



FLOW RATE CONTROLLER

SC - FLO Setup Manual
(R2/R2A/R2S/R2AS)

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1 INTRODUCTION

The SC - FLO controller is the ideal solution for a variety of flow rate and batching applications.

This controller has been designed for ease of use, with intuitive, scrolling text prompts that guide you step-by-step through the setup process. The front panel features a dual-row LCD display, allowing you to view total and flow rate simultaneously. It also includes 5 buttons for simple operator interface, and a serial port if desired.

The SC - FLO is available as a standard R2 model, and can also be purchased with the addition of an analog output (R2A), a serial port (R2S), or both (R2AS).

2 SPECIFICATIONS

Input	0-24V DC, 0-30V AC
Sensor type	Default NPN (open collector). Can be factory configured for PNP, Mag (20mV to 30V), TTL, digital, closed contact or NAMUR

OPTIONAL OUTPUTS

Analog output	Isolated 16-bit 4-20mA/0-10V output [fully scaleable]. Window programmable over any range within the full-scale range of the controller
Serial port	Isolated RS232 or RS485 <i>Modes:</i> Texmate ASCII, Modbus RTU slave, Ranger A output. <i>Data rates:</i> 300-38400. Odd, even or no parity.

Power supply	HV: 85-265V AC/95-370V DC or LV: 15-48V AC/10-72V DC
Relay outputs	2 programmable form A relays with hysteresis & delay on make
Sensor calibration	Direct K factor entry or pulses per unit of measurement
K factor ranges	3 ranges for K factors, from 0.1 to 99.9999, 999.999 or 9999.99
Volumetric pulse	Adjustable pulse width from 0.1 to 10.0 seconds (Appendix B)
Frequency	2Hz to 10KHz
Excitation	24V DC (50mA max)
Accuracy	0.005%
Temp drift	Typically 2ppm/°C
Security	Setup is PIN code protected
Case	101 x 45 x 119.5mm (H x W x D) Mounts on 35mm DIN rail

2.1 Flow rate

Flow rate	/sec, /min or /hour (5.2E)
Rate multiplier	x 0.0001 to x 1000 (5.2F)
Display	Rate displayed in the top row during normal operation

2.2 Totalizer

Resolution	x1, x10 ³ , x10 ⁶ (5.3C)
Reset	Reset manually (4.6, 8.1), at power up (5.3D), or via setpoint logic (6.2E).
Display	Total displayed in the bottom row during normal operation

3 CASE DIAGRAMS

Fig 1 - Front View



BUTTON PRESS FUNCTIONS

Refer to Section 3, Fig 1

① **Program** - This button is typically used to save your settings and advance to the next step in the setup process.

② **Up** - This button is typically used to scroll through options or increase values in the setup menu.

Pressing this button from the main display will show the current values for **Rate** and **Peak** [rate]. See Section 8.

③ **Down** - This button is typically used to scroll through options or decrease values in the setup menu.

Pressing this button from the main display will show the current values for **Total** and **Valley** [rate]. See Section 8.

④ **Function 1** - This button is used to access the **input setup and calibration** menu. See Section 5.

⑤ **Function 2** - This button is used to access the **setpoint setup** menu (see Section 6) and the **setpoint direct access** menu (see Section 7).

Fig 2 - Top View

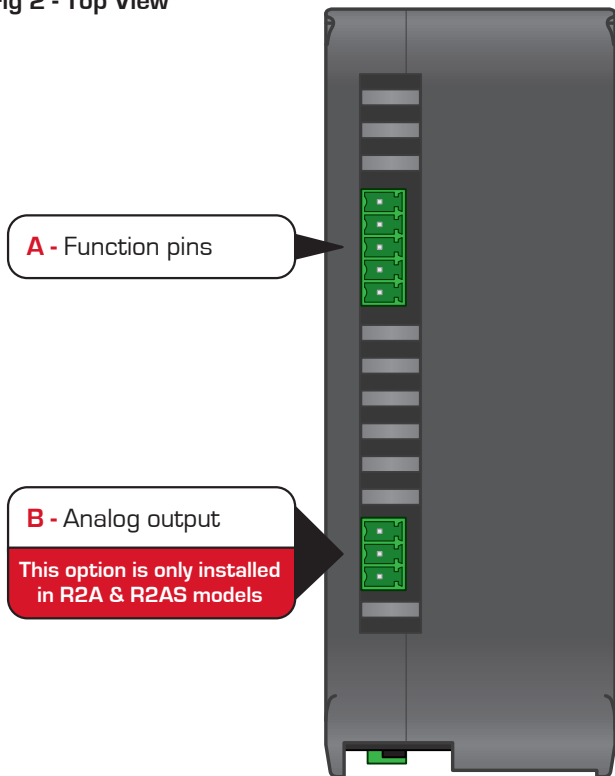
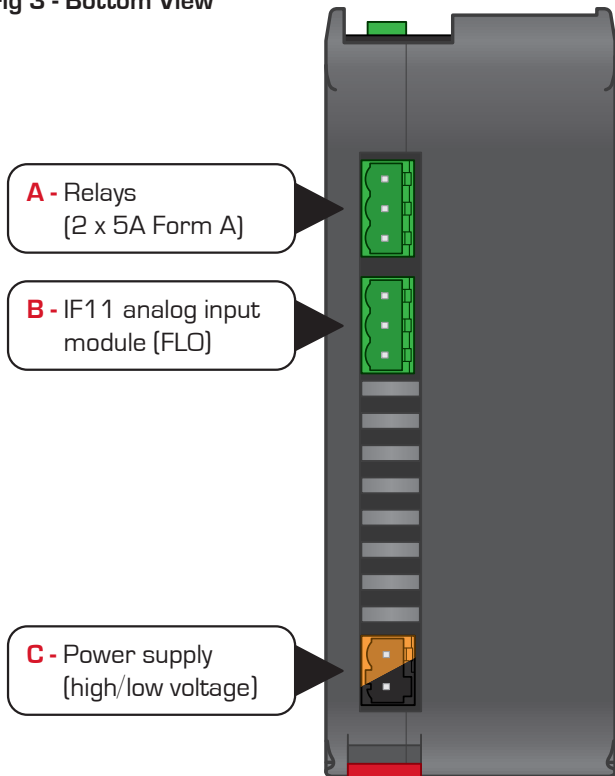


Fig 3 - Bottom View



4 WIRING

Before you begin:

Determine whether your controller is configured for low or high voltage power supply. Make sure to check the label on the unit against the colour of the power connector:

- **Orange** = high voltage
- **Black** = low voltage

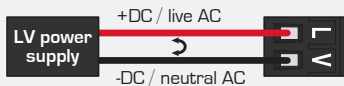
4.1 Connect your SC - FLO to the power supply

Refer to Section 3, Fig 3C

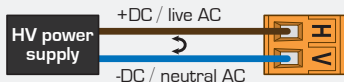
Wire your controller to your power supply as per the appropriate diagram below.

Remember to switch your power supply off before you begin wiring, and NEVER connect your low voltage controller to mains power.

Low voltage (LV) - 15-48V AC, 10-72V DC



High voltage (HV) - 5-265V AC, 95-370V DC



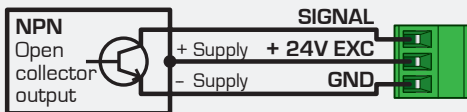
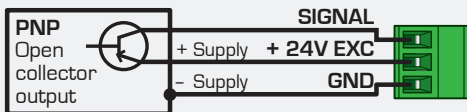
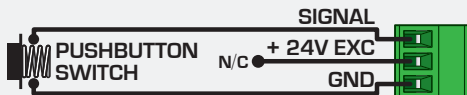
4.2 Wire your IF11 analog input module

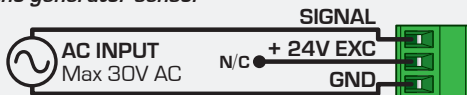
Refer to Section 3, Fig 3B

The IF11 input module has four headers which are factory configured to suit your application. If you do not advise us of your sensor type when you place your order, the module will be configured for an NPN sensor.

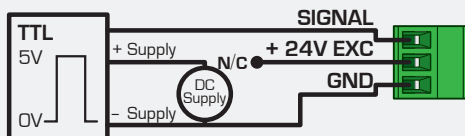
Wire your input as shown in the appropriate diagram on the following pages.

Advanced users may remove the input module from its enclosure and re-adjust the header settings. See Appendix A for more information.

NPN open collector output with proximity switch*Active sensor signal: 0V Inactive sensor signal: +24V***PNP open collector output with proximity switch***Active sensor signal: +24V Inactive sensor signal: 0V***Pushbutton switch** *Open signal: +24V Closed signal: 0V*

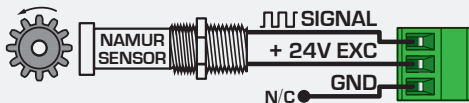
Tacho generator sensor**TTL input**

In this example the TTL logic has a separate +5V power supply.

**Namur sensor**

Active sensor signal: 0.3-1.0mA

Inactive sensor signal: 1.7 - 3.0mA



4.3 Wire your analog output (if fitted)

Refer to Section 3, Fig 2B

If your SC is an R2A or R2AS model, wire your analog output as shown.

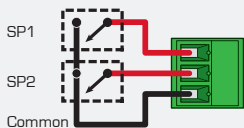


4.4 Wire your relays (if required)

Refer to Section 3, Fig 3A

Your SC - FLO has two 5A form A relays and two setpoints.

These can be individually programmed to operate within the total span range of the controller.



4.5 Wire your serial port (if active)

Refer to Section 3, Fig 1A

If your SC is an R2AS model, then your controller's front panel serial port is active, and should be wired as shown.



R2 and R2A models have an INACTIVE serial connector on the front panel.

4.6 Wire your function pins (if required)

Refer to Section 3, Fig 2A

Connect external switches (as shown on the following page) to enable a function to be executed when its switch is activated.

FUNCTION PINS

Total

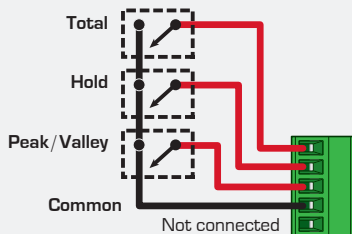
Resets total to zero

Hold

Stops total from increasing

Peak / Valley

Resets the peak and valley readings



4.7

Power up your controller

Once you have completed the wiring process it is safe to switch on your power supply. Ensure that your display is functioning before you proceed.

5 SETUP & CALIBRATION

Enter the setup and calibration mode by pressing **F1**.

5.1 Enter PIN

A **_ _ _ ENTER CAL PIN NUMBER** scrolls across the bottom row and **0** appears in the top row. Use the **▲** and **▼** buttons to enter your security code (factory default 1). Then press **P**. If the correct PIN is entered then the setup is started at 5.2.

If an incorrect PIN number is entered, **_ _ _ INCORRECT PIN - ACCESS DENIED** scrolls across the display and it returns to the normal operating mode.

You will be given the opportunity to change your PIN number at the end of this section (5.6). If you have forgotten your PIN number, see Section 9.

5.2 Flow rate setup




- A** _ _ _ **FLOW RATE SETUP** scrolls across the bottom row and **Skip** appears in the top row. Press **P** to skip to 5.3, or the **▲** button and then **P** to **Enter** flow rate setup.
- B** _ _ _ **DECIMAL POINT POSITION** scrolls across the bottom row and the current selection appears in the top row. Use the **▲** and **▼** buttons to select: **No DP**, **0.1**, **0.12**, **0.123**, **0.1234** or **0.12345**. Press **P**.
- C** _ _ _ **CALIBRATION METHOD** scrolls across the bottom row and the current selection appears in the top row. Use the **▲** and **▼** buttons to select **K Factor** or **Pulses**, and then press **P**.




***K Factor** - Select this option for fast, accurate calibration using the sensor manufacturer's K factor value.*

***Pulses** - This option is ideal for applications where the flow sensor's K factor value is not known. It is also a more accurate calibration method in rare situations where the known K factor is less than 1.*






If you selected **K Factor** in 5.2C:

D ___ **K FACTOR RANGE** scrolls across the bottom row and the current selection appears in the top row. Use the  and  buttons to choose: **99.9999**, **999.999** or **9999.99**, and then press .

___ **K FACTOR** scrolls across the bottom row and the current value appears in the top row. Use the  and  buttons to enter the K factor from your flow transducer manufacturer's specifications. Press .






If you selected **PULSES** in 5.2C:




D ___ **PULSES PER UNIT OF MEASUREMENT** scrolls across the bottom row and the current number of pulses appears in the top row. Adjust this value as using the  and  buttons, and then press .

*For example, if a flow sensor outputs 50 pulses/litre, set the **PULSES PER UNIT OF MEASUREMENT** to 50.*




Continues...

___ **Enter DISPLAY VALUE FOR (X) PULSES** scrolls across the bottom row and the current display value appears in the top row. Adjust this value using the  and  buttons, and then press .




If you selected 50 pulses above, and 50 pulses = 1 litre, then enter 1 here. [The controller will automatically calculate the correct scale factor for you.]

E ___ **TIME PERIOD FOR RATE DISPLAY** scrolls across the bottom row and the current selection appears in the top row. Use the  and  buttons to select: **Secs**, **Mins** or **Hours**, and then press .




This parameter allows you to view the effective rate over different time periods. For example, if the measurement units are litres, then rate can be viewed in L/sec, L/min or L/hr.

- F** **___ RATE MULTIPLIER** scrolls across the bottom row and the current multiplication factor appears in the top row. Use the  and  buttons to select: **x0.0001**, **x0.001**, **x0.01**, **x0.1**, **x1**, **x10**, **x100** or **x1000**. Then press .

This option allows the user add a scale factor to the rate display calculation, to display the value in the required units.

- G** **___ LOW CUT** scrolls across the bottom row and the currently selected low cut value appears in the top row. Adjust this value as desired using the  and  buttons, and then press .

When the rate drops below the low cut value, it displays as zero.

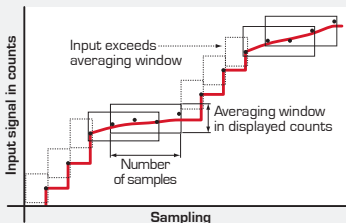
- H** **___ DISPLAY ZERO TIME** scrolls across the bottom row and the current display zero time appears in the top row. Use the  and  buttons to select either: **0.5sec** or **100sec**, and then press .




*Controls how quickly the rate display changes to zero. Select **100sec** for slow inputs, and **0.5sec** for inputs with >2 pulses/sec.*

Averaging (5.2I-J)




Input signal averaging on the rate guarantees stable measurement.

If the input exceeds the averaging window value it will not average, ensuring fast response.



- I _ _ _ **AVE SAMPLES** scrolls across the bottom row and the currently selected averaging appears in the top row. Using the  and  buttons, alter the number of rate samples that the controller will average, and then press .

Increasing the number of samples will stabilise measurement, but it will also slow down response rates.

- J** **___ AVE WINDOW** scrolls across the bottom row and the currently selected averaging window value appears in the top row. Use the  and  buttons to alter the rate signal averaging window. Press .




If your input signal contains large noise spikes, then you can increase the size of the averaging window to ensure that these pulses are still averaged. However, increasing the averaging window too far will reduce the ability of the controller to respond quickly to real changes in input signal.

Setting the averaging window to zero will turn off the window mode and give continuous averaging as per the selected averaging samples.

5.3 Totalizer setup

The totalizer can be reset from the rear function pins (see 4.6).




- A** _ _ _ **TOTALIZER SETUP** scrolls across the bottom row and **Skip** appears in the top row. Press **P** to skip to 5.4, or the **▲** button and then **P** to **Enter** totalizer setup.
- B** _ _ _ **DECIMAL POINT POSITION** scrolls across the bottom row and the currently selected decimal point position appears in the top row. Use the **▲** and **▼** buttons to select: **No DP**, **0.1**, **0.12**, **0.123**, **0.1234** or **0.12345**. Then press **P**.
- C** _ _ _ **RESOLUTION** scrolls across the bottom row and the currently selected totalizer resolution appears in the top row. Use the **▲** and **▼** buttons to select: **x1**, **10³** (10^3) or **10⁶** (10^6). Then press **P**.

- D** ___ **RESET TOTAL AT POWER UP** scrolls across the bottom row and the current setting appears in the top row. Use the  and  buttons to select either **No**, **Zero** or **Ld Val** (load value). Then press .

***No** - The totalizer value will be retained at power up.*

***Zero** - The totalizer value will be cleared to zero at power up.*

***Ld Val (load value)** - The totalizer value will be set to a user defined totalizer load value at power up (see 5.3E).*

- E** ___ **LOAD VALUE** scrolls across the bottom row and the currently selected totalizer load value appears in the top row. Use the  and  buttons to adjust your load value as desired. Then press .

*This value is loaded into the totalizer at power up when **Ld Val** is selected in 5.3D above.*

5.4 Analog output setup




Please note that R2/R2S models do not have this option installed - these instructions are only relevant to R2A/R2AS users.

A **___ ANALOG OUTPUT SETUP** scrolls across the bottom row and **Skip** appears in the top row. Press **[P]** to skip to 5.5, or the **[▲]** button and then **[P]** to **Enter** analog output setup.


B **___ DATA SOURCE FOR ANALOG O/P** scrolls across the bottom row and the current selection appears in the top row. Use the **[▲]** and **[▼]** buttons to select: **None**, **Rate** or **Total**. Then press **[P]**.



C **___ LOW SCALE VALUE FOR ANALOG O/P** scrolls across the bottom row and the current selection appears in the top row. Use the **[▲]** and **[▼]** buttons to enter your cal low position, and then press **[P]**.

This sets the display value for cal low (as at 5.4F).

- D** **___ HIGH SCALE VALUE FOR ANALOG O / P** scrolls across the bottom row and the current selection appears in the top row. Use the  and  buttons to enter your cal high position, and then press .

This sets the display value for cal high (as at 5.4G).




- E** **___ CALIBRATE ANALOG O / P?** scrolls across the bottom row and **Skip** appears in the top row. If you do not wish to calibrate your analog output, press  now.

If you would like to calibrate your analog output, connect a mA or volt meter across the analog output connector (see 4.3). Then press the  button to select **Enter** and then  to enter calibration mode.






If you selected Skip in 5.4E:

Skip the rest of this section and continue to 5.5.

- F** _ _ _ **CAL LOW ANALOG O / P** scrolls across the bottom row and a calibration number appears in the top row. Using the  and  buttons, calibrate your low analog output as required. Then press .

The display value is shown in internal units (mA).

- G** _ _ _ **CAL HIGH ANALOG O / P** scrolls across the bottom row and a calibration number appears in the top row. Using the  and  buttons, calibrate your high analog output as required. Press .

The display value is shown in internal units (mA).

5.5 Serial setup

Please note that R2/R2A models do not have an active serial port - these instructions are only relevant to R2S/R2AS users. Configuring an active serial port on your SC - FLO (as specified below) will allow you to connect your controller to a PC or another device.

A _ _ _ **SERIAL SETUP** scrolls across the bottom row and **Skip** appears in the top row. Press **P** to skip to 5.6, or the **▲** button and then **P** to **Enter** serial port setup.

B _ _ _ **SERIAL MODE** scrolls across the bottom row and the currently selected serial mode appears in the top row. Using the **▲** and **▼** buttons, select: **ASCII**, **Modbus (RTU)** or **Ranger A**. Then press **P**.

*Texmate **ASCII** is a simple protocol that allows connection to various Texmate PC configuration tools.*










***Modbus** is an industry standard RTU slave mode that allows connection to a wide range of devices, such as PC's or PLC's.*




***Ranger A** is a continuous output, used to drive remote displays and other instruments in the Rinstrum™ range. (Ranger is a trade name belonging to Rinstrum Pty Ltd.)*



If you selected ASCII or Modbus in 5.5B:

Skip 5.5C and continue to 5.5D now.

- C** ___ **SERIAL DATA SOURCE** scrolls across the bottom row and the current Ranger A data source appears in the top row. Use the  and  buttons to select **Rate** or **Total**, and then press .
- D** ___ **BAUD RATE** scrolls across the bottom row and the current rate appears in the top row. Use the  and  buttons to select: **300**, **600**, **1200**, **2400**, **4800**, **9600**, **19200**, or **38400**, and then press .
- E** ___ **PARITY** scrolls across the bottom row and the current parity appears in the top row. Use the  and  buttons to select: **None**, **Odd** or **Even**. Press .

- F** _ _ _ **SERIAL ADDRESS** scrolls across the bottom row and the current selection appears in the top row. Use the  and  buttons to set the serial address, and then press .

The serial address parameter is used to identify a particular device when it is used with other devices in a system. [It applies particularly to Modbus mode when used on a RS485 network.] The serial address of the controller must be set to match the serial address defined in the master device.

▶▶ More info on registers ▶▶

See tables (below, p32)

RANGER A - This allows the controller to drive a remote display from the Rinstrum range. The following shows the output string format when Ranger A output is selected:

<Start> <Sign> <Output Value> <Status> <End>

STRING CHARACTER(S)	
<Start>	STX character [ASCII 02]
<Sign>	Output value sign (space for + and dash for -)
<Output Value>	Seven character ASCII string containing the current output value and decimal point. <i>[If there is no decimal point, then the first character is a space. Leading zero blanking applies.]</i>
<Status>	Single character output value status: U=Under, O=Over, E=Error
<End>	ETX character [ASCII 03]

MODBUS REGISTERS - These are all holding registers and should be accessed via function codes 3 and 6. Register addresses are displayed in the Modicon™ addressing format. i.e. Register 65=40065 (subtract 1 for direct addressing).

16-BIT	
40001	Alarm status (Bit 0=SP 1, Bit 1=SP 2)
40065	SP 1 hysteresis
40071	SP 1 make delay
40066	SP 2 hysteresis
40072	SP 2 make delay

32-BIT SIGNED (2x16-bit)	
40513	Process display
40517	Flow rate
40519	Total
40525	Peak
40527	Valley
40535	SP 1
40537	SP 2
40587	D/A scale low value
40591	D/A scale high value

5.6 Edit calibration PIN

- A** _ _ _ **EDIT CAL PIN NUMBER?** scrolls across the bottom row and **Skip** appears in the top row. Press **P** to skip and return to the operational display, or the **▲** button and then **P** to **Enter**.
- B** _ _ _ **ENTER NEW CAL PIN NUMBER** scrolls across the bottom row and the current PIN (default 1) appears in the top row. Using the **▲** and **▼** buttons, enter your new calibration PIN number. Then press **P** to exit and return to the operational display.

6 SETPOINT SETUP

Enter the setpoint setup mode by pressing and holding the **F2** button for 3 seconds.

6.1 Enter setpoint PIN

A **_ _ _ ENTER SP PIN NUMBER** scrolls across the bottom row and **0** appears in the top row. Use the **▲** and **▼** buttons to enter your security code (factory default 1). Then press **P**. If the correct PIN is entered then the setup is started at 6.2.

If an incorrect PIN number is entered, **_ _ _ INCORRECT PIN - ACCESS DENIED** scrolls across the display and it returns to the normal operating mode.

You will be given the opportunity to change your PIN number at the end of this section (6.3). If you have forgotten your PIN number, see Section 9.

6.2 Edit setpoint

- A** **EDIT SETPOINT** scrolls across the bottom row and **Skip** appears in the top row. Press **P** to skip to 6.3 or use the **▲** and **▼** buttons to select a setpoint to edit: either **SP 1** or **SP 2**. Then press **P**.
- B** **SP VALUE** scrolls across the bottom row and the last setpoint value entered appears in the top row. Using the **▲** and **▼** buttons, adjust the display value at which the setpoint will activate. Then press **P**.



If you selected SP1 in 6.2A:




Skip all intervening steps and continue to 6.2D now.

- C** **TRACK SP1** scrolls across the bottom row and the last tracking setting appears in the top row. Using the **▲** and **▼** buttons, select **Off** or **On**. Then press **P**.
- Setting this option to **On** will cause SP 2 to become an offset value, which is effectively added to the value of SP 1.*



If you selected **On** in 6.2C:




Skip all intervening steps and continue to 6.2E now.

- D** ___ **SP SOURCE** scrolls across the bottom row and the current setpoint activation source appears in the top row. Use the  and  buttons to select: **Rate** or **Total**, and then press .



If you selected **Rate** in 6.2D:

Skip all intervening steps and continue to 6.2G now.




- E** ___ **VOLUMETRIC PULSE** scrolls across the top row and the current selection appears in the top row. Use the  and  buttons to select **Off** or **On**, and then press .

When the selected setpoint is activated in volumetric pulse mode, the totalizer will reset to 0 and then resume totalizing. The selected relay will activate for the time specified in 6.2F. See Appendix B for more information on volumetric pulse.



If you selected Off in 6.2E:

Skip all intervening steps and continue to 6.2G now.







- F **___ PULSE TIME** scrolls across the bottom row and current selection appears in the top row. Use the  and  buttons to select your pulse time (from 0.1 to 10.0 seconds), and then press .

Pulse reset requires a minimum of 0.1 seconds. A combination of high input rates and low setpoint values may exceed this limitation, resulting in missed output pulses.



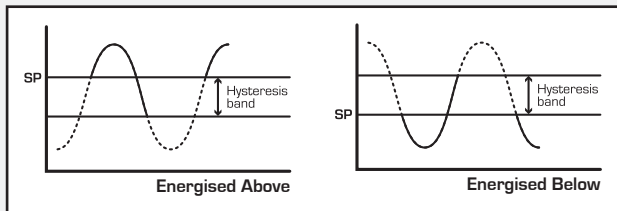
If you selected On in 6.2E:

Skip all intervening steps and continue to 6.2K now.

- G** ___ **SP ACTIVATION** scrolls across the bottom row and the current selection appears in the top row. Using the  and  buttons, select the relay activation to operate **Above** or **Below** the setpoint value. Press .
- Select **Above** for the relay to turn on above the setpoint value and off below it. Select **Below** for the relay to turn on below the setpoint value and off above it.*
- H** ___ **SP TYPE** scrolls across the bottom row and the current selection appears in the top row. Using the  and  buttons, select: **Alarm** or **Control**. Press .

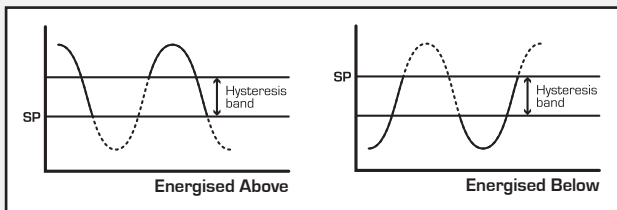
ALARM

The **setpoint value** controls the point at which the setpoint will activate, and the **hysteresis value** controls the point at which the setpoint will deactivate.






CONTROL

The **setpoint value** controls the point at which the setpoint will deactivate, and the **hysteresis value** controls the point at which the setpoint will reactivate.







- I **___ HYSTERESIS VALUE** scrolls across the bottom row and the current selection appears in the top row. Adjust this value using the **▲** and **▼** buttons, and then press **P**.

The hysteresis value defines the separation band between setpoint activation and deactivation. Hysteresis will operate as per the specified type setting (see 6.2H).


- J** _ _ _ **MAKE DELAY** scrolls across the bottom row and the current selection appears in the top row. Adjust using the  and  buttons, and press .

This defines the delay between setpoint activation and when the relay turns on. This value is in tenths of a second.

- K** _ _ _ **USER ACCESS?** scrolls across the bottom row and the last selected direct access setting appears in the top row. Using the  and  buttons, select either **Off** or **On**. Then press .

When enabled, this allows the setpoint value to be edited directly after pressing the  button. See Section 7.

- L** _ _ _ **EDIT SETPOINT** scrolls across the bottom row and **Skip** appears in the top row.

To edit another setpoint, follow the instructions from 6.2A-L. If you do not wish to edit another setpoint, press  now to proceed to 6.3.

6.3 Edit setpoint PIN

- A** ___ **EDIT SP PIN NUMBER** scrolls across the bottom row and **Skip** appears in the top row. Press **P** to skip and return to the operational display, or the **▲** button and then **P** to **Enter**.
- B** ___ **ENTER NEW SP PIN NUMBER** scrolls across the bottom row and the current PIN (default 1) appears in the top row. Using the **▲** and **▼** buttons, enter your new setpoint entry PIN number. Then press **P** to exit and return to the operational display.

7 SETPOINT DIRECT ACCESS

If none of the setpoints have their direct access option enabled then the **F2** button will not respond to a short button press. [See 6.2K to enable.]


7.1 Setpoint direct access




- A** Begin by pressing the **F2** button for less than 3 seconds. The setpoint name (**SP 1** or **SP 2**) will appear in the bottom row and the current setpoint value will appear in the top row. Using the **▲** and **▼** buttons, adjust the selected value. Then press **P** to accept the new setpoint value.
- B** If any other setpoints have the direct access option enabled then the same process is repeated for the next setpoint. Pressing **P** for the last enabled setpoint will exit and return to the operational display.

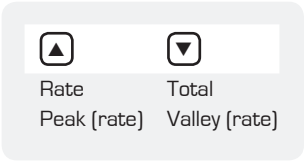
8 DISPLAY SHORTCUTS



Use these shortcuts for quick viewing of specified parameters from the operational display.




8.1 View/Reset

A Begin by pressing the  button for half a second. **Rate** will appear in the bottom row, and the current rate value will appear in the top row.

B Use the  and  buttons to view the values shown. Press  to return to the operational display.






	
Rate	Total
Peak (rate)	Valley (rate)

To reset **Peak**, **Valley** or **Total**, press both the  and  buttons together while the parameter is being displayed (as in 8.1B). Press  to return to the operational display.

9 RESET PIN NUMBERS

If you have forgotten your PIN number, follow the procedure below to reset the calibration and setpoint entry PIN numbers to their factory default of 1.

9.1 Reset PIN numbers

- A** Press ,  and  at the same time. (This key combination can be difficult to execute and you may need several tries to get it right.)
- B** When successful, a factory identification text will scroll across the display, followed by: **_ _ _ ALL PIN NUMBERS RESET TO 1.**
- C** Reset the calibration PIN numbers if required by following the instructions in Sections 5.6 and 6.3.

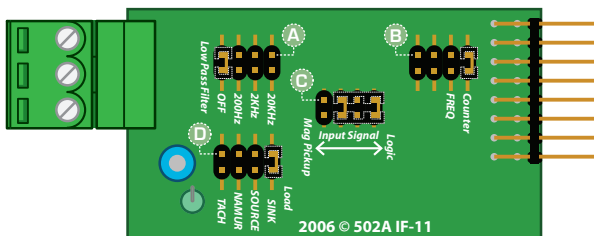
A

APPENDIX A

Input Header Configuration

We strongly recommend that you specify your sensor type when you place your order, to avoid unnecessary removal of the input module.

If your application necessitates repositioning of the headers, then remove the input module from the controller case and make adjustments as needed, referring to the header tables overleaf.



Please contact us for support if you are having difficulty opening the controller case.

INPUT NOISE FILTERING

Ⓐ

OFF	Ideal for high-speed counting	2kHz	Suitable for a noisy signal
200Hz	Ideal for mechanical contacts	20kHz	Suitable for a noisy signal

MODE

Ⓑ

Counter	ALWAYS use this setting	Frequency	Not used for SC - FLO
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INPUT SIGNAL

Ⓒ

Logic	NPN, PNP, namur, TTL & pushbuttons	Mag Pickup	Tacho
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LOAD

Ⓓ

Sink	NPN, TTL & pushbuttons	Source	PNP
Namur	Namur	Tach	Tacho


B

APPENDIX B
Volumetric Pulse

This function outputs a pulse on a relay when **Total** \geq **Setpoint Value**. It also resets the value of **Total** as calculated below:

$$\text{Total} = \text{Total} - \text{Setpoint Value}$$

This function is useful for feeding volume information to other equipment. The length of the pulse can be adjusted in 0.1 second increments (6.2F) to suit the requirements of externally connected devices.



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