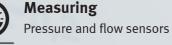
# Air preparation: the basics

Air preparation is the basis for the right compressed air quality at the start of every machine or application. This is what determines the safety and reliability of all pneumatic systems.

#### **Regulator function**

Switching and regulating On/off valves and pressure regulators



Safety Soft-start and security valves. LOTO for operating functions.



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Compressed air supply Line		Compressed air prep		Class	Application			
Compressor [*:7:*]		Water separator		[*:7:*]	All applications where only the water content of the compressed air is important (e.g. mining).			
Filter Dryers [7:4:4]		40 μm			[7:4:4]	Standard specification for pneumatic valves and cylinders.		
		40 μm 5 μm			[6:4:4]	Necessary for servo-pneumatic positioning tasks.		
		40 µm 5 µm 1 µm			[2:4:3]	Applications requiring higher values due to dust particles and oil residue, such as in the paper or textile industry.		
		40 μm 5 μm 1 μm 0.01 μm			[1:4:2]	Applications in bearing technology and powder coating.		
		40 µm 5 µm 1 µm	0.01 µm	Act. carbon	[1:4:1]	Applications with optical components, such as lasers etc.		
		40 μm 5 μm 1 μm	0.01 µm	Membr. Act. carbon	[1:3:1]	Semicon and pharmaceutical industry.		
[7:4:4]•		40 µm 5 µm 1 µm	Adsor	ption dryer	[2:2:2]	Transport of powder, in the food zone it even is [1:2:1].		

### **Compressed air quality**

#### Condensate

Water separators, adsorption 00 dryers and membrane air dryers



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## Particles

Surface and cartridge filters



Activated carbon filters

#### The variables

Air purity class	Particle si	ize		Vapour		Oil				
	≤ 0.1 µ	0.1µ-0.5µ	0.5µ-1.0µ	1.0µ-5.0µ	Pressure dew point	Vapour	Aerosols/ vapour			
	Particles/N	Nm3		°Cdp	g/Nm3	Mg/Nm3				
0	As specified by the equipment user and more stringent than Class 1									
1	N.S.	≤ 20,000	≤ 400	≤ 10	≤-70	≤ 0.003	≤ 0.01			
2	N.S.	≤ 400,000	≤ 6,000	≤ 100	≤-40	≤ 0.11	≤ 0.1			
3	N.S.	N.S.	≤ 90,000	≤ 1,000	≤-20	≤ 0.88	≤ 1			
4	N.S.	N.S.	N.S.	≤ 10,000	≤ +3	≤ 6	≤ 5			
5	N.S.	N.S.	N.S.	≤ 100,000	≤ +7	≤ 7.8	> 5			
6	Cp: 0 mg/N	lm3 < CP ≤ 5	mg/Nm3	≤ +10	≤ 9.4	-				
7	Cp: 5 mg/Nm3 < CP ≤ 10 mg/Nm3 –									
Х	Cp: CP > 10 mg/Nm3 –									
<b>Reference conditions:</b> Temperature: 20 °C / Pressure: 1 bara / H <sub>2</sub> O pressure: 0 bar as per ISO-8573-1:2010 / Class 4 Cp: Mass concentration: Cw: liquid water concentration: N.S.: Not specified										

Class 4 Cp: Mass concentration; Cw: liquid water concentration; N.S.: Not specified.



#### The guidelines for compressed air purity are described in ISO 8573-1:2010. They divide the compressed air quality in 7 classes based on 3 variables.