



SLOVENSKI STANDARD SIST EN 264:2000

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Safety shut-off devices for combustion plants using liquid fuels - Safety requirements and testing

Sicherheitsabsperreinrichtungen für Feuerungsanlagen mit flüssigen Brennstoffen -
Sicherheitstechnische Anforderungen und Prüfung

Dispositifs d'arrêt de sécurité pour installations de combustion fonctionnant aux
combustibles liquides - Exigences de sécurité, essais

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Ta slovenski standard je istoveten z: EN 264:1991

ICS:

27.060.10 Ō[`i`a`ã`ã`ã`ã`[`^`ã`ã`ã`ã`[Liquid and solid fuel burners
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EUROPEAN STANDARD

EN 264

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Descriptors: Plants using liquid fuels, fluid flow, stopping devices, safety devices, definitions, safety requirements, test, marking

English version

Safety shut-off devices for combustion plants
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Dispositifs d'arrêt de sécurité pour
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Sicherheitsabsperreinrichtungen für
Feuerungsanlagen mit flüssigen
Brennstoffen - Sicherheitstechnische
Anforderungen und Prüfung

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Ref. No. EN 264:1991 E

Foreword

This European Standard was drawn up by the Technical Committee CEN/TC 47
"Atomizing oil burners and their components - Function - Safety - Testing"

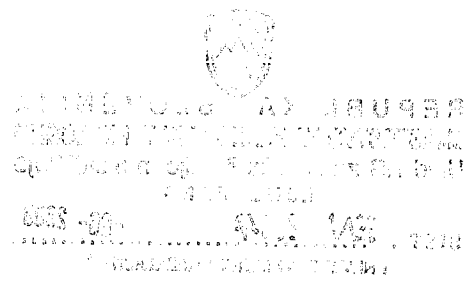
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1 Object and Field of Application

1.1 Object

The flows of liquid fuels shall be capable of being interrupted by means of safety shut-off devices, which, for example, are designed as automatic valves or fast closing devices. Their reliability shall be proven by type tests according to this standard. Other test methods may be allowed where necessary.

1.2 Field of application

This European standard comprises safety requirements and test methods for safety shut-off devices in combustion plants, which on opening release, with or without delay, the flow of the fuels mentioned below and shut off without delay on closing.

This standard applies to the use of fuel oils. For other liquid fuels the test methods may be agreed between the manufacturer and the test institute.

This standard also applies to safety shut-off devices forming part of devices having other functions, i.e. oil pumps. In this case the test methods apply to those parts or components of the device forming the safety shut-off device, i.e. those parts which are necessary for the closing function.

1.3 References

CENELEC Harmonization Document 365 S2 IEC Publication 529 (1976) Classification of degrees of protection by enclosures incorporating Amendment No. 1 (1978)

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2 Definitions <https://standards.iteh.ai/catalog/standards/sist/b26da323-040b-42ad-a9b3-75ac5b67eca4/sist-en-264-2000>

2.1 Safety shut-off devices

A safety shut-off device is a device for shutting off the fuel flow in order to avoid dangerous operating conditions in a plant.

2.1.1 They are defined according to their method of operation:

- a) A safety shut-off device which is opened by hand, held open by auxiliary energy, and closes on interruption or failure of the auxiliary energy,
- b) a safety shut-off device according to a), which may, however, also be closed by hand,
- c) a safety shut-off device which is opened by auxiliary energy and closes on interruption or failure of this auxiliary energy (automatic device).

2.1.1 According to their installation, they may be designated as follows:

- a) for indoor use,
- b) for outdoor use.

2.2 Fast closing device

A fast closing device is a safety shut-off device the closing process of which has a predetermined time.

2.3 Response times

2.3.1 Opening time

The opening time is the time from the beginning until the end of the change in position of the closure member from the closed to the open position (see figure 1).

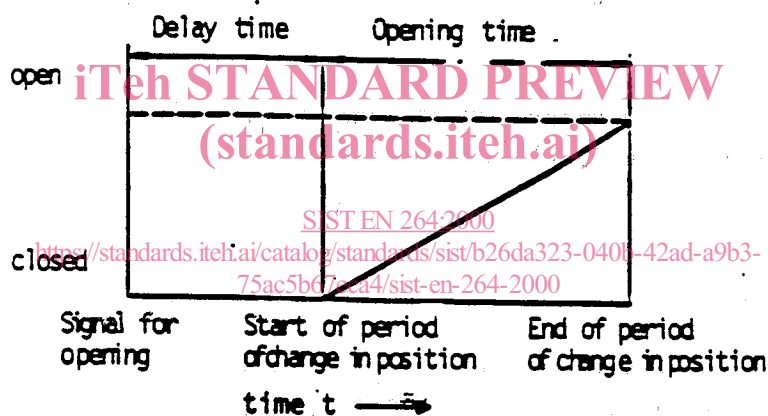
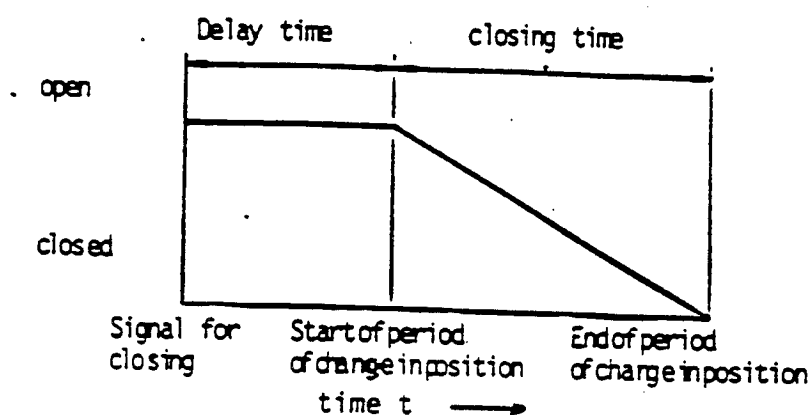


Figure 1. Response time during opening

2.3.2 Closing time

The closing time is the time from the beginning until the end of the change in position of the closure member from the open to the closed position (see figure 2).



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Figure 2. Response time during closing

2.3.3 Delay time

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The delay time on opening is the interval between the signal to open and the beginning of the change of position of the closure member (when the required tightness according to sub-clause 3.2 is no longer maintained), or in the case of closing the interval between the signal to close and the start of the change in position of the closure member (see figure 1 and figure 2).

2.4 Opening force

The opening force is the force which effects the opening of the safety shut-off device.

2.5 Closing force

The closing force is the force which effects the closing of the closure member in the case of failure or interruption of the externally applied actuating energy, (e.g. spring force).

2.6 Force of retention

The force of retention is the resultant of the forces which oppose the closing force.

2.7 Opening and closing characteristics

The curves represent the movement against time on opening and closing.

2.8 Actuator

The actuator effects the movement of the closure member (e.g. valve disc).

2.9 Differential pressure

The differential pressure is the permissible difference between the upstream and downstream pressures in the closed position.

2.10 Operating pressure

The operating pressure is the highest permissible pressure which may be reached in the safety shut-off device in the open position.

2.11 Auxiliary medium and auxiliary medium pressure

The auxiliary medium is the medium used for actuating the moving parts of the system (pneumatic or hydraulic). The auxiliary medium pressure is the pressure exerted by the auxiliary medium during actuating the moving parts.

3 Safety requirements

3.1 Operation

3.1.1 Safety shut-off devices shall open and close without delay, or with delayed action in accordance with the response time(s) declared by the manufacturer.

3.1.2 Safety shut-off devices shall always close tightly in accordance with their mode of operation (see 2.1).

3.1.3 For fast closing devices the sum of the delay and closing times shall not exceed 1 s.

3.2 Leak-tightness

3.2.1 External leak-tightness

Safety shut-off devices shall not leak externally. This requirement shall be checked in accordance with 5.4

3.2.2 Internal leak-tightness

Safety shut-off devices shall close tightly at all differential pressures (see 2.9). This requirement shall be checked in accordance with 5.4.

3.3 Materials, design

3.3.1 The quality of the materials, the design and the dimensions of the components used should be such that the safety shut-off devices, when correctly installed, will operate safely and for a reasonable period of time (service life) under normal mechanical, chemical and thermal operating conditions, provided that the manufacturer's normal conditions for adjustment, operation and maintenance have been observed.

3.3.2 The components of safety shut-off devices for fuel oil shall be designed for pressures of 1.5 times the system design pressure, during the open position of the safety shut-off device, and where the operating pressure has been adjusted to the maximum permissible value.

The mechanical strength for devices above PN 16 or above DN 80 shall be proven. (PN = nominal pressure, DN = nominal diameter)

3.3.3 Manually adjustable packing glands are not permitted. Non-metallic sealing materials in contact with the fuel shall be heat resistant within the temperature range indicated by the manufacturer and at least to 60° C.

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3.3.4 The connections shall be designed in such a way that the safety shut-off devices can be installed into the fuel lines by welding, brazing, flanges using suitable gaskets, or by threads.

Threaded connections shall be designed in such a way that a tight joint can be achieved without the use of hemp or sealing tape.

3.4 Components generating or transmitting the closing force

With the exception of the spring, components generating or transmitting the closing force - these may also be components of the actuator - shall be designed such that the breaking load is 5 times the maximum possible operating load. Deviations from this requirement are acceptable if the function is not rendered unsafe upon fracture of the component and if tightness is maintained.