

matrix

pressurisation units



altecnic
Caleffi group

matrix pressurisation units



Introduction

The matrix standard and compact pressurisation sets are fully packaged units designed to maintain the minimum design pressure in LTHW sealed heating systems.

The units are supplied in a high quality zinc coated steel casing, finished in a textured white stove enamelled epoxy powder coating

Design

The compact and standard pressurisation units consist of a pump, header tank with float valve, a pump control pressure switch, high and low pressure switches (low only on compact), a pressure gauge (which is visible from the front of the cabinet), non-return and isolating valves and connecting pipework.

Technical Specification

Model		Compact Wall Mounted	Standard Floor Standing
Min. cold fill pressure	bar	0.7	0.7
Max. cold fill pressure	bar	3.4	3.4
Max. operating pressure	bar	7.0	7.0
Max. flow rate	l/m	6	6
Cold water flow rate@ Maximum cold fill pressure	l/m	0.1	0.1
Weight - empty	kg	13	19
Weight - full	kg	16	27
Tank capacity	litres	2.6	7.6

Factory Preset Values

Cold fill pressure	bar	1.8	1.8
Low pressure switch setting	bar	1.3	1.3
High pressure switch setting	bar	-	3.65

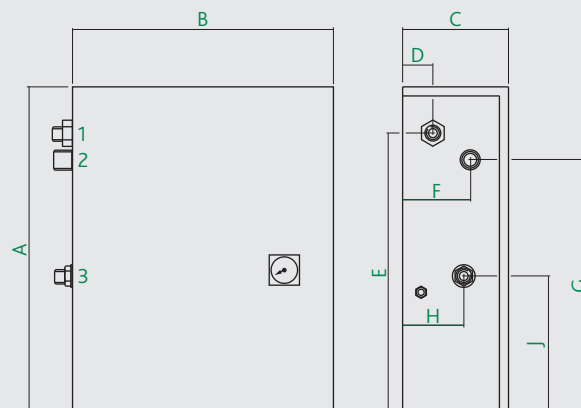
System Conditions

Max. water flow temperature	°C	82	82
Safety relief valve setting	bar	4.0	4.0
Nom. pressure differential	bar	0.4	0.4

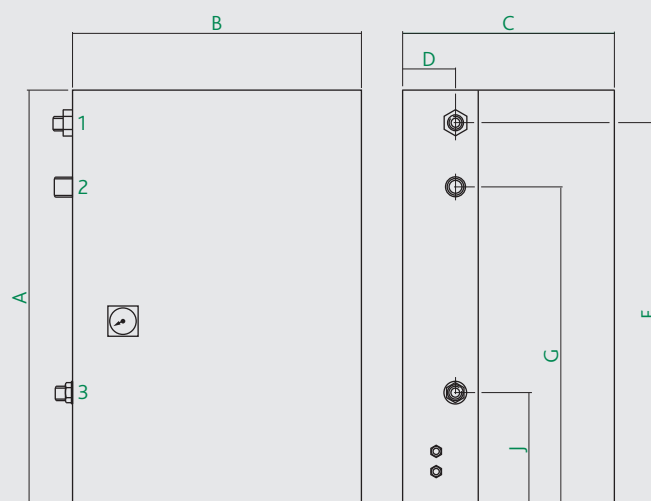
Electrical Conditions

Pressure switch contact rating		15A 240V AC	15A 240V AC
Electrical supply		230V AC 50Hz 1ph	230V AC 50Hz 1ph
Start current	amp	9	9
Run current	amp	2.8	2.8

Dimensions



Matrix Compact



Matrix Standard

Unit	A	B	C	D	E	F	G	H	J
Compact	430	345	140	40	369	90	334	81	180
Standard	550	382	280	70	507	-	442	-	150

Connections

Connection	Thread	Function
1	½" BSP male plastic - G½B	Water supply inlet
2	¾" BSP male plastic - G¾B	Tank over flow
3	15mm compression	Outlet to system

Screw threads conform to BS EN ISO 228

Product Code Description

MI-100001	matrix standard pressurisation unit - floor standing
MI-100002	matrix compact pressurisation unit - wall mounted

Note:

The Altecnic matrix pressurisation units comply with the essential requirements of the Machinery Directive 89/392/EEC amended by 91/368/EEC, the Low Voltage Directive 73/23/EEC amended by 93/68/EEC and the Electromagnetic Compatibility Directive 89/336/EEC amended by 91/263/EEC and 92/31/EEC.

System Filling

The Matrix pressurisation unit should not be used to fill the system.

It is designed to 'top-up' the system in the event of pressure loss due to de-aeration and minor systems leaks with will reduce the volume of water.

A WRAS approved filling loop should be used for initial water filling.

The temporary fill loop must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 and the Scottish Water Bylaws 2004 and **MUST be removed after initial filling.**

Operation

A drop in system pressure below the cold fill pressure due to, for example, loss of water, will cause the pressure switch (E) to switch on the pump and pump water from the tank into the main system thus restoring system pressure.

As the level of water in the tank reduces the ball float valve opens and allows water to flow into the tank until the required level is reached.

Safety Function

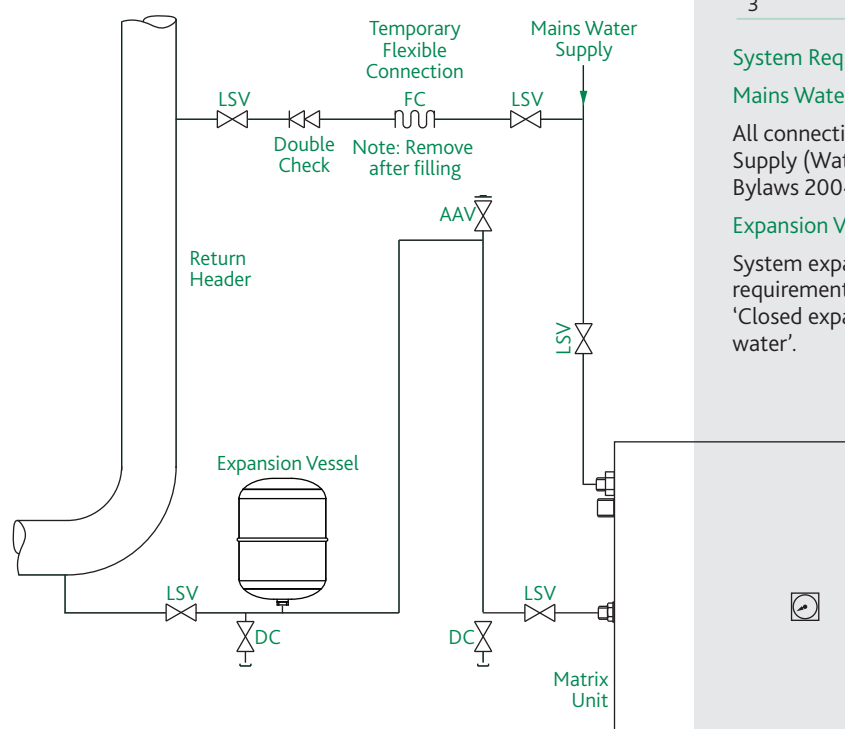
The Standard floor standing unit is fitted with high pressure and low pressure switches which act as a safety shut off feature.

The Compact wall mounted unit only has a low pressure switch for the pump on/off, **this is not a safety feature.**

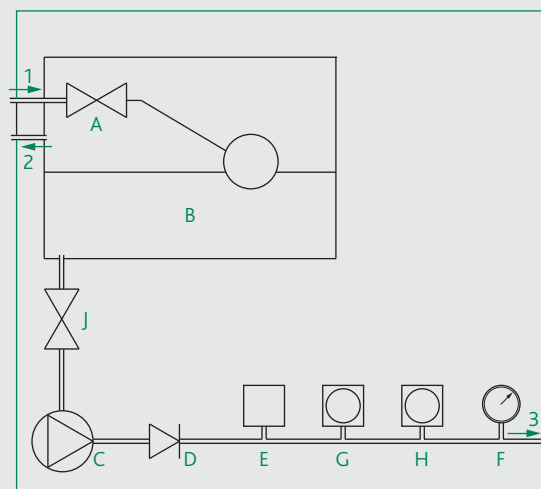
A pressure above the set pressure of SPDT high pressure switch will switch off the pump and a pressure below the set pressure of the SPDT low pressure switch will switch on the pump.

Application Diagram

The diagram shows a typical sealed system incorporating a Matrix pressurisation unit and an expansion vessel.



Schematic of Matrix Pressurisation Unit



Item	Component	Item	Component
A	Ball float valve	F	Pressure gauge 0 - 6 bar
B	Break tank	G	High alarm switch
C	Pump	H	Low alarm switch
D	Double check valve	J	Isolating valve
E	Pressure switch		

Connection	Thread	Function
1	½" BSP male plastic - G½B	Water supply inlet
2	¾" BSP male plastic - G¾B	Tank over flow
3	15mm compression	Outlet to system

System Requirements

Mains Water Connection

All connections to local water mains must comply with the Water Supply (Water Fittings) Regulations 1999 and the Scottish Water Bylaws 2004 including any local requirements.

Expansion Vessel

System expansion vessels must be manufactured to meet the requirements of PED 97/23/EC Directive and BS EN 13831:2007 'Closed expansion vessels with built in diaphragm for installation in water'.

Expansion vessels must be sized correctly for the size of system.

Altecnic are able to offer a full range of expansion vessels.

Safety Relief Valve

Safety relief valves must comply with BS EN ISO 4126-1:2004, and be sized and installed in accordance with BS 6644 and BS 7074.

E & O.E

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