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Pneumatic fluid power systems — Directional control valves — Specification of pin assignment for 8 mm and 12 mm diameter electrical round connectors

Transmissions pneumatiques — Distributeurs de commande directionnels — Spécification de l'affectation des broches des connecteurs électriques ronds de diamètres 8 mm et 12 mm

Reference number
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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 20401:2005), which has been technically revised. It also incorporates the Technical Corrigendum ISO 20401:2005/Cor1:2005.

Introduction

In pneumatic fluid power systems, power is transmitted and controlled through a fluid under pressure within an enclosed circuit. Typical components found in such systems are pneumatic controls. These devices are used to regulate the function of a component or system.

Some control components found in pneumatic fluid power systems are electrically actuated. For small control components with electrical control mechanisms, plug connectors of round type with diameters of 8 mm and 12 mm are used. For a unified actuation of the control component in relationship to the electrical power, a standardized pin assignment is required.

Pneumatic fluid power systems — Directional control valves — Specification of pin assignment for 8 mm and 12 mm diameter electrical round connectors

1 Scope

This document specifies the pin assignment for pneumatic directional control valves when used together with 8 mm and 12 mm diameter electrical round connectors according to IEC 60947-5-2. This definition is valid for connectors as shown in IEC 60947-5-2:2004, Figures D.2 and D.4, which are shown in Clause 4.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 — Graphical symbols and circuit diagrams — Part 1: Graphical symbols for conventional use and data-processing applications*

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

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

IEC 60947-5-2:2004, *Low-voltage switchgear and controlgear — Part 5-2: Control circuit devices and switching elements — Proximity switches*

3 Terms and definitions

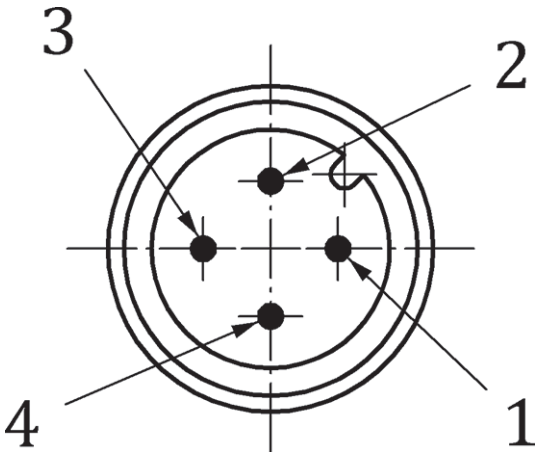
For the purposes of this document, the terms and definitions given in ISO 5598 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

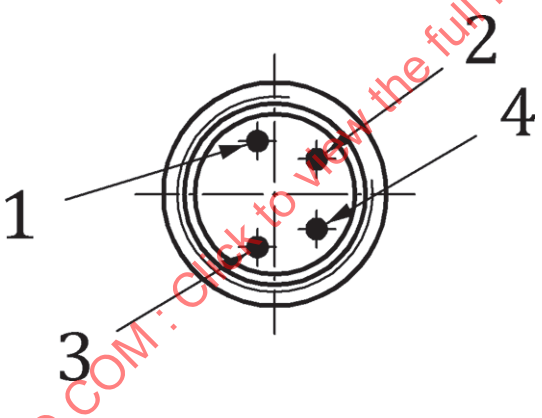
4 Integral connectors for plug-in proximity switches



Key

1	pin 1	3	pin 3
2	pin 2	4	pin 4

Figure 1 — 12-mm diameter, five-pin connector (pin 5, not shown, is unassigned), male face view



Key

1	pin 1	3	pin 3
2	pin 2	4	pin 4

Figure 2 — 8-mm diameter, four-pin connector, male face view

5 Graphical symbols

Graphical symbols used in Figures 3, 4 and 5 are in accordance with ISO 1219-1.

6 Electrical contacts (pin allocation)

6.1 Identification

For identification of ports and control mechanisms of pneumatic directional control valves, ISO 11727 shall be used.

6.2 Pin allocation for valves with a single solenoid

The pin allocation for valves with a single solenoid is shown in Figure 3.

— Pin 1: not used

— Pin 2: not used

— Pin 3: 0 V for solenoid

— Pin 4: UB for solenoid

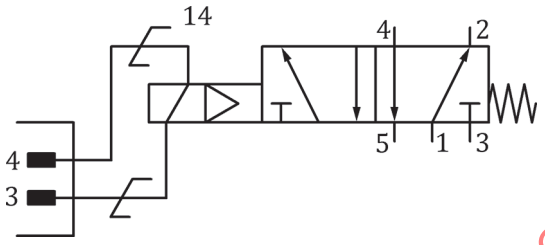


Figure 3 — Pin allocation for valves with a single solenoid

6.3 Pin allocation for valves with double solenoids and one connector

The pin allocation for valves with double solenoids and one connector is shown in Figure 4.

— Pin 1: not used

— Pin 2: UB for solenoid 12

— Pin 3: 0 V for solenoids

— Pin 4: UB for solenoid 14

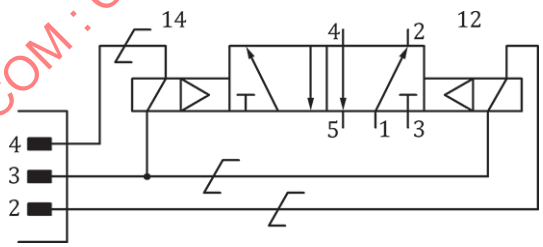


Figure 4 — Pin allocation for valves with double solenoids and one connector

6.4 Pin allocation for valves with double solenoids and two connectors

The pin allocation for valves with double solenoids and two connectors is shown in Figure 5.

For both connectors:

— Pin 1: not used

— Pin 2: not used

— Pin 3: 0 V for solenoid

— Pin 4: UB for solenoid