

4 Design pressure and temperature

4.1 General

Where pressure relief devices are used, set points for these shall be in accordance with the design code applied for the components in the system.

4.2 Design pressure

4.2.1 Maximum design pressure

For systems protected by a PSV, the criteria in Table 1 shall be applied unless the PSV manufacturer guarantees that use of other margins is acceptable. The minimum margin is defined to avoid unintentional PSV opening. The relation between high trip pressure and maximum operating pressure is given in Figure 1.

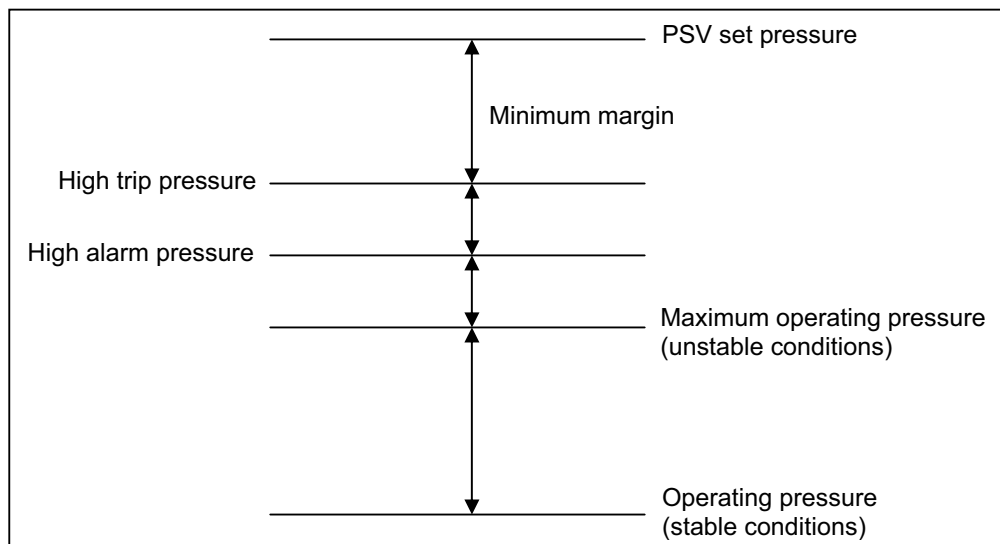


Figure 1 - Pressure relations

Table 1 - Design pressure criteria for pressurised systems

High trip pressure (1),(2) barg	Minimum margin between high trip pressure (1),(2) and PSV set pressure bar
0 to 35	3,5
over 35	10 % of PSV set pressure

(1) For systems without a high pressure trip, the minimum margin shall be applied between the maximum operating pressure and the PSV set pressure.

(2) Maximum operating pressure for compressor suction scrubbers and coolers shall be the maximum settle-out pressure, calculated from coincident high trip pressures on both suction and discharge sides of the compressor, and the minimum margin shall be applied between the maximum operating pressure and the PSV set pressure.

When rupture disks are applied, sufficient margin shall be included to

- prevent unintentional disk ruptures, i.e. margin between the disk set pressure and the operating pressure,
- ensure system pressure protection, i.e. margin between the disk set pressure and the maximum accumulated overpressure.

Reference is made to relevant pressure relieving design codes for further guidance.

When accurate information is unavailable, the shut-in pressure for centrifugal compressors should be determined as the maximum operating suction pressure +1,3 times the normal differential pressure developed by the compressor, to include for pressure rise at surge condition and maximum speed. The