

### Pulse air

The pulse air may be generated by a high-pressure piston or screw compressor with a dryer.

The air pressure is typically reduced to 2.5-4 bar in the Simatek pressure regulator.

### Humidity

The requirements for the pulse air humidity are based on the idea that water condensation is not allowed at any point from the compressor to the filter.

With regard to the temperature of the compressed air receiver, the acceptable pressure dewpoint is reduced by 10°C in order to prevent freezing of the pilot valve in the pulse valve.

The critical temperature;  $t_c$  is the lowest temperature of the following:

- 1) Ambient temperature of the pipeline from compressor to filter.
- 2) The ambient temperature of the compressed air receiver - 10°C. (I.e. if ambient temperature of the compressed air receiver is 15°C,  $t_c$  is rated 5°C).
- 3) Process gas temperature. (The temperature of the gas being filtered in the Simatek filter).

Furthermore, for hygroscopic dust types, it is essential that there is a good margin between the process air temperature and the pulse air pressure dew point temperature. ( $t_c$  should be rated even lower).

### One of the following two criteria must be met:

- A If the compressor generates 6-10 bar, and the compressed air is cooled to a temperature equal to or lower than  $t_c$  before entering the pipeline, the compressed air will be sufficiently dry with regard to condensation in the pipeline.
- B Humidity for  $t_c > +10^\circ\text{C}$  ISO8573 Class 6  
 Humidity for  $t_c > +7^\circ\text{C}$  ISO8573 Class 5  
 Humidity for  $t_c > +3^\circ\text{C}$  ISO8573 Class 4  
 Humidity for  $t_c > -20^\circ\text{C}$  ISO8573 Class 3  
 Humidity for  $t_c > -40^\circ\text{C}$  ISO8573 Class 2

### Oil content

The oil content in the compressed air shall be below 1 mg oil per m<sup>3</sup>, i.e. ISO 8573 quality class 3 or better.

### Solid particle content

The solid particle content in the compressed air shall be according to ISO 8573 quality class 5 or better.

See also fig. 1 below.

Class	Particle size	Particle density	Water		Oil
	max. in $\mu\text{m}$	max. in $\text{mg}/\text{m}^3$	Pressure dew-point in $^\circ\text{C}$	Water $\text{mg}/\text{m}^3$	Residual oil content in $\text{mg}/\text{m}^3$
1	0,1	0,1	-70	3	0,01
2	1	1	-40	120	0,1
3	5	5	-20	880	1
4	15	8	3	6.000	5
5	40	10	7	7.800	25
6			10	9.400	

Fig. 1. Compressed air quality classes acc. to ISO 8573