



## Basics

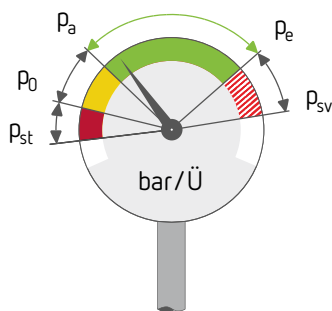
# Pressures in the system

reflex+  
experts No.

**B10**

Valid for pre-pressurisation in heating, cooling and solar thermal systems

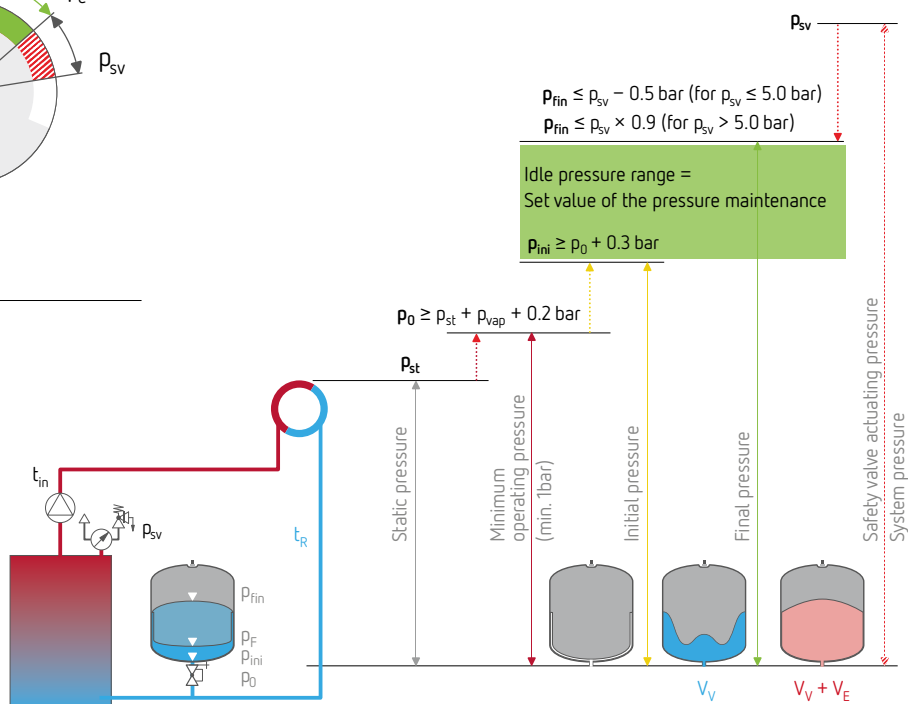
## Overpressures



System pressure changes

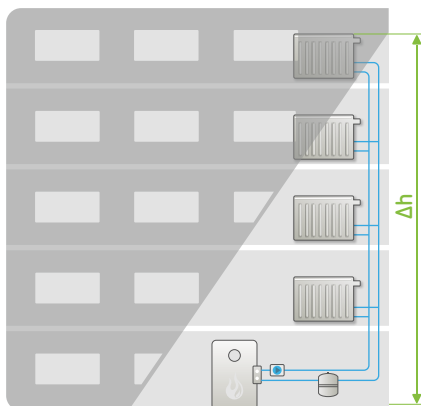
## Calculation variables

Pressures are specified as gauge pressures and refer to the connection pipe of the diaphragm expansion vessel.



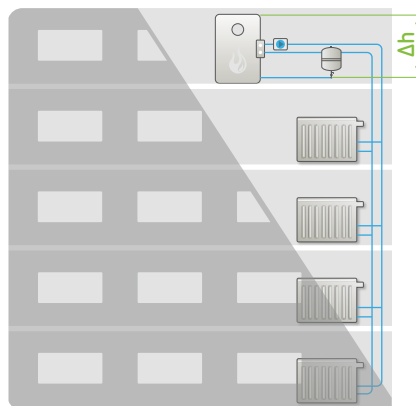
## Variants of $p_{st}$

Building services in the basement



$$p_{st} = p \times g \times \Delta h$$

Building services in the roof



$$\text{e.g. with } \Delta h = 3 \text{ m} \rightarrow p_{st} \approx 0.3 \text{ bar/gauge pressure}$$

Basics

Function

Operation & Maintenance



## Basics

# Pressures in the system

reflex+  
experts No.  
**B11**

Valid for pre-pressurisation in heating, cooling and solar thermal systems

## Diaphragm expansion vessel

### Reflex, Refix

**$p_{SV}$**  Safety valve actuating pressure  
The permissible operating overpressure must not be exceeded at any point in the system.

**$p_{AZ1}$**   
= DBmax pressure limiter required according to DIN EN 12828, if the boiler individual capacity > 300 kW

**$p_{fin}$**  Final pressure  
System pressure at the maximum temperature

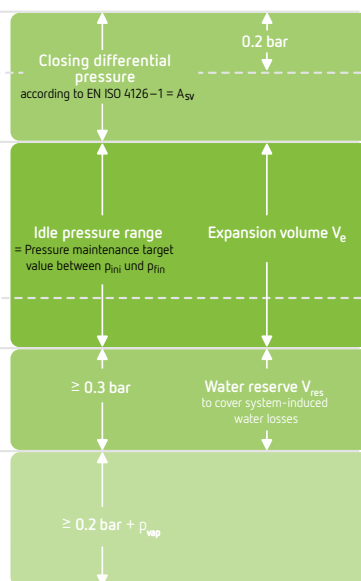
**$p_F$**  Filling pressure  
System pressure at the filling temperature

**$p_{ini}$**  Initial pressure  
System pressure at the lowest temperature

**$p_0$**  Minimum operating pressure  
Minimum pressure for preventing vacuum formation, cavitation and evaporation, pre-pressure for expansion vessel

**$p_{AZ1}$**  = DBmin Minimum pressure limiter for hot water acc. DIN EN 12953-6 required if hot water, i.e. protection temperature > 110 °C  
 $p_{vap}$  = evaporation pressure

**$p_{st}$**  Static pressure  
Pressure of the water column corresponding to the static head (H)



Pressures are specified as gauge pressures and refer to the connection socket of the MAG or the pressure sensor for pressure maintenance stations

## Pressure maintenance stations

### Reflexomat (factory setting)

**$p_{SV}$**  Safety valve actuating pressure  
on the heat generator

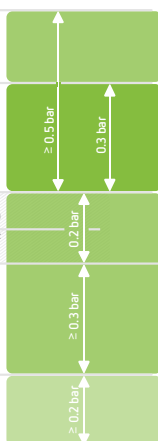
**$p_{max}^*$**

**$p_{fin}$**  Final pressure  
Solenoid valve OPEN

**$p_{ini}$**  Initial pressure  
Compressor ON

**$p_0^*$**   $p_{st} + p_{vap} + 0.2$  bar (Recommendation)

**$p_{st}$**  Static pressure (= static height / 10)



## Pressure maintenance stations

### Variomat (factory setting)

**$p_{SV}$**  Safety valve actuating pressure  
on the heat generator

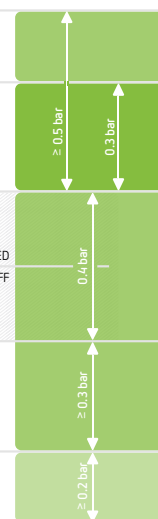
**$p_{max}^*$**

**$p_{fin}$**  Final pressure  
Overflow valve OPEN

**$p_{ini}$**  Initial pressure  
Pump ON

**$p_0^*$**   $p_{st} + p_{vap} + 0.2$  bar (Recommendation)

**$p_{st}$**  Static pressure (= static height / 10)



\* Fault message in the event of under- or overpressure