

INSTALLATION & MAINTENANCE INSTRUCTIONS

For Chemline FC/FS Series Variable Area Flowmeter Sizes 5” and 7”

Installation & Maintenance:

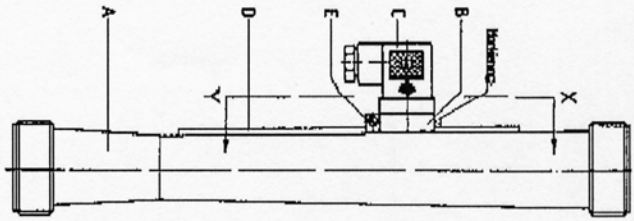
Refer to **ASSEMBLY DRAWING SFM1 REV 0**. And proceed as follows:

1. Install in line (where flow readings are required).
2. Unscrew union nuts (5).
3. Remove end connectors (6).
4. Tube (1) will slide out when end connectors (6) are removed.
5. Upper and lower float stops will come out with the end connectors (6).
6. Remove and clean or replace o-rings (7).
7. Remove float (2) from tube (1) and clean.
8. Remove range indicator (8) from tube and clean or replace.
9. It is recommended that spare o-rings (7) and range indicators (8) be kept.

Installation & Maintenance Instructions FC/FS - Series Variable Area Flowmeters cont.**Maximum Working Pressures and Temperature Ranges**

<i>Construction</i>			Pressure	Temperature
Tube	Union Nuts	Ends		
PVC	PVC	PVC	150 psi	0 to 60° C
Polyamide (PA)	PVC	PVC	150 psi	0 to 60° C
Polyamide (PA)	PPG	PP or CPVC	150 psi	0 to 80° C
Polysulfone (PSU)	PPG	PP or CPVC	150 psi	0 to 90° C
Polysulfone (PSU)	PVDF	PVDF	150 psi	0 to 120° C
PVDF	PVDF	PVDF	150 psi	-40 to 120° C

Ranges, Conversion Charts, Sizing, Scale Correction Factors etc. are available on the Chemline Data Page and also available from the Chemline Technical Department.



- Parts**
- A Flowmeter with PVDF magnetic float.
 - B Limit switch clamp.
 - C Limit switch electrical contact.
 - D Dovetailed groove for limit switches.
 - E Set screw for locking limit switch.
 - 1, 2 Polarized electrical contacts.

Limit Switch Indicator

LSFLO is an accessory to the Chemline full size flowmeter. The indicator works with feed contacts and is used to find the minimum and maximum flow values.

The contact is closed (open) as soon as the float passes the signal indicator. It opens (closes) when the float passes the signal indicator again. Depending upon installation, the Chemline belt LSFLO can be "open" with the indicator markings on the housing "down" or closed and the markings "up".

Technical Data

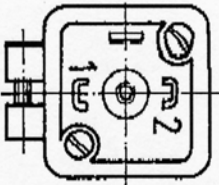
Voltage maximum 470 VAC
 Amperage maximum 0.5 amps
 Switch performance maximum 10: V/A

Reference

The electrical data i.e. the performance may not be surpassed even for a short time period. That is why a limiting switch is extremely important.

Flow Through Resistance

Less than 200 mOhm
 Resistance greater than 10 to the power 11 Ohm
 Working temperature +55 degrees C
 Safety type (between on and off switching) 3 to 12 mm of float movement.



TITLE		Limit Switches for LSFLO		DRAWN BY		DATE		REFERENCE	
CHEMLINE PLASTICS LIMITED		DB		Feb 21/89		FAB-350		REV	
55 GUARDSMAN ROAD, THORNHILL, ONTARIO L3T 6L2		CHKD. BY				DWG. NO.			
TEL: (416) 885-7590 • TELEFAX: 05 964551		APP. BY				FAB-350			

Limit reed switch

for ASV float flow meter

Type series DFM 165 to DFM 350

ZE 950, monostable: Order No. 48118 - normally open

ZE 951, bistable: LSFLO - normally open

- **Reliable limit value determination using reed switches!**
- **Monostable and bistable meeting your requirements!**
- **Direct power control of external devices, with limit value switch (ZE 960) and/or contact protection relay (ZE 961)!**
- **Flow range (height position = signal value) optional setting position. Fixed with a dovetail guide clamping piece to the measuring capillary!**
- **Simple, reliable installation on existing plants, easy to retro fit!**

The limit reed switches ZE 950 and ZE 951 serve as limit reed switches for minimum and maximum or optional intermediate flow values. They are clamped to the dovetail guides (measuring tube of the flow meter DFM 165 to DFM 350) and signal when the float in the measuring tube has reached or exceeded the limit reed switch position. As soon as this happens the contact in the limit reed switch in the actual switching element (reed switch) opens or closes.

A new magnet technology makes the past differentiation between monostable and bistable unnecessary with regard to the float.

Applicable to the limit reed switches and their function are:

- **Type ZE 950 monostable (normally open)**

The contact is closed when the float is directly at the height of the limit reed switch. This opens (switches) as soon as the float moves up or down, i.e. the flow increases or decreases.

- **Type ZE 951 bistable (normally open)**
- The contact is closed as soon as the magnetic float moves up from below or is at the direct height of the limit reed switch.

When exceeding the limit reed switch the switched condition is maintained. Only when moving down below the limit reed switch will the switching status be cancelled.

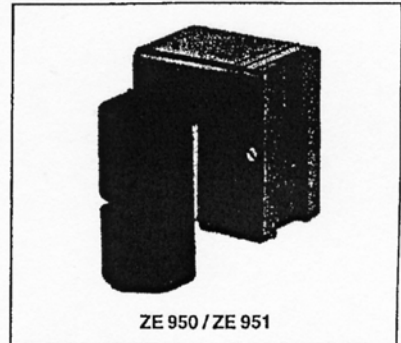
Technical data:

- Operating voltage: max. 470 V AC
- Operating current: max. 0.5 A
- Constant current when switched: max. 1 A
- Rupturing capacity: max. 10 W / 10 VA
- Forward resistance: < 150 mΩ
- Isolation resistance: > 10¹¹ Ω
- Operating temperature: 0°C to +55°C
- Protection: IP 65 (DIN 40050)
- Hysteresis (switch on and off point): 3 mm
- Dimensions: 34 x 17 x 41 mm
- Weight (with plug): 40 g
- Trip line information: refer to limit value switch ZE 960, document 310 208.
- Connections:
The polarity of the connections has no influence on the function!

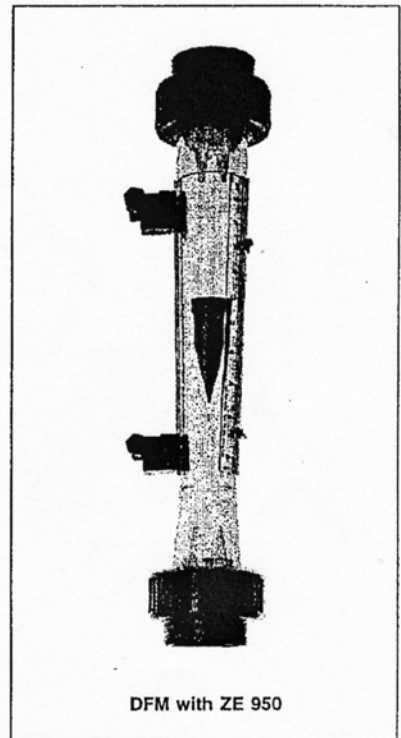
Attention!

Do not exceed the current data or the rupturing capacity!

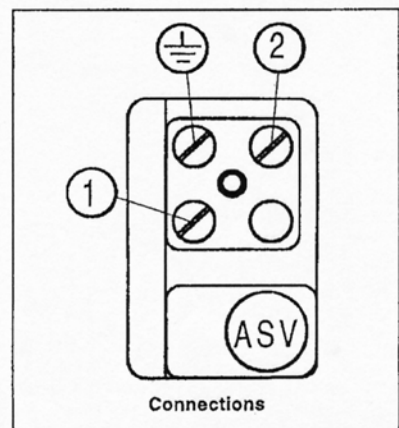
For this reason always fit a limit value switch ZE 960 or a contact protection relay ZE 961 if a power circuit is intended!



ZE 950 / ZE 951



DFM with ZE 950



Connections

Errors and omissions excepted