MIKROFILL®

Pressurisation Equipment

EFD • MAXI • MAXI PLUS

Expansion Vessels, Compressor Vessels

MIKROFILL®

Electronic Filling Device (EFD)

The unique EFD is the most advanced pressurisation and filling device available. A Pressure Logic™ microprocessor unit controls system pressure with the system status continuously indicated on a liquid crystal display. A multi function control panel accesses all control functions.

The WRAS approved EFD fulfils three vital roles; backflow preventor, filling device and pressurisation manager all within one wall mounted compact unit. It offers designers and installers the flexibility formerly not available from other manufacturers. The EFD is a fully automatic wall mounted sealed system filling unit suitable for either domestic or commercial heating and cooling systems (water risk category 3 & 4).

Unlike conventional pressurisation equipment the EFD contains no pumps or storage tanks. The EFD utilises mains cold water to fill and maintain pressure. Backflow prevention is achieved by using a patented principle to generate an air gap between the heating/chiller system and the cold water main.

Having a fill rate of 14 litres/min @ 1 bar the EFD is capable of filling systems from empty. The Pressure Logic™ microprocessor controls all functions of the EFD, maintaining system pressure, protecting the system from high or low pressure fault condition, monitors system fill rates and shuts down in the event of a large pressure drop/water loss.

BMS relays for remote indication of high or low pressure fault and normal run conditions are standard. An hours run facility allows the user to calculate system content and any abnormal water usage.

The EFD is suitable for cold fill pressures within 0.3 bar of the cold water mains pressure and up to 5 bar when connected to a suitable booster set.

Ease of installation has always been an important feature of all Mikrofill products and the EFD is no exception. The EFD is delivered with full factory commissioning and comes with twelve months parts and labour guarantee. The EFD is the smallest self contained pressurisation management unit available having unsurpassed level of performance and specification.

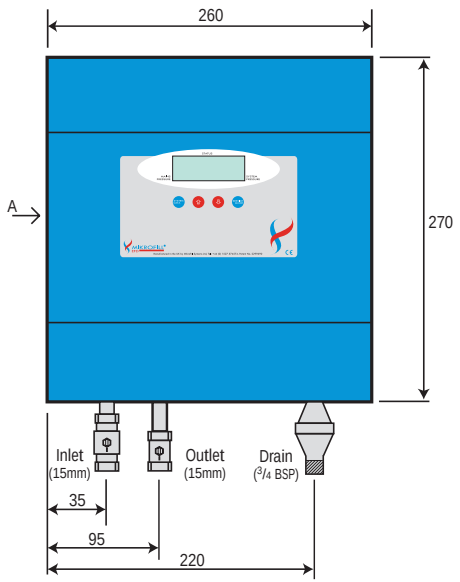
Control Features:

- High pressure alarm – deactivates boiler / chiller relay
  – activates BMS relay
- Low pressure alarm – deactivates boiler / chiller relay
  – activates BMS relay
- Flood alarm – actuates system shutdown
- Hours run indication
- Frequent use alarm
- BMS relay override
- Audible alarm with override
- Self diagnostic

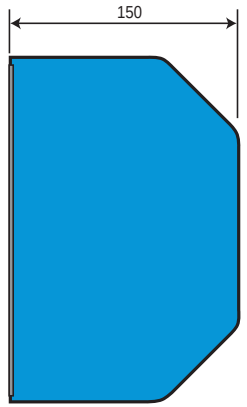
Benefits:

- Twelve months parts and labour guarantee
- WRAS approved for connection directly to mains water supply
- Back flow prevention (up to fluid category four)
- Precise pressure control
- Unique Pressure Logic™ microprocessor with self diagnostic electronics
- Factory commissioned (no on site commissioning required)
- Unique flood alarm
- Relay for boiler / chiller control
- Fills entire systems from empty
  (no RPZ or temporary connections required)
- Compact wall mounted design

Dimensions

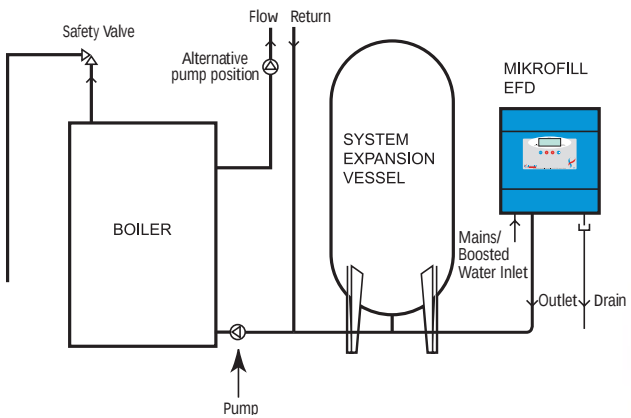


Weight 8kg



View on Arrow 'A'

Typical Installation Diagram



The expansion vessel is usually connected on the inlet side of the pump on the system return. For systems with flow temperatures exceeding 90°C contact our technical department for advice.

MIKROFILL®

Maxi & Maxi Plus

The Mikrofill Maxi range of Pressure Logic™ microprocessor controlled pressurisation units are purpose designed with both the specifier and installer in mind. They feature the very latest in microprocessor technology, together with the tried and tested components featured in the original MAXI range.

The Maxi range of pressurisation units represent the ultimate in design, technology, quality and system control, offering benefits unique to the Mikrofill range of filling and pressurisation units.

Benefits:

- Twelve months parts and labour guarantee
- Precise pressure control
- Unique "Pressure Logic™" microprocessor, developed by Mikrofill Systems Ltd
- Factory commissioned (no site commissioning required)
- Unique flood alarm. The Maxi units will not "feed" a major leak
- BMS relays for high and low pressure alarms
- BMS relays for pump fault alarm (Maxi Plus only)
- Relay for boiler or chiller control
- Compact design
- Low water level protection
- Pump dry run protection
- Automatic pump changover (Maxi Plus only)
- Auto sequencing of duty pump (Maxi Plus only)
- Full status indication
- Sturdy power coated steel casing
- High quality bronze peripheral pump(s)
- Bulkhead mounted ball float valve, with type AA air gap and offering maximum water storage
- Integral double pole electrical insolator
- Suitable for cold fill pressures up to 3.00 bar (30 metres head)
- High pressure units up to 5.00 bar (50 metres head) available
- Suitable for wall or floor mounting
- Low electrical loading
- Self diagnostic electronics
- BMS relay override
- Audible alarm with override

The Mikrofill Maxi range of microprocessor controlled pressurisation units are suitable for cold fill pressures up to 3.00 bar or (6 bar high pressure unit). Housed in a 1.5mm powder coated "zintec" steel cabinet the Maxi incorporates a 25 litre plastic cold water header tank with a bulkhead mounted class 1 type ball float valve arranged to form a Type AA air gap. A low water level switch is situated in the feed tank.

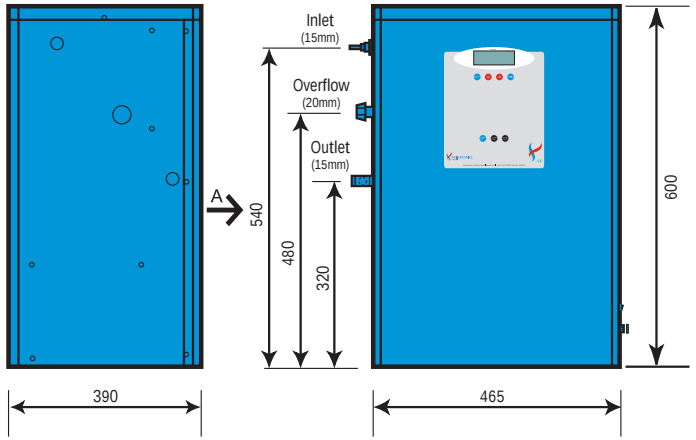
A peripheral bronze pump / pumps with bronze impellor and nitrile seals are mounted on the chassis; interconnecting pipe work is manufactured using polyethylene pipe and fittings incorporating all check valves and strainers.

A "Pressure logic™" Microprocessor unit controls system pressure Continuous system status is indicated on the LED readout. The unit incorporates "flood alarm" and offers the following status information:

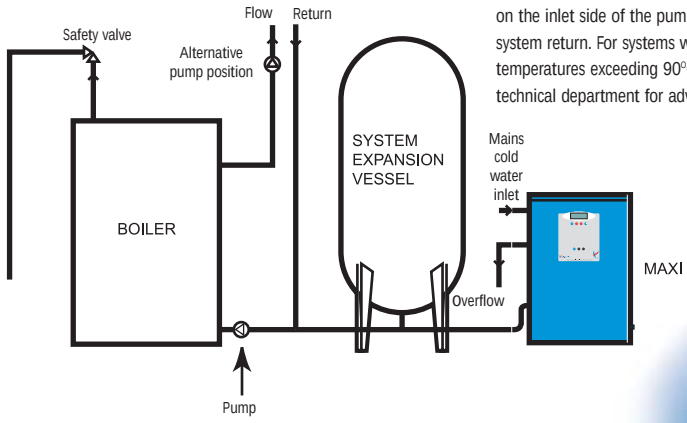
High level alarm setting	- deactivates boiler /chiller relay
	- activates BMS relay
Low level alarm setting	- deactivates boiler/ chiller relay
	- activates BMS relay
Flood alarm	- actuating system shutdown

Frequent use alarm
Pump failure alarm (actuates changeover to second pump on MAXI PLUS)
Second pump failure alarm
Low water level alarm, deactivates pressurisation pump until water level reinstates

Dimensions



Typical Installation Diagram



The expansion vessel is usually connected on the inlet side of the pump on the system return. For systems with flow temperatures exceeding 90°C contact our technical department for advice.

Alarm Conditions (all units)

High/Low Pressure (All models):
If for any reason (except when initially filling) the system water pressure falls below or rises above the preset alarm pressure setting, the pressure alarm BMS relay will actuate allowing remote signals to be conveyed to any BMS system. The units LCD will warn of the high or low pressure condition and the boiler/chiller relay will activate to protect the system. On restoration of correct working pressure the system will automatically reset.

Flood Alarm (All models):
If a potential flood condition or excessive water demand was detected the unit would rapidly react, the Pressure Logic™ controller would shut the system down deactivating the boiler/chiller relay and stopping any filling operation. The system will not automatically reset, this must be done manually.

Frequent use (All models):
If the unit detects that the system is frequently demanding water the frequent use alarm will register the condition.

Low water level (Maxi range):
Should the water level in the feed tank drop below a predetermined level the LCD on the unit will display the condition and the integral pump/pumps will be disabled.

Dry run protection (Maxi range):
Should the water flow fail the pump/pumps will be deactivated, dry run fault will be displayed on the LCD.

Additional Notes

The Mikrofill Electronic Filling Device is WRAS approved for filling closed primary heating and cooling circuits in commercial and domestic premises. WRAS certificate number 0201032.

All Mikrofill products should be installed by a competent person with regard to the relevant requirements of the Health and Safety, Building, IEE, Water Supply (Water Fittings) Regulations, Water Byelaws (Scotland) and any local planning requirements.

Guarantee Terms

The Mikrofill Pressurisation units carry a 12 months guarantee against faulty manufacture or materials provided that:

- It has been correctly installed as per the instructions in the instruction manual and all the relevant codes of practice and regulations in force at the time of installation
- It has not been modified in any way, other than by Mikrofill Systems Ltd
- It has not been frost damaged
- It has not been tampered with or been subjected to misuse or neglect
- Measures are taken to prevent limescale build up

This guarantee does not affect your statutory rights.

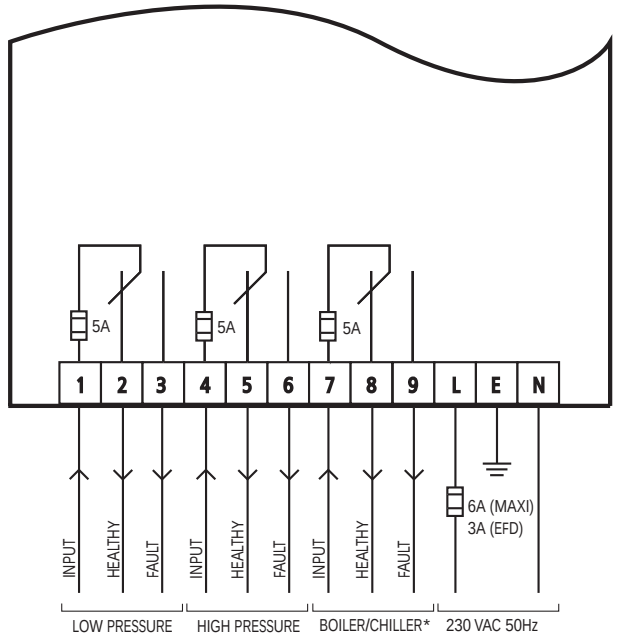
Electrical Data Maxi/Maxi Plus

Supply: 230V 1ph 6 amp
Full Load current: 2.5 amp
Start current: 4.5 amp
Fuse Rating: 6 amp
BMS relays: Volt free contacts rated at 250V @ 5 amp
Boiler / chiller control relay volt free contact rated at 250V @ 5 amp
All relays are independently fused at 5 amp

Electrical Data EDF

Supply: 230V 1ph 6 amp
Full Load current: 1 amp
Start current: 1 amp
Fuse Rating: 3 amp
BMS relays: Volt free contacts rated at 250V @ 5 amp
Boiler / chiller control relay volt free contact rated at 250V @ 5 amp
All relays are independently fused at 5 amp

Wiring Diagram



* Boiler/chiller relay will activate in either high or low alarm conditions