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English Version

## Industrial valves - Actuators - Part 3: Pneumatic part-turn actuators for industrial valves - Basic requirements

Robinetterie industrielle - Actionneurs - Partie 3:  
Actionneurs pneumatiques à fraction de tour pour  
robinetterie industrielle - Prescriptions de base

Industriearmaturen - Antriebe - Teil 3: Pneumatische  
Schwenkantriebe für Industriearmaturen -  
Grundanforderungen

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## **European foreword**

This document (FprEN 15714-3:2022) has been prepared by Technical Committee CEN/TC 69 “Industrial valves”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Formal Vote.

This document will supersede EN 15714-3:2009.

In comparison with the previous edition, the following technical modifications have been made:

- addition of new terms and definitions;
- improvement of the classification and the designation with on-off and modulating duty classification;
- addition of a new Clause 5 on motive energy;
- enhancement of the basic design requirements;
- modification of the conformity assessment with type test indications and control of production process.

## 1 Scope

This document specifies basic requirements for pneumatic part-turn valve actuators, both double acting and single acting, used for on-off and modulating control duties.

It includes guidelines, recommendations and methods for enclosure and corrosion protection, control and testing.

It does not apply to pneumatic actuators which are integral parts of control valves and to pneumatic actuators designed for permanent immersion in fresh or sea water.

Other requirements, or conditions of use, different from those indicated in this document, are expected to be subject to negotiations, between the purchaser and the manufacturer/supplier, prior to order.

## 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.

EN ISO 5211, *Industrial valves - Part-turn actuator attachments (ISO 5211)*

EN 12570, *Industrial valves — Method for sizing the operating element*

EN 15714-1, *Industrial valves - Actuators - Part 1: Terminology and definitions*

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

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

ISO 8573-1, *Compressed air — Part 1: Contaminants and purity classes*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15714-1 and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **part-turn actuator**

actuator which transmits torque to the valve for less than one revolution; it does not have the capability of withstanding axial thrust

Note 1 to entry: Part-turn actuators are classified by action and duty.

### 3.2

#### **stroke**

single and complete movement from one end of travel to the other

### 3.3

#### **end stop**

mechanical part designed to stop the actuator drive train at an end position

Note 1 to entry: End stop can be fixed or adjustable.

### **3.4 output torque**

minimum guaranteed output torque capability of the actuator, in both directions, at specified supply pressures conditions as provided by the manufacturer/supplier

Note 1 to entry: Where the output torque varies with the stroke, in a linear or nonlinear relationship with pressure, tabulated data and/or torque versus stroke diagram shall be provided at significant pressure values for each direction of movement.

#### **3.4.1 rated torque**

characterizing figure, indicated by the actuator manufacturer/supplier, used to specify the maximum actuator operating torque

Note 1 to entry: The rated torque corresponds to the maximum torque value developed by the actuator when powered with maximum allowable pressure.

#### **3.4.2 nominal torque**

##### **3.4.2.1 double acting version**

minimum guaranteed output torque of the actuator, at any point of the stroke, with nominal supply pressure 0,55 MPa (5,5 bar)

##### **3.4.2.2 single acting version**

guaranteed output torque of the actuator with pneumatic nominal supply 0,55 MPa (5,5 bar) at the beginning of the stroke in the direction to compress the spring

#### **3.4.3 start torque**

actuator output torque at the beginning of the stroke in the direction of movement