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**Pneumatic fluid power — Valves — Data  
to be included in supplier literature**

*Transmissions pneumatiques — Distributeurs — Données à inclure  
dans la documentation des fournisseurs*

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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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17082 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 5, *Control products and components*.

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## Introduction

In pneumatic fluid power systems, power is transmitted and controlled through air under pressure within a circuit. Typical components found in such systems are pneumatic valves. These devices control flow direction, pressure or flow rate of air in the circuit.

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# Pneumatic fluid power — Valves — Data to be included in supplier literature

## 1 Scope

This International Standard specifies which data are to be included in the manufacturer's supplier literature that accompanies any kind of pneumatic valve. These data are vital in selecting the proper valve for a particular application.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1219-1, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*

ISO 3448, *Industrial liquid lubricants — ISO viscosity classification*

ISO 4400, *Fluid power systems and components — Three-pin electrical plug connectors with earth contact — Characteristics and requirements*

ISO 5598, *Fluid power systems and components — Vocabulary*

ISO 5599-1, *Pneumatic fluid power — Five-port directional control valves — Part 1: Mounting interface surfaces without electrical connector*

ISO 5599-2, *Pneumatic fluid power — Five-port directional control valves — Part 2: Mounting interface surfaces with optional electrical connector*

ISO 6358, *Pneumatic fluid power — Components using compressible fluids — Determination of flow-rate characteristics*

ISO 6952, *Fluid power systems and components — Two-pin electrical plug connectors with earth contact — Characteristics and requirements*

ISO 11727, *Pneumatic fluid power — Identification of ports and control mechanisms of control valves and other components*

ISO 12238, *Pneumatic fluid power — Directional control valves — Measurement of shifting time*

ISO 15217, *Fluid power systems and components — 16 mm square electrical connector with earth contact — Characteristics and requirements*

ISO 15218, *Pneumatic fluid power — 3/2 solenoid valves — Mounting interface surfaces*

ISO 15407-1, *Pneumatic fluid power — Five-port directional control valves, sizes 18 mm and 26 mm — Part 1: Mounting interface surfaces without electrical connector*

ISO 15407-2, *Pneumatic fluid power — Five-port directional control valves, sizes 18 mm and 26 mm — Part 2: Mounting interface surfaces with electrical connector*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 apply.

### 4 Data to be included in supplier literature

The information called for in the columns titled “Types of data” and “Requirements” of Table 1 is the minimum that shall be included in supplier literature. Information in the “Examples” column is given for informative purposes only.

**Table 1 — Types of data to be included in supplier literature**

Type of data	Requirements	Examples
Supply pressure range of the valve	Minimum and maximum	0 to 1 600 kPa (0 to 16 bar)
Operating fluid	Description	— compressed air — inert gases — vacuum — other
Shifting pressure range	Minimum and maximum  NOTE Description of any internal and/or external solenoid pilot supply requirement, where they exist, should be explained.	170 to 1 000 kPa (1,7 to 10 bar)
Lubrication requirements	Yes/No – if yes, viscosity of the lubricant	ISO VG 32, in accordance with ISO 3448
Compressed air quality requirements	—	Moisture-free, filtered with a filter rated at 40 µm or finer
Temperature rating	Maximum and minimum  NOTE The temperature rating covers the effect of ambient and fluid temperatures on the function of the valve.	–10 °C to +50 °C
Mass	Amount, not including packaging	1,1 kg
Dimensional standards to which the valve conforms.	Identification of standard	— ISO 5599-1 — ISO 5599-2 — ISO 15218 — ISO 15407-1 — ISO 15407-2
Certifications	The standard to which the valve has been certified.	— UL 429 — CSA 22.2-139 — EN standards related to CE markings

Table 1 (continued)

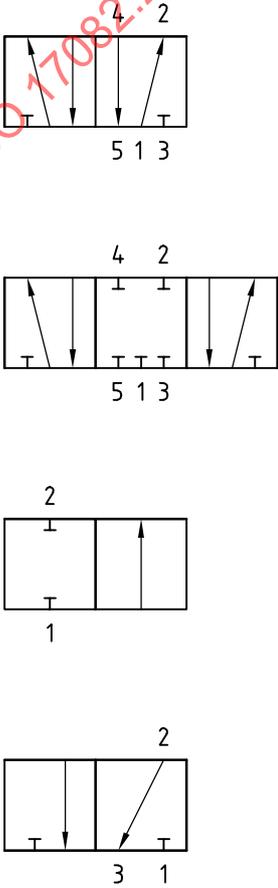
Type of data	Requirements	Examples
Dimensions	<ul style="list-style-type: none"> <li>— length, width, height</li> <li>— mounting holes, hole centres</li> <li>— connecting ports, port centres</li> <li>— other major features</li> </ul>	—
Valve function description	Type of valve	<ul style="list-style-type: none"> <li>— Directional control valves (for example, 3/2, 4/2, 5/2 and 5/3)</li> <li>— Flow control valves</li> <li>— Non-return (check) valves, etc.</li> </ul>
Valve connection symbols and port identification	In accordance with ISO 1219-1 and ISO 11727.	 <p>The examples show four hydraulic symbols for directional control valves. Each symbol is a rectangle divided into two or three chambers. Arrows indicate the flow direction in each chamber. Port numbers (1, 2, 3, 4, 5) are placed around the rectangles to identify the ports. The first symbol is a 4/2-way valve with ports 4, 2, 5, 1, 3. The second is a 5/2-way valve with ports 4, 2, 5, 1, 3. The third is a 2-way valve with ports 2, 1. The fourth is a 3-way valve with ports 2, 3, 1.</p>
Flow rating	$b$ and $C$ , determined in accordance with the test method in ISO 6358.	$b = 0,3;$ $C = 560 \text{ dm}^3/(\text{s}\cdot\text{kPa})$ ( $5,6 \text{ dm}^3/[\text{s}\cdot\text{bar}]$ ) NOTE Flow rating coefficients determined in accordance with local or regional standards or practices may be included.
Basic materials of construction	Description of major elements: <ul style="list-style-type: none"> <li>— body</li> <li>— base</li> <li>— valving element</li> <li>— seals</li> <li>— springs</li> </ul>	<ul style="list-style-type: none"> <li>— Aluminium</li> <li>— Zinc</li> <li>— Nitrile</li> </ul>

Table 1 (continued)

Type of data	Requirements	Examples
Valve type	Description of valving element	<ul style="list-style-type: none"> <li>— spool with O-rings</li> <li>— spool, bonded</li> <li>— spool, packed bore</li> <li>— poppet</li> <li>— lapped spool</li> <li>— lapped disc</li> </ul>
Control mechanisms	Description of control mechanism types	<p>Driving types:</p> <ul style="list-style-type: none"> <li>— manual</li> <li>— mechanical</li> <li>— remote pilot</li> <li>— solenoid</li> </ul> <p>Return types:</p> <ul style="list-style-type: none"> <li>— spring</li> <li>— spring and pilot</li> <li>— internal or external pilot</li> </ul>
Solenoid characteristics	<ul style="list-style-type: none"> <li>— Direct-acting</li> <li>— Solenoid pilot                             <ul style="list-style-type: none"> <li>— internal (see minimum shifting pressure, above)</li> <li>— external pilot option – yes/no, with explanation of how external pilot is connected.</li> </ul> </li> <li>— Electrical characteristics                             <ul style="list-style-type: none"> <li>— operating voltage (AC, DC), including ± ratings</li> <li>— inrush and holding current for AC</li> <li>— power consumption</li> <li>— solenoid duty cycles</li> <li>— type of electrical connections (ISO 4400, ISO 6952, ISO 15217, or other types)</li> <li>— arc suppression option</li> <li>— solenoid overrides – yes/no                                     <ul style="list-style-type: none"> <li>— type of override</li> </ul> </li> </ul> </li> <li>— Wiring information and polarity</li> <li>— Degree of protection provided by enclosure for electrical equipment</li> <li>— Lights, including listing of colour</li> </ul>	<p>120 V AC +10%; -15%; 24 V DC ±10 %</p> <p>0,09 A inrush; 0,07 A holding</p> <p>4,8 W; 6,0 VA at 60 Hz</p> <p>100 %</p> <p>DIN, flying leads, etc.</p> <ul style="list-style-type: none"> <li>— locking or non-locking</li> <li>— extended or flush</li> <li>— button, lever, etc.</li> </ul> <p>—</p> <p>IP 65 (in accordance with IEC 60529)</p> <ul style="list-style-type: none"> <li>— LED</li> <li>— neon</li> <li>— other type</li> </ul>
Port type and size	<ul style="list-style-type: none"> <li>— threaded port</li> <li>— push-to-connect (instant)</li> <li>— barb connection</li> <li>— other</li> </ul>	1/4-inch NPT; G 1/4; 1/4 R <sub>c</sub> 5/32 or 4 mm tubing
Built-in flow controls	Describe, if available.	—
Shifting time	Determined in accordance with the test method in ISO 12238	Shifting on-time = 50 ms Shifting off-time = 80 ms
Actuating force or torque and travel	For valves with manual and/or mechanical control	1 N palm button shift force

**5 Identification statement** (reference to this International Standard)

Use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard:

“Pneumatic valve data given in accordance with ISO 17082, *Pneumatic fluid power — Valves — Data to be included in supplier literature.*”

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