

Menu Item Descriptions (SEE PAGES 47 AND 48)

- 201 Rate Prec—The number of decimal points for the flow rate (top line) reading (max 3).
- 202 Total Prec—The number of decimal points for the total display (bottom line) reading (max 2).
- 210 Max Val—Full Scale Setting.
- This value will recalculate when engineering units are changed. For example, 1000 SCFM Full Scale becomes 60,000 SCFH if the engineering units are changed to SCFH (the change will be observed after the meter is put into "Flow Mode" (the normal mode [100 on lap-top, or Keypad Shortcut (hold "Forward/Up," then press "Flow/Shift")]).
 - This value will also recalculate if pipe area is changed. For example, a Full Scale of 100 SCFM in a 6" pipe (.2006 sq. ft.) will have a new full scale of 173.2 SCFM in an 8" pipe (.3474 sq. ft.).
 - At any time you can change the Max Val (Full Scale Value) below the original Full Scale Value, adjusted for the new Engineering units, or below the Full Scale value adjusted for the new pipe area. If you do so, you will have a new lower Full Scale (i.e., the new Value will equal 20mA), and the display will be limited to that value. This change has the effect of lowering the range of the meter. You can raise the Full Scale Value higher than the original calibration value, but in that case the readings may be less accurate (see footnote 3 on page 48). (Note: The original calibration value is noted on the Certificate of Conformance.) In some cases the calibration value may be higher, if for example there is some uncertainty as to the proper Full Scale Value. For example, a customer may request a Full Scale Value of 100 SCFM, but Sage may add an extra 20% of calibration data (to 120 SCFM). In that case, the Full Scale Value can be changed up to 120 SCFM.
 - This value will also recalculate when a K-factor (item 304) is entered. For example, a K-factor of .8 will cause a Full Scale of 100 SCFM to become 80 SCFM. Be careful, however. You will generally want to restore the Full Scale setting back to 100 SCFM by manually changing item 210 back to 100 SCFM, so that 100 SCFM will still report an output of 20mA (see item 304 description). Otherwise, when the display reads 80 SCFM, the output will read 20mA instead of 16.8mA.
- 211 Min Cutoff (also referred to as Low Flow Cutoff (LFC) or Zero Cutoff)—If it is desired to "force" the meter flow rate to read zero, even if there is a small amount of flow (such as a leak, some gas convection, higher zero pressure than specified), then simply select a value. If for example, your meter is calibrated from 0 to 100 SCFM, by putting a value of 5 in item 211, any flow up to, or equal to 5 SCFM will display 0 (zero), and thus the totalizer will not advance. As soon as the actual flow exceeds 5 SCFM, normal operation is restored. The following applies to the 4-20 ma Scaling: Normally, the 4 ma output corresponds to zero (0) Flow Rate. If, however, a Low Flow Cutoff (LFC) was specified, then the user should set the 4 ma value to the LFC valve. (i.e. If a 0–100 SCFM is set to have a 3 SCFM LFC, then the user should set 4-20 ma to 3 SCFM to 100 SCFM instead of 0 SCFM to 100 SCFM. By not doing so, a slight non-linearity would result). Note, any Flow Rate at or below the LFC valve will read 0 on the display.
- 220 Temp Deg—This controls whether the displayed temperature reads in Fahrenheit or Centigrade. If "0" is selected, the temperature reading will always be blank. (Note: The temperature reading will also blank if the totalizer exceeds a value that requires 7 digits (i.e., 99999.9 or 9999999). The next count will cause the entire temperature display to blank. (The temperature will be restored once the totalizer is reset, or if the totalizer "rolls over" [exceeds 12 digits]).
- 221 Temp Max—The Full Scale of the temperature. Example 200°F=20mA.
- 222 Temp Min—Example 40°F=4mA.
- 230 LCD Address—Factory Only.
- 303 Zero Offset—Factory Only.
- 304 K-Factor—1) Used to bias the readout. For example, if meter reads 100, and customer feels 102 is correct, then change K-Factor to 1.02
K-Factor—2) Used to correct gravimetric units (such as LBS/Min, Kg/Sec, etc.) for gases other than Air. Put in the specific Gravity of the gas. For example, for Nitrogen, use 1.037
K-Factor—3) Can be used to correct for for a different Pipe Area than the meter's original set up. For example, if calibrated initially in a 4" Schedule 40 Pipe (.0884 sq. ft.), and then re-installed into a 6" Schedule 40 Pipe (.2006 sq. ft.), enter a K-factor to 2.269 (original factory K-factor was 1.000). Note 2.269 = .2006/.0884. Normally, you'll use item 305 for a pipe change
NOTE: THE K-FACTOR IN THE ABOVE EXAMPLES WILL NOT ONLY BE REFLECTED IN THE DISPLAY, BUT ALSO IN THE 4-20 ma OUTPUT
- 305 Pipe Area—The pipe area must be changed any time the meter is inserted into a different pipe than originally specified (except for velocity units, such as "SFPM"). For example, if the original pipe area was .2006 square feet (for a 6" Sch 40 pipe), and you decide to insert the meter in an 8" Sch 40 pipe, change the pipe area to .3474 square feet so the SCFM, (or other flow units) will read correctly. This will also change the Full Scale (see "210-b" description). It is best to "Save" (Item 100) immediately after changing pipe area.
- 306 DO NOT USE (Unless you have Rev. 2.045).
- 307¹ Reset Total—You can reset the totalizer to zero. Note: by enabling item 720 (Ext Zero Enable), you can reset the totalizer externally. That is, you can reset the totalizer with a contact closure (terminals 15 and 17 on SIG or SRG). It is recommended that you Reset Total if engineering units are changed (i.e. from SCFM, or vice versa, or when channels (calibrations) are changed.
- 308–311 Factory Only.
- 330 Factory Only.
- 400 Change Engineering Units?
- 503 Avg Flow—View the average flow for the past hour.
- 504 View the average temperature for the past hour.

¹ The Totalizer, as well as Trip High and Trip Low Values (items 510 to 522) need to be reset if the channels are changed (see Menu items 307 and 530) if you want to clear those readings.

² The Totalizer (Item 307) should be reset in some cases (i.e. LBS. to SCF or vice versa).

MENU ITEM DESCRIPTIONS CONTINUED FROM PAGE 49

- 505 RTD Power—Reports true sensor raw output, and can be used in the Sensor Functionality and Zero Calibration Self Check when using the keypad.
- 506 ACT Flow—Contact Factory for assistance.
- 507 ADC TV—Factory Only.
- 510¹ High Flow—This is the highest flow recorded since the last time the data was cleared. (See 530, Clear Data.)
- 511¹ High Time—This is the Time stamp when the High Flow was recorded.
- 512¹ High Date—This is the Date stamp when the High Date was recorded.
- 520¹ Low Flow—This is the lowest flow recorded since the last time the data was cleared. (See 530, Clear Data.)
- 521¹ Low Time—This is the Time stamp when the Low Flow was recorded.
- 522¹ Low Date—This is the Date stamp when the Low Flow was recorded.
- 530 Clear Data—This clears the High Flow, Low Flow, their Time and Date stamps, as well as Average Flow.
- 601–612 Factory Only.
- 613–618² These are the coefficients (a polynomial that linearizes the raw flow data so the display, and the 4-20mA outputs are linearly proportional to the flow rate). Do not change these values unless the Factory authorizes (such as, to extend the calibration curve).
- 619 Filter Coeff—The filter coefficient is used to smooth out the flow signal (a value of 0.1000 is normal). For example, if you have an unusually turbulent flow, perhaps a pulsating flow, you may want to smooth out the reading and output by lowering the value (if you lower it, it smooths [or averages] the flow reading as well as the output. To speed up the flow response, increase the value. The speed of response is limited by the thermal response of the sensor (maximum of 1 second per time constant on a step change).
- 620–638 Relays (See pages 52 & 53).
- 701¹ Chan Sel—Selects Channels A–D (assuming meter is calibrated for more than one channel). If “4” selected, then channel can be selected externally (unless item 720 is set to 1). For SIG and SRG Series, connect 16 to 17 for Channel B, 15 and 17 for Channel C, both for Channel D, and no connection for Channel A. (If “A” displayed in top left corner of display, then meter is in “External Mode”, otherwise blank.)
- 702 Sample Rate—This setting changes the update period of the display, as well as the 4-20mA output. Low Value=Fast; High Value=Slow (10 is the default=200 msec).
- 703 Serial Number—Display the Meter Serial Number (the value cannot be changed). Note, the Serial Number displays for approximately 2 seconds upon Meter power-up during the initializing phase. The Serial Number can also be displayed during normal (flow) operation by depressing the “Back/Down” button.
- 704 New Passcode—allows the user to modify the Passcode from the factory default “99999”.
CAUTION: If you change the passcode, you must store the new passcode in a safe place. If you forget this new passcode, there is no “back door” to make any further menu changes in the field.
- 705 Time—Sets the current time of day (in 12 hour or 24 hour format). Use the same format convention as the previous value.
- 706 Date—Sets the current date. Use the same format convention as the previous value.
- 707 Back Lighting—The factory default is “0”=Auto (the back lighting comes on for 1 minute with any key press). Change value to “1” in order to keep the back lighting on. (Note: In the SIG and SRG Series, the back lighting can consume as much as 100 mA.)
- 708 Factory All—Restores the original factory settings for all items on all channels (Channels A–D).
- 710 Format EEPROM—Factory Only.
- 711 Back up EEPROM—Factory Only.
- 712 SDB PreCharge—Factory Only.
- 720 External Zero Enable—Clears the totalizer (resets to a value of 0) when External Select C terminal is grounded, unless item 701 is set to 4. (See Terminal Hook-up for SIG, SRG.) Note, when the totalizer requires more than 7 digits (including a decimal), it will automatically take precedence over the temperature display. The entire temperature display will blank out, allowing all 12 digits to display. Beyond 12 digits, the totalizer will “roll over” to zero (0). Item 720 allows you to manually reset the totalizer to zero (0).
Note: To disable totalizer, enable item 720 and jumper to ground External Select “C” Terminal (see page 17).
- 730 Power Splash—Provides custom text upon Start Up.
- 735 Engineering Units Mode—Provides custom engineering units (contact Factory for assistance to avoid conflicts between Flow Rate Display and total).
- 740 Meter Address—Factory Only.
- 750 Passcode—Factory Only.

¹ The Totalizer, as well as Trip High and Trip Low Values (items 510 to 522) need to be reset if the channels are changed (see Menu items 307 and 530) if you want to clear those readings.

² **NOTE:** do not round off any newly supplied coefficients when entering. Although all the digits will not be displayed, they will be required by the software calculations. Do not use the keypad for entering coefficients, since some of the least significant digits will be lost.