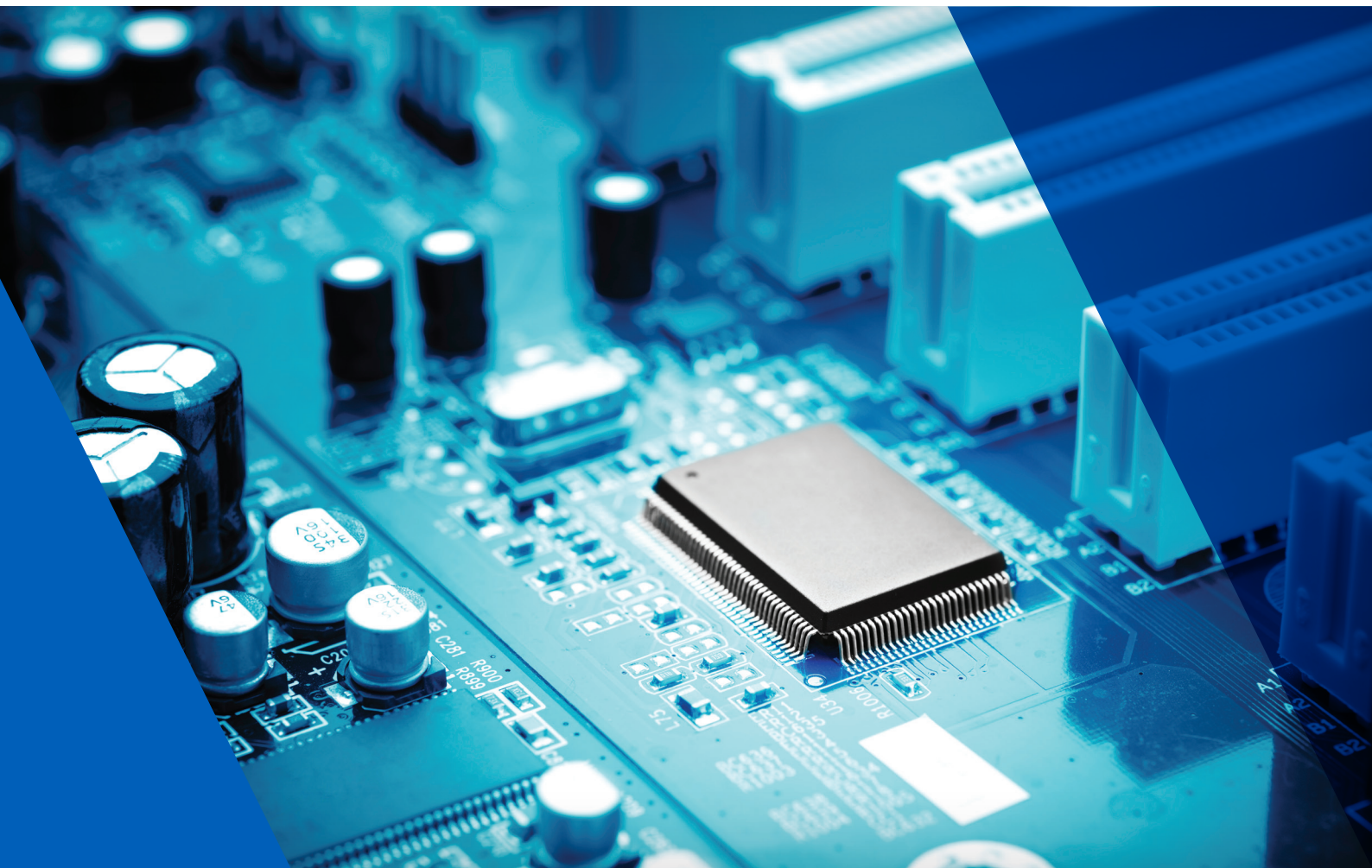


# Electro Controls

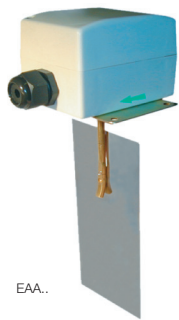
Flow - 2017



AIR FLOW SWITCHES

EAA..

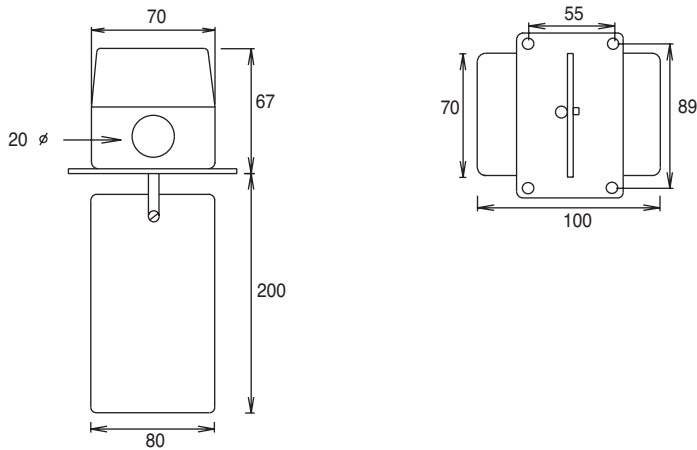
EAA.. detects air flow in ducts to monitor fan operation and switches in the event of flow failure. It is suitable for non-aggressive and non-combustible clean air/gases.



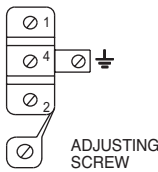
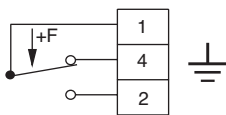
Concealed adjustment  
Volt free contacts  
Max. ambient 70°C  
Enclosure Flammability = UL94-V0  
Media Contact Parts: Mounting bracket steel zinc plated, Stainless steel paddle, Brass rod, Plastic enclosure.  
Flow rates are approximate, taken with the switch mounted in a horizontal duct.

Type	Min. Adjustment		Max. Adjustment		Max Velocity	Max Media Temp°C	230VAC SPDT	Enclosure
	Cut-in	Cut-out	Cut-in	Cut-out				
EAA-1	2 m/s	1 m/s	9 m/s	8 m/s	15m/s	80	15(8)A	IP54
EAA-1W	2 m/s	1 m/s	9 m/s	8 m/s	15m/s	80	15(8)A	IP65

DIMENSIONS



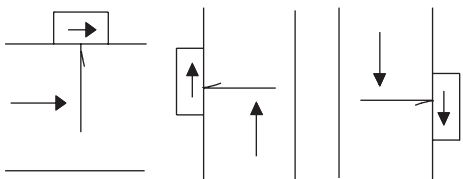
WIRING:



Flow 1-2 close 1-4 open. No flow 1-4 close 1-2 open.  
When the flow is above the cut-in setting 1-2 close. When flow decreases (cut-out) 1-4 close.

**Adjustment** : Units are pre-set to the approx minimum setting.  
Adjusting below this value may result in the switch failing to return.  
The switch point is increased by turning the adjusting screw clockwise.

INSTALLATION:

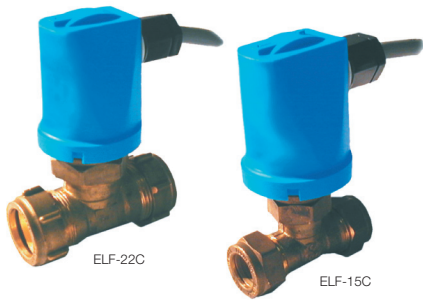


Before installing push the paddle slowly, allow it to return slowly, the switch should operate. Ensure the arrow on the housing points in the direction of the flow.  
Mount away from elbows, bends and other restrictions likely to cause turbulence.  
Upstream & downstream of the switch should be straight for at least five times duct diameter. Do not mount on the side of a horizontal duct as the paddle weight will affect the switching.  
The paddle must not touch the duct or be obstructed in any way.  
The paddle may be trimmed to increase the switching value.  
When the unit is installed in a vertical duct with downward airflow it is necessary to trim the paddle slightly to compensate for the weight.

LIQUID FLOW SWITCHES 15MM/22MM COMPRESSION

ELF..

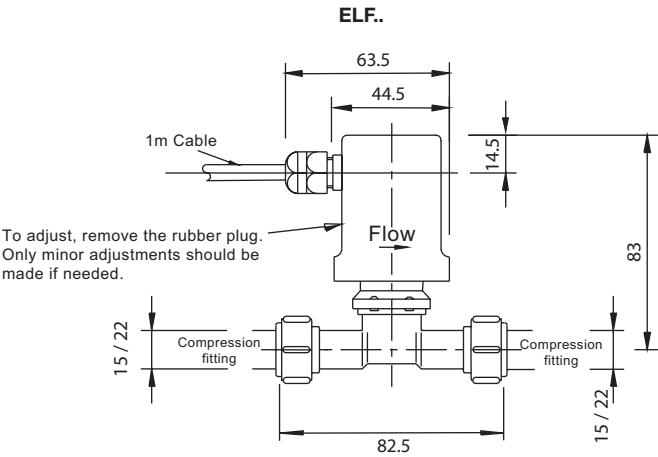
The ELF-15C & ELF-22C liquid flow switches are suitable for use in detecting flow in a wide range of applications ie. hot water, chilled water, drinking water, diesel oil and up to 30% glycol systems. They are normally used to monitor pump operation or switch alarms in the event of flow failure.



Concealed adjustment  
Volt free contacts  
Max. ambient 70°C  
Max Media Pressure 8 bar  
Enclosure Flammability = UL94-V0  
Fluids must not contain dissolved or undissolved particles

Type	Suitable for pipe dia.	230VAC SPDT	Switch Point Adjustable	Media Contact Material	Connection	Media Temp °C	Enclosure
ELF-15C	15mm	15(3)A	1.5 - 3 l/min	Brass, Polypropylene	15mm Compression	+4/85	IP65
ELF-22C	22mm	15(3)A	1.5 - 3 l/min	Brass, Polypropylene	22mm Compression	+4/85	IP65

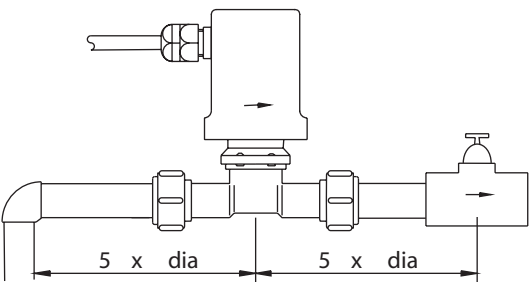
DIMENSIONS



WIRING:

<b>Brown Wire</b>	Common
<b>Black Wire</b>	NO Normally Open
<b>Grey Wire</b>	NC Normally Closed
Flow :	C-NO close C-NC open
No Flow :	C-NC close C-NO open

INSTALLATION:

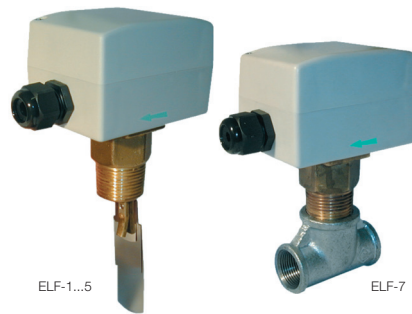


- 1 Ensure the arrow on the housing points in the direction of flow.
  - 2 Mount at any angle from vertical to 30 degrees above the horizontal. Other positions are not recommended as particles may fall into the unit and obstruct the rod from moving freely. It is recommended that a filter is installed upstream of the unit to protect against foreign particles.
  - 3 Mount away from elbows, bends and other restrictions likely to cause turbulence.
  - 4 Upstream-downstream of the switch should be straight for at least 5 x pipe diameter.
- Ensure that the pipes / tubes are not pushed too far into the flow switch connections as this can restrict the paddle from moving freely and affecting the correct switching operation.
- If adjustment is required, do not over-adjust as this may result in the switch failing to return.
- Before installing, push the paddle and allow it to return slowly, the switch should operate.

## LIQUID FLOW SWITCHES

### ELF..

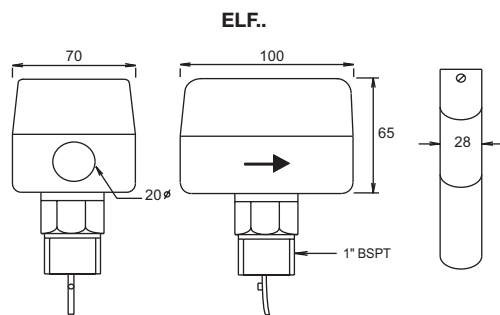
- ELF.. detects liquid flow through chillers, boilers, pipes and other units to monitor pump operation or switch alarms in the event of flow failure ie. hot water, chilled water, diesel oil and up to 30% glycol systems. ELF-4../5.. can be used with some aggressive liquids. Not suitable for salt water.



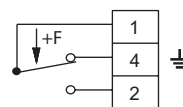
Concealed adjustment  
VOLT free contacts  
Max. ambient 70°C  
Max Media Pressure 12 bar  
1" 2" 3" paddles included.  
Paddles can be cut to suit pipe diameter.  
Enclosure Flammability = UL94-V0  
**ELF-15C / ELF-22C with 15/22mm compression fittings see separate data sheet.**  
1 m³/h = 0.27 l/sec

Type	Media Temp°C	230VAC SPDT	Operation	Media Contact Materials	Connection	Suitable for pipe dia.	Enclosure
<b>ELF-1C</b>	+4/110	15(8)A	Normal	Phosphor Bronze/Stainless steel/Brass	1" BSPT	1" - 8"	IP54
<b>ELF-3</b>	+4/110	15(8)A	Sensitive	Phosphor Bronze/Stainless steel/Brass	1" BSPT	1" - 8"	IP54
<b>ELF-4</b>	+4/110	15(8)A	Aggressive	Stainless steel	1" BSPT	1" - 8"	IP54
<b>ELF-5</b>	+4/110	15(8)A	Sensitive	Stainless steel	1" BSPT	1" - 8"	IP54
<b>ELF-3W</b>	-30/+110	15(8)A	Sensitive	Phosphor Bronze/Stainless steel/Brass	1" BSPT	1" - 8"	IP65
<b>ELF-4W</b>	-30/+110	15(8)A	Aggressive	Stainless steel	1" BSPT	1" - 8"	IP65
<b>ELF-5W</b>	-30/+110	15(8)A	Sensitive	Stainless steel	1" BSPT	1" - 8"	IP65
<b>ELF-7</b>	+4/110	15(8)A	Normal	Phosphor Bronze/Stainless steel/Brass	Tee ¾" x ¾"x 1"	¾" Only	IP54

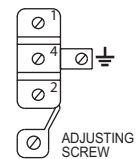
### DIMENSIONS



### WIRING:



Flow: 1-2 close 1-4 open.  
No Flow: 1-4 close 1-2 open.



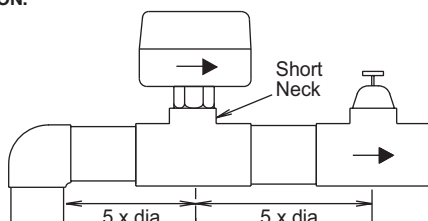
**Adjustment :** Units are pre-set to the approx. minimum setting.  
Adjusting below this value may result in the switch failing to return  
To increase switch point, slowly turn adjusting screw **CLOCKWISE**

### ACCESSORIES:

**EE-PS** Set of 1, 2 & 3" paddles for ELF..

**EE-6P** 6" Paddle for ELF-1,2,3,4,5

### INSTALLATION:



- Before installing, push paddle & allow it to return slowly, the switch should operate.
- Ensure the arrow on the housing points in the direction of flow.
- Mount at any angle from vertical to horizontal. Other positions are not recommended as particles may fall into the unit and obstruct the rod from moving freely.
- Mount away from elbows, bends and other restrictions likely to cause turbulence.
- Upstream-downstream of the switch should be straight for at least 5 x pipe diameter.
- Use a short neck weld socket or short branch tee, DO NOT mount in a long branch.
- The paddle must not touch the pipe or be obstructed in any way.
- Remove/trim paddles to suit pipe diameter.
- EE-6P can be fitted over existing paddles for extra strength in larger pipes.

### FLOW RATES:

All Flow rates indicated below are approximate and the readings have been taken with the unit mounted in a horizontal pipe.  
A slightly higher flow rate may be required if the unit is mounted in another position to compensate for the weight of the paddle.  
Example : ELF-1 pipe dia 2" On min adj. switch makes when flow increases to 3.1 m³/h and breaks when flow decreases to 2.2 m³/h.

bar **BLÜCHER**<sup>®</sup> MICROFLEX<sup>®</sup> SOCLA  valpes

