $\pm 0.1\%$ accuracy in order to fully utilize the accuracy potential of the PG-5000 (If not available, the gauge can be returned to APG for re-calibration.)

Procedure:

- A. Ensure the Gauge is at 0 psig (or vacuum if absolute), and adjust the zero as per instructions in step 1.
- B. Apply full scale pressure to the pressure port and adjust the span (“S”) pot until the display reads the correct pressure.
- C. Re-check the zero and re-adjust the zero (“Z”) pot if required.
- D. Repeat steps B and C, until no further adjustment is required.

5. Use Of Peak-Hold Feature (Optional)

After initially turning the gauge on (wait until the display stops flashing), a second push of the On/Off button energizes the peak-hold feature and causes an arrow to appear in the display. In this mode, only the highest reading sensed will be shown (until a higher reading comes along). This “peak” reading will be retained until the unit is reset by turning it off with a third push of the button. The sequence can then be re-initiated; one push for on in normal mode, two pushes for “peak-hold” mode and a third push for Off/Re-set.

6. Analog Output Option (0 To 2 VDC)

The 0–2 VDC analog output is accessed through a miniature “Phone Jack” (mate supplied) on the back of the unit (see External Power and 0-2 VDC Output Plug drawing on the last page). The “Tip” connection is “+ Output” and the center connection is “- Output”. **DO NOT CONNECT TO THE CASE CONNECTION.** This should only be used as a cable restraint. To minimize the effect on the battery life, the output should not be loaded with less than 100,000 ohms.

0 to 2 VDC Table

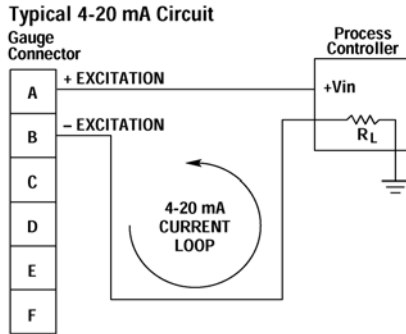
	0-2 VDC Output
Tip	+ Output
Center	- Output
Body	No connection

7. 4-20 mA Transmitter Option

When equipped with this option the gauge no longer operates from batteries but instead is “Loop Powered”. The loop connection is made to a 6 pin receptacle located at the rear of the unit (a mating plug is supplied). A voltage of between 9 and 32 VDC must be maintained at this connection (Pin A is “+” and Pin B is “-” see sketch) to insure proper operation. Completion of the earth or system ground (Pin F) is recommended for proper circuit protection.

Power supply voltage must be sufficient to maintain a minimum of 9 VDC at the gauge terminals after “dropping” voltage across R_L at full scale current (20 mA). Example: If $R_L = 250$ ohm then “drop” is $0.02 \text{ Amps} \times 250 \text{ ohm} = 5$ volts. Therefore power supply minimum is $5 \text{ V} + 9 \text{ V} = 14 \text{ V}$.

RE-CALIBRATION: The procedure is the same as in step 4, except that there are 2 sets of zero and span adjustments. The front panel controls affect the display and the rear controls (remove “battery” door) affect the 4/20 mA signal.



8. External Power (24 VDC) and 0 to 5 VDC Analog Output Option

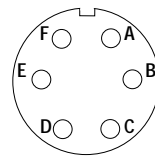
When equipped with this option the gauge no longer operates from batteries but instead is “externally powered”. Both the 24* VDC input power and the 0 to 5 VDC Analog Output are connected to the 6 pin circular connector on the rear of the unit. Pin connections are as follows:

**Actual range of input voltage is 12 to 31 VDC.*

24 VDC External Power and 0-5 V Analog Output

PIN -A- PLUS (+) 24 VDC POWER IN
 PIN -B- PLUS (+) ANALOG OUTPUT
 PIN -C- MINUS (-) ANALOG OUTPUT
 PIN -D- MINUS (-) 24 VDC POWER IN
 PIN -E- NO CONNECTION
 PIN -F- CASE GROUND

6 Pin Connector

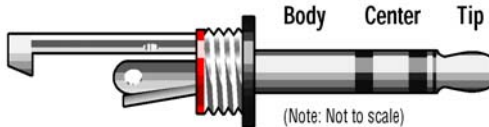


9. External Power Without Other Options

The external power input is accessed through a miniature “Phone Jack” (mate supplied) on the back of the unit. The “Tip” connection is “+ Power” and the center connection is “- Power”. **DO NOT CONNECT TO THE CASE CONNECTION.** This should only be used as a cable restraint.

It is important that you never remove or insert the "Phone Jack" connector into the gauge with the power turned on. This can damage the gauge and cause it to fail. **Only turn the power on after the "Phone Jack" has been inserted into the external power connector.**

External Power and 0-2 VDC Output Plug



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