
International Standard



7183

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Compressed air dryers — Specifications and testing

Sécheurs d'air comprimé — Spécifications et essais

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7183 was prepared by Technical Committee ISO/TC 118, *Compressors, pneumatic tools and pneumatic machines*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition unless otherwise stated.

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Compressed air dryers — Specifications and testing

1 Scope and field of application

This International Standard specifies reference conditions, acceptance test methods and the most important characteristic data of different dryers.

It is applicable to compressed air dryers working in the effective (gauge) pressure range of 0,16 to 40 MPa (1,6 to 400 bar), but excluding:

- a) liquid absorption types;
- b) cooling with aftercooler;
- c) overcompression.

2 Units

General use of SI units (Système International d'Unités, see ISO 1000) as given throughout this International Standard is recommended.

However, in agreement with accepted practice in the pneumatic field, some non-preferred SI units, accepted by ISO, are also used; these are given in table 1.

Table 1 — Non-SI units

Measurement	Unit name	Unit symbol	Definition
pressure	bar	bar	1 bar = 10^5 Pa
volume	litre	L	1 L = 1 dm^3
time	minute	min	1 min = 60 s
	hour	h	1 h = 60 min = 3 600 s

3 References

ISO 131, *Acoustics — Expression of physical and subjective magnitudes of sound or noise in air.*

ISO 266, *Acoustics — Preferred frequencies for measurements*

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units.*

ISO 1217, *Displacement compressors — Acceptance tests.*

ISO 1219, *Fluid power systems and components — Graphic symbols.*

ISO 5167, *Measurement of fluid flow by means of orifice plates, nozzles and Venturi tubes inserted in circular cross-section conduits running full.*

ISO 5388, *Stationary air compressors — Safety rules and code of practice.*

ISO 5389, *Turbocompressors — Performance test code.*¹⁾

ISO 5941, *Compressors, pneumatic tools and machines — Preferred pressures.*

IEC Publication 51, *Recommendations for direct acting indicating electrical measuring instruments and their accessories.*

IEC Publication 651, *Sound level meters.*

4 Definitions

4.1 moisture content (gram per cubic metre): Ratio of water and water vapour by mass to the total volume.

4.2 vapour concentration (gram per cubic metre): Ratio of water vapour by mass to the total volume.

NOTE — Vapour concentration was earlier called "absolute humidity" and has been used to describe what is more correctly termed "water load", i.e. the water content of the desiccant expressed as a mass ratio.

4.3 vapour ratio: Mass ratio of water vapour (gram) to dry air (gram).

NOTE — It is not recommended to express the vapour ratio in parts per million (PPM). When parts per million are used (at very low dew points) it should be clearly stated whether it is on a mass or a volume ratio basis.

4.4 partial pressure (millibar): Absolute pressure exerted by any component in a mixture.

4.5 saturation pressure (millibar): Total pressure at which moist air at a certain temperature can coexist in neutral equilibrium with a plane surface of pure condensed phase (water or ice) at the same temperature (see annex B).

1) At present at the stage of draft.