



FLO-CORP.com

CALFLO™ CFVF

VFlo Flow Meter

OPERATING INSTRUCTIONS



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Dimensions (In) mm

CFVF-1

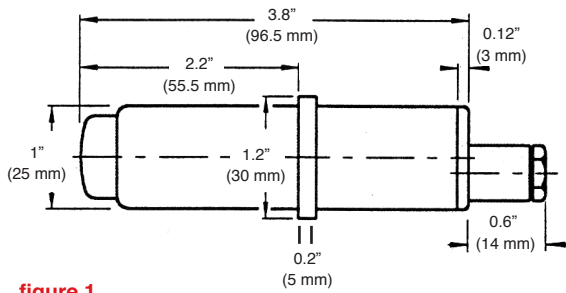


figure 1

Connection Diagram

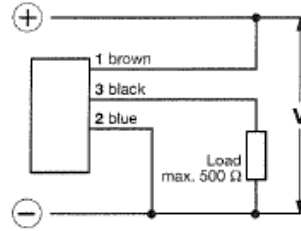


figure 2

Safety Precautions

About This Manual:

PLEASE READ THE ENTIRE MANUAL AND SPECIFICATIONS PRIOR TO INSTALLING OR USING THIS PRODUCT.

This manual includes information on all models of CalFlo VFlo™ Compact Industrial Flow Meter (CFVF-1). Please refer to the part number to verify the exact model which you have purchased.

User's Responsibility for Safety:

Flow Line Options provides a wide range of flow and level technologies. While this device is designed to operate in a wide variety of applications, it is the user's responsibility to select a model that is appropriate for the application, install it properly, perform tests of the installed system, and maintain all components. The failure to do so could result in property damage or serious injury.

Wiring and Electrical:

The supply voltage used to power the device should never exceed a maximum of 24 volts DC. Electrical wiring of the device should be performed in accordance with all applicable national, state, and local codes.

Flammable, Explosive and Hazardous Applications:

Flow Meters should not be used with explosive or flammable liquids, which require an intrinsically safe or classified area rating!

Description

VFlo™ is an industrial purpose flow meter that is used for a variety of measurement and control applications. Completely encapsulated in epoxy resin, the VFlo features solid-state sensing with proven reliability and long-term stability, even under the harshest environmental conditions. VFlo has an adjustable measuring range, LED indication of flow, and is well-suited for pipes up to 16" in diameter.

Specifications



Service	Compatible Liquids
Measuring Range	Continually adjustable from min. 0 to .65 fps to max. 0 to 6.5 fps
Pressure	435 psi (30 bar)
Accuracy	< 3%
Repeatability	< 1%
Temperature Drift	< 0.3% / K
Supply Voltage	24 VDC ± 10%
Consumption	Approx. 100-200 mA (max. flow)
Output	4-20 mA
Resistive Load	0-600 Ohm
Measurement Range Adjustment	The two potentiometers at the rear end of housing allow zero balancing and adjustment of the measuring range by means of a small screwdriver. A color changing LED signaling flow within the adjusted measuring range (green) or above (red).
Process Temperature	F: 14° to 176° C: -10° to 80°
Ambient Temperature	F: 14° to 140° C: -10° to 60°
Enclosure Rating	NEMA 4X (IP65)
Enclosure Material	Stainless Steel
Union Nut	1" NPT
Weight	5.64 oz (160 g)
Cable	
Cable Jacket Material	Oilflex
Cable Length	6.5' (2m)

Note: Please Consult Factory for Special Requirements



Installation and Instructions

Please read carefully! No liability can be accepted for damage caused by improper use of the VFlo Flow Meter.

1.0 Installation

1.1 Installation depth: $1/7 \times ID$, min. 0.5 cm

1.2 Orientation to flow: See Figure 4

1.3 Fitting position: Preferably in vertical pipes with ascending flow or in horizontal pipes with the unit in horizontal position. For optimal flow, pipe should be 0.5 - 0.7cm x ID before, and 0.3 - 0.5cm x ID behind the unit.

1.4 **Mounting:** Push O-ring over the sensing surface and housing to the flange. Insert the flow meter into the fitting which is welded onto the pipe and hold in place with the union nut. Ideal sealing is achieved by a fitting of a 0.4 - 0.5 cm wall (fittings available).

1.5 **Initial operation:** Connect the flow meter to 24 VDC according to connection diagram and wait approx. 2 minutes before starting adjustment. The flow meter has been preset under test pipe conditions to a flow range of 0-200 cm/s (related to water). At customer's plant signal may vary dependant on individual mounting and medium conditions. Output current is 4-20 mA. If re-adjustment is required, please refer to point 3.

2.0 Adjustment Procedure

2.1 Zero point adjustment in stationary medium (roughly):

Adjust zero point potentiometer after 2 min. so, that
 $I_a \approx 4$ mA, i.e. at $I_a > 4$ mA turn pot. to the left,
at $I_a < 4$ mA turn pot. to the right.

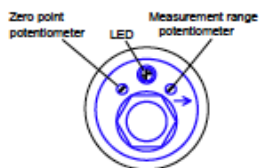
2.2 Measuring range adjustment at max. flow: Measuring range adjustable from 0 to 0.65 fps to 0 to 6.5 fps (medium water). Accelerate flow of the medium to a point, where the flow meter should give an output signal of 20 mA and wait min. 2 minutes. Turn range pot. until $I_a = 20$ mA (to the left I_a will be greater, to the right I_a will be smaller). The color of the LED will change from green ($I_a \leq 20$ mA) to red (exceeding measuring range).

2.3 Fine adjustment of zero point: After at least 3 minutes standstill of flow turn zero point slightly so, that I_a is just 4 mA (Turning direction as in 2.1).

2.4 Repeat adjustment according to 2.2 and 2.3 until the zero point (4 mA) or max. range setting (20 mA) remains constant.

Installation

Union Nut/O-ring: 1" NPT (Std.)/1" BSP
Spanner Gauge: 3.7 cm (37 mm)

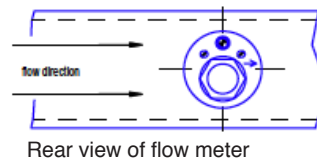


Potentiometer, 18 turn, endless

figure 3

Positioning

figure 4



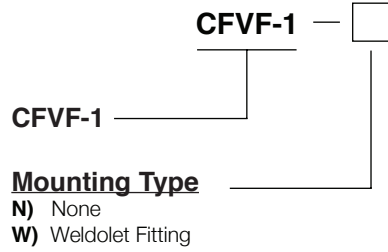
Ordering Information

FLO-CORP MODEL NUMBER BUILDER

For Assistance Call **877-356-5463**

Use the diagram below, working from left to right to construct your Flo-Corp Model Number. Simply match the category number to the corresponding box number.

Example: CFVF-1-W VFlo™ Liquid Insertion Flow Meter, 1" Sensor Diameter with Weldolet Fitting



VFlo™ shown with insertion mount welded on fitting.
(Accessory p/n: CFVF-1-W)

Ordering Notes

- 1) This unit comes standard with a NPT (US) threaded union nut for installation. To special order a BSP (Metric) threaded union nut, place BSP at the end of the P/N (ie: CFVF-1-BSP)
- 2) Comes complete with 6.5' (2 m) pre-wired cable and manual

Specifications are subject to change without notice.



Warranty

Flow Line Options Corp. warrants to the original purchaser of its products that such products will be free from defects in material and workmanship under normal use and service for a period which is equal to the shorter of one year from the date of purchase of such products or two years from the date of manufacture of such products.

This warranty covers only those components of the products which are non-moving and not subject to normal wear. Moreover, products which are modified or altered, and electrical cables which are cut to length during installation are not covered by this warranty.

Flow Line Options obligation under this warranty is solely and exclusively limited to the repair or replacement, at Flow Line Options decision, of the products (or components thereof) which Flow Line Options' examination proves to its satisfaction to be defective. FLOW LINE OPTIONS SHALL HAVE NO OBLIGATION FOR CONSEQUENTIAL DAMAGES TO PERSONAL OR REAL PROPERTY, OR FOR INJURY TO ANY PERSON.

This warranty does not apply to products which have been subject to electrical or chemical damage due to improper use, accident, negligence, abuse or misuse. Abuse shall be assumed when indicated by electrical damage to relays, reed switches or other components. The warranty does not apply to products which are damaged during shipment back to Flow Line Options' factory or designated service center or are returned without the original casing on the products. Moreover, this warranty becomes immediately null and void if anyone other than service personnel authorized by Flow Line Options attempts to repair the defective products.

Products which are thought to be defective must be shipped prepaid and insured to Flow Line Options' factory or a designated service center (the identity and address of which will be provided upon request) within 30 days of the discovery of the defect. Such defective products must be accompanied by proof of the date of purchase.

Flow Line Options further reserves the right to unilaterally waive this warranty and to dispose of any product returned to Flow Line Options where: a. There is evidence of a potentially hazardous material present with product. b. The product has remained unclaimed at Flowline for longer than 30 days after dutifully requesting disposition of the product.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. This warranty and the obligations and liabilities of Flow Line Options under it are exclusive and instead of, and the original purchaser hereby waives, all other remedies, warranties, guarantees or liabilities, express or implied. EXCLUDED FROM THIS WARRANTY IS THE IMPLIED WARRANTY OF FITNESS OF THE PRODUCTS FOR A PARTICULAR PURPOSE OR USE AND THE IMPLIED WARRANTY OF MERCHANT ABILITY OF THE PRODUCTS.

This warranty may not be extended, altered or varied except by a written instrument signed by a duly-authorized officer of Flow Line Options Corp.

Service & Repair

To request a return material authorization (RMA) for product evaluation, repair or warranty service, please complete the RMA Request Form available online at: www.flowlineoptions.com/rma.php

Once your request has been approved, you will be contacted within 2 business days (via email) with your RMA number and the information necessary to return your defective product. To ensure proper delivery, please review the shipping instructions found on the RMA Request Form.

If you have any questions or concerns, please contact Flow Line Options at (877) 356-5463.



Notes





Flow Line Options

