

+GF+ SIGNET 8540 Pump Pulsar Instructions

ENGLISH

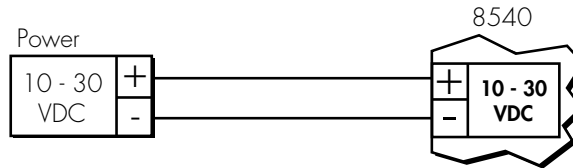
3-8540-090-1
B-3/97



CAUTION!

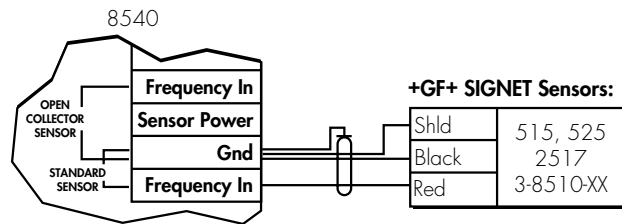
Remove power to unit before wiring input and output connections.

1. Power Connections

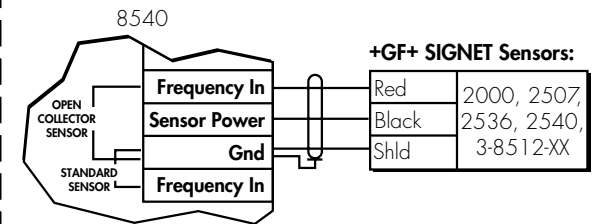


2. Compatible Sensor Connections

2.1 Non-Powered +GF+ SIGNET Flow Sensors

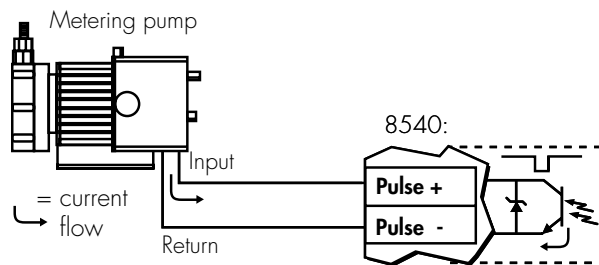


2.2 Powered +GF+ SIGNET Flow Sensors



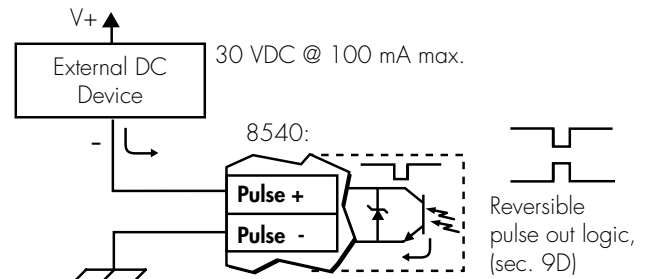
3. Pump Pulse Output Wiring

3.1 Metering pump control



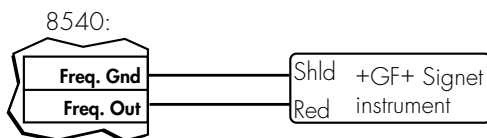
- The open-collector pulse output signal will activate all leading metering pumps requiring dry contact closures. See section 9D for pulse output operation details.
- If the metering pump strokes once and fails to continue, reverse the input and return wires for proper operation.

3.2 External device control

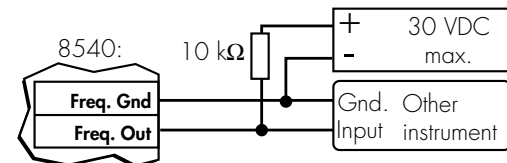


- The open-collector pulse output will work with any external **DC powered** device (e.g. relay or solenoid valve) which does not exceed 30 VDC @ 100 mA.
- The pulse output logic can be reversed as required (sec. 9D)

4. Sensor Frequency Output Wiring



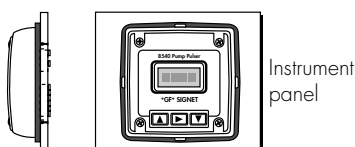
- Conditioned sensor frequency output
- +GF+ Signet Inteltek-Pro, use 2535 input card setting



5. Installation Options

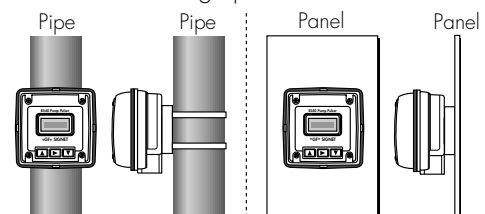
5.1 Standard Panel Mount

- Panel cutout template/instructions (included).



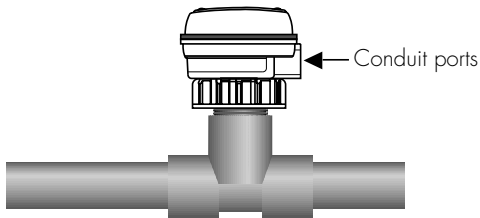
5.2 Optional 3-8010 Universal Mounting Kit

- NPT and DIN conduit port kits available (see section 5.3).
- See section 10 for ordering options.

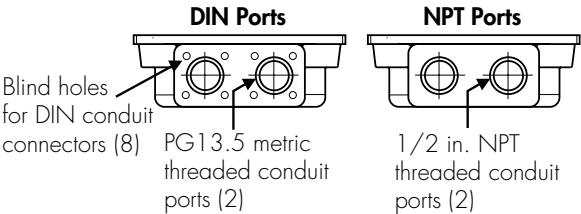


5.3 Optional 3-8011 Integral Mounting Kit

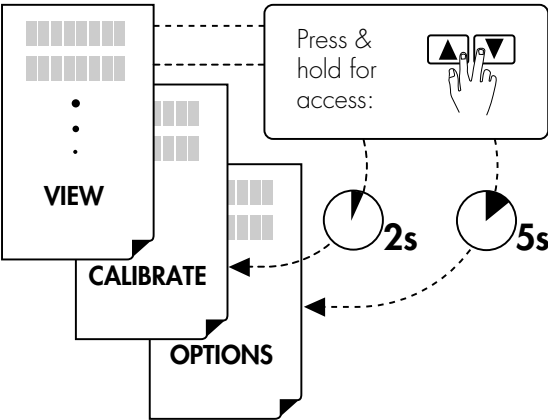
- NPT and DIN conduit port kits available.
- Compatible with 3-8510-XX/3-8512-XX flow sensors (only).
- Flow sensor and fitting purchased separately (see section 10).



Conduit Port Options



6. FUNCTIONS



7. VIEW (example)

	1 Choose:	2 Change:	3 Save:
A.	▲ 12.34gpm Flow rate ▲ ▼	▶ Press to access totalizer reset procedure (right)	
B.	2s galx1000 ▶ 12345678 Resettable total ▲ ▼		
C.	2s oo Total ▶ 12345678 Permanent total ▲ ▼		
D.	1000.0g Pulse volume ▲ ▼	▶ Press to access totalizer reset procedure (right)	
E.	2s PulsTot1 ▶ 12345678 Pulse total ▲ ▼		
F.	01-03-97 Last cal. ▼		

Totalizer Reset Procedure

OPTIONS =

Reset? >

1. Press and hold: 2s

2. 00000000

To exit without changes:

quick press

OPTIONS =

Rst:-----

1. Press keys in sequence:

▲▲▲▲▼

Reset? >

2. Press and hold: 2s

3. 00000000

- VIEW Menu Functions A - F:**
- A. Displays current flow rate
 - B. Displays total flow units measured since the last totalizer reset. Totalizer can be reset at any time from the front keypad. A keypad sequence is required to reset the totalizer when the OPTIONS menu "Lock: on" selection is chosen (sec. 9A). Choose the "Lock:off" selection to disable this feature (sec 9A).
 - C. Displays the total flow units measured for the life of the product. The totalizer cannot be manually reset but will roll over after maximized (99999999 → 00000000). Note: A scrolling cursor under the number identifies the permanent totalizer during operation.
 - D. Displays the programmed volume for each pulse output occurrence.
 - E. Displays the total number of pulse outputs. The pulse output totalizer can be reset at any time from the front keypad. The OPTIONS menu "Lock: on" "Lock:off" feature limits reset access. Refer to note B for additional information. Note: a flashing cursor under the least significant digit identifies the pulse totalizer during operation.
 - F. Displays the user defined setup date (not an internal timer).

8. CALIBRATE (example)

CAL.----- Press keys in sequence     to continue:		
1 Choose:	2 Change:	3 Save:
A.  Contrast>	 Contrast4(Contrast1)	  2s Press & hold
B.  UNIT>	 UNIT:gpm UNIT:m3h Unit/timebase: h,m,s,d	
C.  Kfactor>	 K=00680. K=2994.3	
D.  TotUnit>	 GALx1000 m3 x10 Units - label only -	
E.  K-total>	 Kt2994.3 Kt29943.	
F.  PulsVol>	 0010.0m3 0018.5m3	
G.  PulsWth>	 000.1sec 003.5sec	
H.  LastCal>	 02-09-99 01-03-96 Last calibration	
To return to VIEWV:   quick press		To restore original value:   quick press

Menu Functions A - H:

- A. Selects display contrast: 4 levels
- B. Sets flow units (**gpm**) and timebase (**gpm**). Timebase options: s=seconds, m=minutes, h=hours, d=days
- C. Sets flow and pulse output K-factor: 000.01 to 99999. (see technical notes)
- D. Sets totalizer units: For label purposes only
- E. Sets totalizer K-factor: 000.01 to 99999. (see technical notes)
- F. Sets pulse output interval: 000.01 to 99999. flow units. Note: the programmed flow unit (e.g. m3) automatically carries over from the flow unit/timebase setting (B).
- G. Sets pulse output pulse width (on time): 000.1 to 999.9 seconds
- H. Sets user defined date (not an internal timer)

Technical notes:

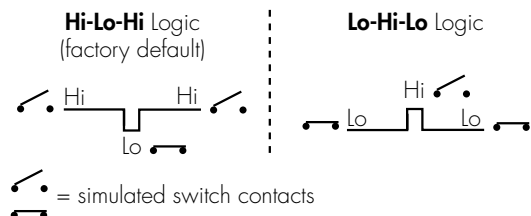
Flow and totalizer K-factors are independent of each other. These K-factors represent the number of pulses generated by the +GF+ Signet flow sensor for each engineering unit measured (published in flow sensor manual). The total K-factor can be changed to totalize in different units other than the flow display, as required.

9. OPTIONS (example)

OPT.----- Press keys in sequence     to continue:		
1 Choose:	2 Change:	3 Save:
A.  Total=0>	 Lock: on Lock:off VIEW=  	  2s Press & hold
B.  Average>	 Avg: low Avg: hi low= $\tau=700$ ms Avg: off hi= $\tau=3$ s off= 100 ms	
C.  Decimal>	 xx . xx m3h xx . xx m3h Decimal position	
D.  PulsOut>	 Hi-Lo-Hi(Lo-Hi-Lo) Pulse out logic	
To return to VIEWV:   quick press		To restore original value:   quick press
Return to VIEWV before removing power		

Menu Functions A - D:

- A. Selects totalizer pulse reset options: Lock **on** (enables) or lock **off** (disables) the VIEWV menu totalizer reset security code feature (RST: --- -).
- B. Selects display averaging: off = 100 ms, low= $\tau=700$ ms, hi= $\tau=3$ s.
- C. Selects display decimal: ----. to --. --
- D. Selects pulse output signal logic:
 - **Hi-Lo-Hi** logic (factory default) holds the pulse output high (simulated open switch contact) until the programmed pulse interval is reached (sec. 8F), then drops low (simulated closed switch contact) for a specified "on time" in seconds (sec. 8G), see logic diagram below. This setting simulates a standard switch contact closure required for triggering many common metering pumps.
 - **Lo-Hi-Lo** logic holds the pulse output low (simulated closed switch contact) until the programmed pulse interval is reached (sec. 8F), then goes high (simulated open switch contact) for a specified "on time" in seconds (sec. 8G), see logic diagram below.



10. Accessories

Order no.	Description	Code
3-8010	Universal mounting kit, NPT ports	198 864 502
3-8010-D	Universal mounting kit, DIN ports	198 864 503
3-8011	Integral sensor mounting kit, NPT ports	198 864 500
3-8011-D	Integral sensor mounting kit, DIN ports	198 864 501
3-8510-P0	Non-powered integral sensor, 0.5 to 4 inch pipe, Polypropylene body & Titanium rotor pin	198 864 504
3-8510-P1	Non-powered integral sensor, 5 to 8 inch pipe, Polypropylene body & Titanium rotor pin	198 864 505
3-8510-VO	Non-powered integral sensor, 0.5 to 4 inch pipe, Natural PVDF body & Hastelloy C rotor pin	198 864 506
3-8512-P0	Powered integral sensor, 0.5 to 4 inch pipe, Polypropylene body & Titanium rotor pin	198 864 513
3-8512-P1	Powered integral sensor, 5 to 8 inch pipe - Polypropylene body & Titanium rotor pin	198 864 514
3-8512-VO	Powered integral sensor, 0.5 to 4 inch pipe - PVDF body & Hastelloy C rotor pin	198 864 516
3-8512-TO	Powered integral sensor, 0.5 to 4 inch pipe - PVDF body & PVDF rotor pin	198 864 518

11. Troubleshooting

Display Message	Cause	Solution
OVER^gpm	1) Input frequency too high 2) Display overrange 3) Display timebase too large	1) Reduce input frequency. 2) Move display decimal to right in OPTIONS menu. 3) Change display timebase (H,M,S,D) to smaller value (e.g. LPH to LPM).
K=0error	K-Factor cannot be zero	Change K-Factor to a non-zero value.
Puls Err	Pulse width on time too large for volume/frequency input	Reduce pulse width on time or increase pulse volume setting

12. Specifications

General Data

Compatible Sensors: All current +GF+ Signet flow sensors
 Display Accuracy: Flow, $\pm 0.1\%$ of reading
 Totalizers, $\pm 0.03\%$ of reading

Enclosure:

- Rating: NEMA 4X/IP65
- Material: Glass-filled polypropylene
- Gasket: Silicone rubber (captive)
- Screws: 8-32, self-tapping (captive)

Display:

- Type: 8-digit alphanumeric dot matrix
- Update rate: Flow=1s, Totalizers=100 msec.
- Contrast: Variable
- Ranges: Flow, 0.01 to 9999.
Resettable/permanent totalizers, 0 to 99999999

Environmental

Operating temperature: -15 to 70 °C (5 to 158 °F)
 Storage temperature: -15 to 80 °C (5 to 176 °F)
 Relative humidity: 0 to 95%, non-condensing

Quality Standards

- CE
- Manufactured under ISO 9001

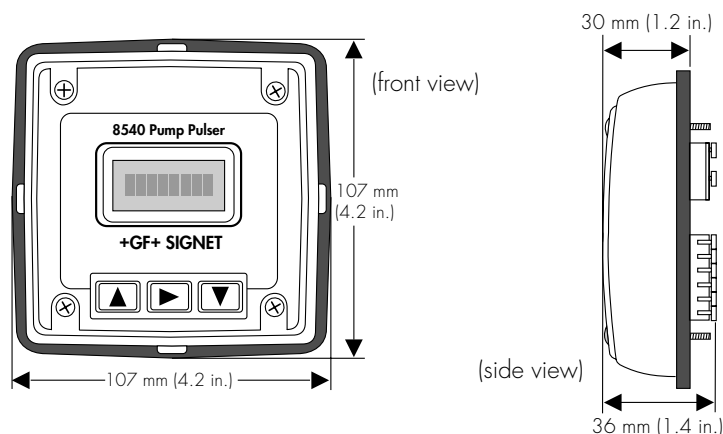
Electrical Data

Frequency range: 0.5 Hz to 500 Hz
 System power: 10 to 30 VDC @ 30 mA max.

Electrical Data

Sensor power: Powered sensor connection only, 5 VDC @ 20 mA max.
 Pump pulse output: Programmable repeat volume from 000.01 to 99999. flow units, programmable pulse width (on time) from 000.1 to 999.9 seconds, optically isolated open-collector transistor, max current sink 100 mA @ 30 VDC
 Sensor freq. output: Optically isolated open-collector transistor, max. current sink 10 mA @ 30 VDC
 Immunity: EN50082-2
 Emissions: EN55011

Dimensions:



+GF+ SIGNET

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