Operator's Manual

PG-5

Full Access

DOC. 9003384
Rev. A1 3/10

APG⌗

Automation Products Group, Inc.
APG...Providing tailored solutions for measurement applications

Table of Contents

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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".

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3

Programming the PG5

Z Button   **On/Off Button**   **S Button**

Battery Meter   **Bar Graph**

Each of the three buttons on the PG5 performs multiple functions. The primary function applies when in standard operating mode. The secondary functions are used for programming operations and when special features, such as Peak-Hold, are enabled.

On/Off Button
Primary Function: Press and hold for 1 second to turn on/off the gauge.
Secondary Function: Press once to access the main setup menu.

Z Button
Primary Function: Press to "zero" the gauge reading (the reading must be less than 5% of full-scale in order to zero the gauge).
Secondary Function: Cycles through the options in the setup menus.

S Button
Primary Function: Cycles between the current, maximum, and minimum pressure readings.
Secondary Function: Used to accept the displayed option while in the setup menus.
Secondary Function: Resets the peak-hold reading when the peak-hold feature is enabled.

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FULL ACCESS MENU

```
                    RESET
                    ┌──────┐
        ┌─────────┐ │ YES  │
        │ MAXMIN  │→│ NO   │
        └─────────┘ └──────┘

                              ┌──────────┐
                              │   PSI    │
                              │   BAR    │
                              │   KPA    │  CUSTOM ONLY
                              │  CUSTOM  │─────────────┐
                   <= 120 psi │  MBAR    │             │
                    ┌─────────│  INHG    │             ↓
                    │         │  INH20   │        ┌──────────┐      ┌─────────┐
                    │         │  MMHG    │        │  SELECT  │      │  LBF    │
        ┌─────────┐ │         └──────────┘        │MULTIPLIER│─────→│  KN     │
        │  UNITS  │→│  > 120 psi                  └──────────┘      │  LBS    │
        └─────────┘ │         ┌──────────┐                          │  KG     │
                    │         │   PSI    │                          │ NEWTON  │
                    │         │   BAR    │                          └─────────┘
                    │         │   KPA    │
                    └─────────│  CUSTOM  │
                              │  KGCM^2  │  CUSTOM ONLY
                              │   MPA    │
                              │  FTH20   │
                              │  CMHG    │
                              └──────────┘

        ┌─────────┐ ┌──────┐
        │ P HOLD  │→│ ON   │
        └─────────┘ │ OFF  │
                    └──────┘

        ┌─────────┐ ┌──────┐
        │ ADVSET  │→│ AUTO │───→  OFF, 2 MIN, 4 MIN, 8 MIN, 16 MIN, 32 MIN
        └─────────┘ └──────┘
                    ┌──────┐
                    │DEC PL│───→  HI RES, LO RES
                    └──────┘
                    ┌──────┐
                    │SAMPLE│───→  SLOW, MEDIUM, FAST
                    └──────┘
                    ┌──────┐
                    │BAR  0│───→  SET BAR GRAPH 0%
                    └──────┘
                    ┌──────┐
                    │BAR100│───→  SET BAR GRAPH 100%
                    └──────┘
                    ┌──────┐
                 *  │RANGE │───→  SET RANGE
                    └──────┘
                    ┌──────┐
                 *  │AL SET│───→  SET ANALOG LOW SET PRESSURE
                    └──────┘
                    ┌──────┐
                 *  │AH SET│───→  SET ANALOG HIGH SET PRESSURE
                    └──────┘
                    ┌──────┐
                 *  │AL CAL│───→  SET ANALOG LOW CALIBRATION
                    └──────┘
                    ┌──────┐
                 *  │AH CAL│───→  SET ANALOG HIGH CALIBRATION
                    └──────┘

        ┌─────────┐ ┌──────┐
        │  TARE   │→│ ON   │
        └─────────┘ │ OFF  │
                    └──────┘
        ┌─────────┐ ┌──────┐
        │ DEFAULT │→│ YES  │
        └─────────┘ │ NO   │
                    └──────┘
        ┌─────────┐ ┌──────┐
        │  EXIT   │→│ YES  │
        └─────────┘ │ NO   │
                    └──────┘                    *
```

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5

Accessing the Mode Setting:

Step 1: Simultaneously press and hold the **On/Off** button and the **(S)** button for approximately 3 seconds. This will bring up the 3 digit mode number.

Step 2: Enter the desired mode number (see mode definitions below) by using **(Z)** to change the value of the flashing digit, and (S) to advance to the next digit.

Mode Definitions:

Mode 000: Full Access
- Provides access to all menu settings. **If no buttons are pushed for 1 minute, the gauge will revert back to Mode 003 (factory default).**

Mode 002: Limited Access
- Menu is locked
- (Z) button zeros the reading
- (S) cycles between the Max and Min readings
- On/Off functions only on battery powered gauges

Mode 003: Factory Default
- Full access **except** Full Scale Calibration is locked

Mode 005: Locked Access
- All buttons locked **except** the on/off button on battery powered gauges.

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Z Button   **On/Off Button**   **S Button**

Accessing the Main Setup Menu:

Step 1:   With gauge powered on, press the **On/Off** button once to enter the main setup menu.

Step 2:   Press **(Z)** to scroll through menu choices; *max/min, units, peak-hold, advanced settings, tare, default* and *exit.*

Exiting the Main Setup Menu:

Step 1:   While in the main setup menu, press **(Z)** until **EXIT** is displayed.

Step 2:   Press **(S)** to access the Exit options.

Step 3:   Press **(Z)** to until **YES** is displayed.

Step 4:   Press **(S)** to Exit the main setup menu and return to the standard operating mode.

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7

• Maximum/Minimum Reset (MAXMIN):

Pressing the (S) button while in standard operating mode will cycle between displaying the current pressure reading, the Maximum pressure reading and the Minimum pressure reading. The maximum and minimum readings will be stored until the gauge is powered down or the max/min readings are reset.

Resetting the Max/Min readings:

Step 1:   Press the **On/Off** button once to enter the main setup menu.
Step 2:   Press **(Z)** to cycle through the options until **MAXMIN** is displayed.
Step 3:   Press **(S)** to access the Max/Min reset options.
Step 4:   Press **(Z)** to toggle between **YES** and **NO** until **YES** is displayed.
Step 5:   Press **(S)** to reset the Max/Min readings and return to the main setup menu.

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• Units of Measure (UNITS):

Allows the user to select the unit of measure to be displayed as the pressure reading.

Options:

For gauges over 120 psi:

PSI	(pounds per square inch)
bAR	(bar)
KPA	(kilopascals)
*CUSTOM	(see "Using Custom Units" on next page)
KGCM^2	(kilograms per cubic centimeter)
MPA	(megapascals)
FTH20	(feet of water @ 60 F)
cmHG	(centimeters of mercury)

For gauges less than 120 psi:

PSI	(pounds per square inch)
bAR	(bar)
KPA	(kilopascals)
*CUSTOM	(see "Using Custom Units" on next page)
mbAR	(millibar)
INHG	(inches of mercury)
INH20	(inches of water @ 60 F)
mmHG	(millimeters of mercury)

Setting the Unit of Measure:

Step 1: Press the **On/Off** button once to enter the main setup menu.

Step 2: Press **(Z)** to cycle through the options until **UNITS** is displayed.

Step 3: Press **(S)** to access the Units options.

Step 4: Press **(Z)** to cycle through setting options until the desired unit of measure is displayed.

Step 5: Press **(S)** to apply the setting and return to the main setup menu.

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9

Using Custom Units (CUSTOM):

The Custom Units setting allows the user to display a volumetric weight by applying a conversion factor to the pressure reading.

NOTE: The conversion factor must be calculated using Pound per Square Inch (psi) as the base unit of measure.

Setting the Custom Units feature:

Step 1: Calculate the conversion factor from psi to the desired unit of measure.

Step 2: Press the **On/Off** button once to enter the main setup menu.

Step 3: Press **(Z)** to cycle through the options until **UNITS** is displayed.

Step 4: Press **(S)** to access the Units setting options.

Step 5: Press **(Z)** to cycle through the Units options until **CUSTOM** is displayed.

Step 6: Press **(S)** to access the Custom Units setting. A 5-digit conversion factor will appear with the first digit flashing.

Step 7: Press **(Z)** to change the value of the flashing digit (options: 0-9).

Step 8: Press **(S)** to accept the flashing digit and advance to the next digit......repeat steps 7 and 8 as necessary.

Step 9: After the last digit is accepted by pressing **(S)**, use **(Z)** to scroll through the custom units of measure; **LBF**, **KN**, **LBS**, **KG**, and **NEWTON**.

Step 10: Press **(S)** to accept the custom unit and return to the main setup menu.

• Peak-Hold (P HOLd):

When the Peak-Hold is enabled, the gauge will display the "peak" or maximum pressure reading since the gauge was powered on or the Max/Min value was reset.

NOTE 1: When the Peak-Hold feature is enabled, a small box containing the words PEAK HOLD will be displayed in the upper left corner of the display.

Options: Off or On

Enabling the Peak-Hold feature:

Step 1:   Press the **On/Off** button to enter the main setup menu.
Step 2:   Press **(Z)** to cycle through the options until **P HOLd** is displayed.
Step 3:   Press **(S)** to access the Peak-Hold setting options.
Step 4:   Press **(Z)** to toggle between **OFF** and **ON**.
Step 5:   Press **(S)** to apply the displayed setting and return to main setup menu.

NOTE 2: The peak value can be reset by pressing **(S)** with the Peak-Hold function enabled.

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11

• Advanced Settings (AdVSET):

The Advanced Settings menu is used to customize the LCD display and to setup any optional features, such as an analog output.

Auto-Off (AUTO):

This function is applicable to battery powered units only. The Auto-Off feature allows the user to designate the time of inactivity (no buttons pushed) until the gauge automatically powers down.

Options: 2 MIN, 4 MIN, 8 MIN, 16 MIN, 32 MIN and OFF

NOTE: Selecting OFF disables the Auto-Off feature; the gauge will then remain powered indefinitely as long as there is sufficient voltage being supplied (~3.3V).

Setting the Auto-Off feature:

Step 1:   Press the **On/Off** button to enter the main setup menu.
Step 2:   Press **(Z)** to cycle through the menu options until **AdVSET** is displayed.
Step 3:   Press **(S)** to enter the Advanced Settings menu.
Step 4:   Press **(Z)** to cycle through the menu options until **AUTO** is displayed.
Step 5:   Press **(S)** to access the Auto-Off setting options.
Step 6:   Press **(Z)** to cycle through setting options until the desired setting is displayed.
Step 7:   Press **(S)** to apply the setting and return to main setup menu.

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Decimal Place (dEC PL):

The reading can be set to display in High Resolution (HI RES) or Low Resolution (LO RES) mode. Switching between high and low resolution will shift the displayed reading by one decimal place position.

NOTE: When Low Resolution mode is enabled on a gauge with 0 decimal place positions, the display will increment in factors of 10.

Options: HI RES (high resolution) or LO RES (low resolution)

Setting the Decimal Place feature:

Step 1: Press the **On/Off** button to enter the main setup menu.

Step 2: Press **(Z)** to cycle through the menu options until **AdVSET** is displayed.

Step 3: Press **(S)** to enter the Advanced Settings menu.

Step 4: Press (Z) to cycle through the options until **dEC PL** is displayed.

Step 5: Press **(S)** to access the Decimal Place setting options.

Step 6: Press **(Z)** to cycle between **HI RES** (high resolution) and **LO RES** (low resolution).

Step 7: Press **(S)** to apply the displayed setting and return to main setup menu.

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13

Sample Rate (SAMPLE):

Adjusts the rate at which the gauge takes sample readings.

NOTE: Setting the Sample Rate to "SLOW" will help preserve battery life
(when applicable) and will also help to smooth rapidly fluctuating
readings.

Options: SLOW (4x/second), MEdIUM (8x/second), FAST (16x/second)

Setting the Sample Rate feature:

Step 1: Press the **On/Off** button to enter the main setup menu.
Step 2: Press **(Z)** to cycle through the options until **AdVSET** is displayed.
Step 3: Press **(S)** to access the Advanced Settings menu.
Step 4: Press **(Z)** to cycle through the options until **SAMPLE** is displayed.
Step 5: Press **(S)** to access the Sample Rate setting options.
Step 6: Press **(Z)** to cycle through the setting options until the desired setting
is displayed.
Step 7: Press **(S)** to apply the displayed setting and return to main setup menu.

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Bar Graph 0% (bAR 0) & 100% (bAR100) Settings:

Allows the user to define the reading values associated with 0% and 100% on the display bar graph. Bars will appear/disappear in 10% increments of the total span between the two values.

NOTE: The 0% reference does not have to be the lower pressure setting; 0% can be set as the higher pressure setting, thereby causing the bar graph to increase as the pressure decreases. Negative pressure settings can also be used as either the 0% or 100% reference points.

Setting the Display Bar Graph:

Step 1: Press the **On/Off** button once to enter the main setup menu.

Step 2: Press **(Z)** to cycle through the options until **AdVSET** is displayed.

Step 3: Press **(S)** to access the Advanced Settings menu.

Step 4: Press **(Z)** to cycle through the options until **BAR 0** is displayed.

Step 5: Press **(S)** to access the Bar Graph 0% value. A 5-digit number will appear with the first digit flashing.

Step 6: Press **(Z)** to change the value of the first flashing digit (options: 0-9 or "-").

Step 7: Press **(S)** to accept the value of the flashing digit and advance to the next digit......repeat steps 7 and 8 until the desired 0% reading is fully entered. After the last digit is accepted by pressing **(S)**, the display will return to the main options menu.

Step 8: Press **(S)** to reenter the Advanced Settings menu.

Step 9: Press **(Z)** to cycle through the options until BAR100 is displayed.

Step 10: Repeat Steps 5-7 to enter the Bar Graph 100% value.

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Full-Scale Range Adjust (RANGE):

Allows the user to adjust the reading at full-scale pressure. The reading can be adjusted by +/-10% full-scale.

NOTE: The pressure reading must be within 5% of the full-scale value in order to make Range adjustments. For example, a 1000 psi gauge would need to be reading between 950 psi and 1050 psi in order to adjust the Range feature. If the reading is not within 5% of full scale, NOAdJU (No Adjustment) will be displayed when trying to adjust the Range.

Adjusting the Full-Scale Range:

Step 1: Ensure that the pressure reading is within 5% of full-scale.
Step 2: Press the **On/Off** button to enter the main setup menu.
Step 3: Press **(Z)** to cycle through the options until **AdVSET** is displayed.
Step 4: Press **(S)** to access the Advanced Settings menu.
Step 5: Press **(Z)** to cycle through the options until **RANGE** is displayed..
Step 6: Press **(S)** to enter the Range adjust mode.
Step 7: Press **(Z)** to <u>**increase**</u> the reading, or press **(S)** to <u>**decrease**</u> the reading.
Step 8: Press the **On/Off** button to accept the adjusted reading and return to the main setup menu.

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Analog Low (AL SET) & Analog High (AH SET) Setpoints:

Allows the user to define the reading values associated with the Low Analog
signal (i.e. 4mA or 0V) and the High Analog signal (i.e. 20mA, 2V or 5V).

NOTE: The analog signal can be spanned over any portion of the pressure
range, and can also be inverted by setting the Analog Low Setpoint as
the higher pressure value. Negative pressure values can also be used
as either the Analog High or Analog Low Setpoints.

Setting the Analog Signal Span:

Step 1:   Press the **On/Off** button once to enter the main setup menu.
Step 2:   Press **(Z)** to cycle through the options until **AdVSET** is displayed.
Step 3:   Press **(S)** to access the Advanced Settings menu.
Step 4:   Press **(Z)** to cycle through the options until **AL SET** is displayed.
Step 5:   Press **(S)** to access the Analog Low setpoint value. A 5-digit number
will appear with the first digit flashing.
Step 6:   Press **(Z)** to change the value of the first flashing digit
(options: 0-9 or "-").
Step 7:   Press **(S)** to accept the value of the flashing digit and advance to the
next digit......repeat steps 7 and 8 until the desired Analog Low reading
is fully entered. After the last digit is accepted by pressing **(S)**, the
display will return to the main options menu.
Step 8:   Press **(S)** to reenter the Advanced Settings menu.
Step 9:   Press **(Z)** to cycle through the options until **AH SET** is displayed.
Step 10: Repeat Steps 5-7 to enter the Analog High setpoint value.

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Analog Low (AL CAL) & Analog High (AH CAL) Calibration:

Allows the user to calibrate or "trim" the endpoints of the analog signal output (i.e. 4mA & 20mA or 0V & 2V/5V)

Calibrating the Analog Signal End-Points:

Step 1: Use a calibrated meter to monitor the analog output signal.

Step 2: Force a low analog output signal (i.e. 4mA or 0V) either by adjusting the applied pressure or by adjusting the Analog Setpoints (see "Analog Setpoints" on page 18 for details).

Step 3: Press the **On/Off** button once to enter the main setup menu.

Step 4: Press **(Z)** to cycle through the options until **AdVSET** is displayed.

Step 5: Press **(S)** to access the Advanced Settings menu.

Step 6: Press **(Z)** to cycle through the setup options until **AL CAL** is displayed.

Step 7: Press **(S)** to access the Analog Low Calibration value. A 5-digit number will appear with the first digit flashing.

Step 8: Press **(Z)** to change the value of the flashing digit.

NOTE: Increasing this 5-digit number will increase the output signal. Changing the digit farthest to the left will produce the coarsest adjustment, while each successive digit moving to the right will cause subsequently finer adjustments to the output signal.

Step 9: Press **(S)** to accept the value of the flashing digit and advance to the next digit......repeat steps 7 and 8 until the desired Analog Output Signal displayed ont he meter. After the last digit is accepted by pressing **(S)**, the display will return to the main setup menu.

Step 10: Press **(S)** to reenter the Advanced Settings menu.

Step 11: Press **(Z)** to cycle through the options until **AH CAL** is displayed.

Step 12: Repeat Steps 5-7 to adjust the Analog High Calibration value.

• Tare (TARE):

Enabling the Tare function will set the current pressure reading as the zero reference pressure in order to measure a net change in pressure as opposed to measuring the gross pressure.

Enabling the Tare feature:

Step 1: Press the **On/Off** button once to enter the main setup menu.
Step 2: Press **(Z)** to cycle through the options until **TARE** is displayed.
Step 3: Press **(S)** to access the Tare setting options.
Step 4: Press **(Z)** to toggle between **OFF** and **ON**.
Step 5: Press **(S)** button to apply the displayed options and return to main setup menu.
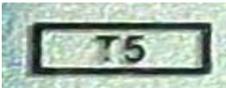
NOTE 1: When tare function is enabled, the T5 symbol will appear in the lower left corner of the display.

WARNING: Do NOT disconnect the gauge from the pressure fitting while the tare function is enabled. The gauge may still be under pressure even though the reading shows 0.

NOTE 2: If the maximum gross full-scale pressure value is reached while the Tare feature is enabled, the PG5 will automatically disable the Tare feature and return to reading the gross pressure in order to help prevent the user from unwittingly overpressuring the gauge.

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• Default (dEFAUL):

Used to reset the gauge to the factory default settings.

Resetting the gauge to factory default settings:

Step 1:   Press the **On/Off** button once to enter the main setup menu.

Step 2:   Press **(Z)** to cycle through the options until **dEFAUL** is displayed.

Step 3:   Press **(S)** to access the Default options.

Step 4:   Press **(Z)** to cycle between **NO** and **YES**.

Step 5:   Press **(S)** to apply the displayed setting and return to main setup menu.

Wiring the PG5

<u>Battery Replacement</u>:

The battery is accessed by removing the single screw at the top of the battery cover on the back of the gauge.

NOTE: Do not overtighten the screw when securing the battery cover.

<u>Externally Powered, No Output</u>:

Externally powered gauges without an analog output are powered using an 1/8 inch stereo jack connector (mate supplied) on the back of the gauge. The "Tip" connection is "+ Power" and the "Center" connection is "- Power".

WARNING: Always turn off the supply power before inserting or removing the stereo jack plug. Failure to do so can damage the gauge.

NOTE: Do not connect to the stereo jack's case connection.

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21
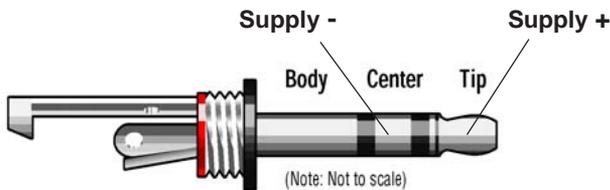
4-20 mA Option (loop powered):
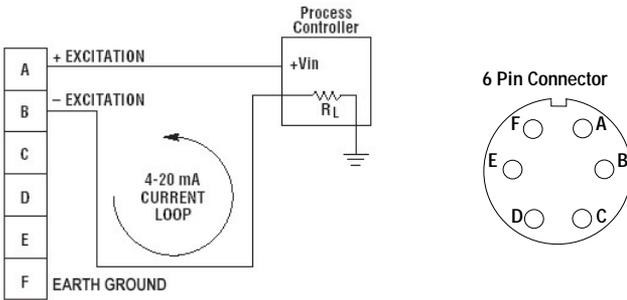
NOTE 1: The supply voltage must be sufficient to maintain a minimum of 9 VDC after "dropping" voltage across the load resistance with the output at 20mA. Example: If RL = 250 ohm then "drop" is 0.02 Amps X 250 ohm = 5 volts. Therefore power supply minimum is 5 V + 9 V = 14 V.

NOTE 2: Completion of the earth ground (Pin F) is recommended for proper circuit protection.
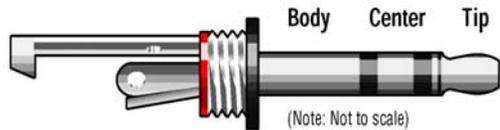
Externally powered with 0-5 VDC or 0-2 VDC analog output:
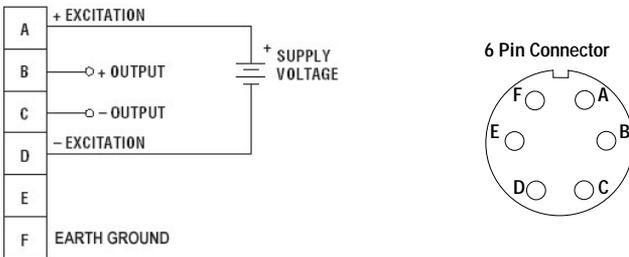
NOTE: Completion of the earth ground (Pin F) is recommended for proper circuit protection.

Battery powered with 0-2 VDC output option:

 The 0–2 VDC signal is accessed through a stereo jack connection on the back of the gauge.

0-2 VDC Output

Tip	+ Output
Center	– Output
Body	No connection

(Note: Not to scale)

NOTE 1: Do not connect to the stereo jack's case connection.

NOTE 2: To minimize the effect on the battery life, the output should not be loaded with less than 100k ohms.

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23

Firmware Release Notes

PG5v100.hex Created 1/20/2009

    First Release of Software

PG5V101.hex Created 2/13/2009

    -> **Updated Zero function to read NOZERO when more than 5% of Full Scale**

    -> **Updated Tare function to read NOTARE when more than full scale and if gauge is in TARE T5 segment instead of T1**
        and shuts off when greater than full scale

    -> **Fixed On/Off button on Power Up to wait to be released before going into the Menu**

PG5v102.hex Created 3/16/2009

    -> **Added different sampling rates selectable from the Menu slow,medium,fast**

    -> **Disabled the lo res option for units with no decimal place in reading**

    -> **Fixed Peak Hold to Reset by pushing Select Button to reset the max value to the current reading**

    -> **Fixed the Leading Zeros when Peak Hold enabled and when using the Custom Multiplier in the Menu**

    -> **Locked Menu has peak hold enable/disable with Select button not in Menu, Menu has Units -> lbs,kg, Newton -> Can**
        Zero Reading Z button

    -> **Fixed External Power Auto_Off Option and Sampling Rate**

    -> **Fixed ON/OFF Button when Auto_Off enabled it went into the MENU reset the Flag when Auto Off shutdown**

    -> **Reset Auto Off timer every time the Zero or Select Button are pushed.**

PG5v103.hex 4/7/2009

    -> **Added 4 options to setup the analog output from the menu and appear only with ouputs enabled**

    -> **Added fsw to units and changed to lockout all other units when calibration to other unit besides psi**

    -> **Added Bar Graph Zero and Full Scale adjustment to the Menu**

    -> **Added Range adjustment in the Menu**

    -> **Added Modes to Lockout the Menu and give limited access**

PG5v104.hex created 4/27/2009

    -> **Changed how Units are displayed when other than psi only that unit is displayed**

PG5v105.hex created 5/27/2009

    -> **Fixed conversion problems with units ftH20, cmHg**

    -> **Fixed Bar Graph zero and Full Scale to scale to the right pressure**

    -> **Fixed High and Lo Res for the different units and to have a dummy zero for correct units**

Firmware Release Notes (continued)

PG5v106.hex created 6/19/2009

    -> Renamed the SETUP options displayed for bargraph and analog output setup.

    -> Made Max reading not reset using shortcut only allowed in MENU Reset

    -> By pressing S while not in Menu the max, then min values are displayed

    -> Added Decimal Place while setting the bargraph to the psi equivalent.

    -> Added Decimal Place for Analog Output Set points

    -> Renamed SETUP to ADVSET in Menu

    -> When changing range the value then overwrites the default multiplier for field calibration

PG5v107.hex created 8/12/09

    -> If Tare is enabled and not in the menu the Z button will rezero the pressure reading

    -> Added Units of Measure TONS for customer

PG5v108.hex created 11/15/09

    -> Fixed Bar Graph when recalibrating gauge using the range function in the menu.

    -> Fixed Glitch with Updating Range and re-zeroing gauge in Mode 000.

PG5v109.hex created 12/11/09

    -> Fixed Glitch with entering mode 2 and returning to mode 3 for special calibration units which changed the units of measure.

    -> Fixed Hi and Low resolution glitch with different units of measure.

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Automation Products Group, Inc.
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CE DECLARATION OF CONFORMANCE
PG-5 MODEL DIGITAL PRESSURE GAUGE

March 30, 2009

Prepared By:	Elden Tolman
	Product Development Engineer
	Automation Product Group, Inc.
	1025 West 1700 North
	Logan, UT 84321
Test Specification:	EN 61326:2002
Test Method:	ICE 61000
Manufacturer:	Automation Products Group, Inc.
	1025 West 1700 North
	Logan, UT 84321
Test Location:	815 West 1800 North
	Logan, UT 84321

1. CERTIFICATION

I HEREBY CERTIFY THAT:
The measurements shown in this test report were made in accordance with the
procedures given in European Council Directive 89/336/EEC. The equipment
was passed and the test performed according to European Standard EN
61326:2002 using method ICE 61000.

Karl Reid   4/3/09

Product Line Manager   Date

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2. SUMMARY OF RESULTS

The PG5 model digital pressure gauge has been found to be fully compliant with the following standards and specifications:

Test	Specification	Method	Resulting Performance Criterion
Radiated Emissions	EN 61326 Class A:2002	EN 61326:2002	Pass
ESD Immunity	EN 61326 Annex A	ICE 61000-6-2	Performance Criteria A
Radiated Immunity	EN 61326 Annex A	ICE 61000-4-3	Performance Criteria B

3. PERFORMANCE CRITERIA

3.1 Pass:
In the case of Radiated Emissions, no significant readings were observed.

3.2 Performance Criteria A:
The device will continue to operate as intended. No degradation of performance or loss of function is allowed below the performance level specified by the manufacturer, when the device is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and what the user may reasonably expect from the device if used as intended.

3.3 Performance Criteria B:
The device will continue to operate as intended after the test. No degradation of performance or loss of function is allowed below the performance level specified by the manufacturer, when the device is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and what the user may reasonably expect from the device if used as intended.

3.4 Performance Criteria C:
Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of controls.

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Logan, UT 84321