

Technical Door Description

EFA-SRT® CR TYP 254

Issue 13

High speed roll up door for clean rooms



1. Technical Design Data

Dimensions

Width	500 mm to 2.500 mm
Height	1.100 mm to 3.000 mm

Door speed

Opening speed	approx. 1.0 m/s
Closing speed	approx. 0.5 m/s

Area of application

Application	Clean rooms
Application temperatures:	+5° to +30° C

Performance characteristics

air pressure differences	SRT-CR	up to 30 Pa up to 50 Pa with max. 1400 mm x max. 2000 mm (BxH)
air loss	SRT-CR	less than 12 m ³ /m ² h with positive pressure on the door inside (class 2) less than 20 m ³ /m ² h with positive pressure on the door outside (class 1)
Clean room class	SRT-CR	TÜV – certified ISO class 5 accordance ISO 14644-1 and VDI 2083 sheet 9.1 (certificate number 2009 / 176-27/11)
Airborne sound insulation accordance EN ISO 717-1 [Ⓢ]	SRT-CR	R _w = 15 dB [Ⓢ]

[Ⓢ] with 2mm Transilon curtain

[Ⓢ] Performance characteristics were not approved!

Door design

The door construction is based on a self-supporting design and modular construction. The components of the assembly are bolted together. All avoidable edges were dispensed with. Edges exist only at the junction of closing plate and hanging, frame member and frame member cover.

Material frame members
Coverings option
(for H<2.500mm required as finger protection)

Stainless steel V2A (1.4301 III C) corrosion resistant, polished
Complete cover 15° bevel
Complete cover 45° bevel
Complete cover up to ceiling, possible between H+460mm and H+1100mm
Drive with gear
Spring for weight balance
Bearing with bearing housing (bearing housing made of aluminium)
Belt for spring
Plastic roller with bearing
Weights in the closing plate
Operating equipment integrating into frame

Components **not** supplied in V2A:

Door leaf design

The door leaf consists of a flexible hanging which is wound up on a winding shaft. The door leaf guides and sealing is affected by wear-free stainless steel sections.

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Door leaf – versions

Material **Transilon** (PVC-coated polyester)

TO5 standard

TS5 option

Color

Window option

2mm Transilon – double raw

(Quality E8/2 V1/V1 NA) TRANSVERSE STABILITY. Approved in accordance with the FDA Articles 175.300, 178.2010 and 178.3740 for the transport of dry Foods.

papyrus white similar RAL 9018

As optional feature, made of soft PVC, not approved in accordance with FDA Regulations. By the high gate tightness this window is subject to higher wear. It can lead to scratch.

Material **Transilon** (PVC-coated polyester)

TO1 / TS1 option

Color

Window option

2 mm Transilon – double sides raw

(Quality E8/2 V1/V1 NA) TRANSVERSE STABILITY Approved in accordance with the FDA Articles 175.300, 178.2010 and 178.3740 for the transport of dry foods.

blue, similar RAL 5002, antistatic, silicon free
orange, similar RAL 2008, not antistatic, silicon free
red, similar RAL 3002, not antistatic, silicon free
yellow, similar RAL 1021, not antistatic, silicon free

As optional feature, made of soft PVC, not approved in accordance with FDA Regulations. By the high gate tightness this window is subject to higher wear. It can lead to scratch.

Material **Transilon:**

(urethane-impregnated polyester)

TO4 option

Color

1.4 mm Transilon without window

(Quality E12/2 U0/U0) TRANSVERSE STABILITY, admitted according to FDA section on the transport of dry food

beige
antistatic, silicone free

Material Transilon: (urethane/PVC-impregnated polyester)

TO7/TS7 option

Color

Window option

2,2 mm Transilon – one side slick

(Quality E8/2 UO/V5 MT) TRANSVERSE STABILITY. Approved in accordance with the FDA Articles 175.300, 178.2010 and 178.3740 for the transport of dry Foods.

up to approx.10 dBA lower noise pollution measured sound level compared to TO5/TS5¹

papyrus white similar RAL 9018
antistatic

As optional feature, made of soft PVC, not approved in accordance with FDA Regulations. By the high gate tightness this window is subject to higher wear. It can lead to scratch.

Winding Shaft

Steel design

Surface V2A unpolished

End elements

Closing edge

two shell design stainless steel V2A (1.4301 IIIC) corrosion resistant, polished, laterally covered

Weight balance

Counter acting system: Up to three tension springs are installed in the side frame and connected to the drive shaft by heavy load belts. The spring is taut in the position "Door is closed" and slack in the position "Door is open" By means of an order-related spring-tension calculation a high service life is attained.

Material

Function

Theoretical service life

Spring steel wire class C polished,

Crash-down safety

approx. 150.000 load changes

¹ Ascertained measured value for door B*H = 2500 x 3000 mm

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Emergency operation

On power failure

Mechanical release as standard:

By activation of the release knob, the motor brake is released.

The tension spring opens the door partially. The

Controller is in an STOP state during activation.

Electrical release as option:

By pressing a button the holding brake is electrically released. The energy stems from the uninterruptible power supply (UPS) This can be guaranteed with fully charged batteries for at maximum 1 hour after a power failure. The tension spring opens the door partially.

Door safety

In pursuance with EN 12453 the minimum protection level for the safeguard of the closing edge is achieved through combination of contact bar + light barrier (C-appointment + D- appointment).

Closing-edge safety

Contact bar by radio band – The 2 AAA batteries of the transmitter must be annually replaced.

Light Barrier option

Light barrier (IP67) installed in the door frame, max. 2 units

The closing edge protection fulfils the requirements of the product standards for doors DIN EN 13241-1.

In addition, it is necessary to secure the approach area by agreement between operator and manufacturer. This results from the Hazard evaluation analysis which is generated by the operator.

Control

Switchgear cabinet

The EFA-CON® control is integrated into the frame member, motor side (IP54).

Functional elements achievable from outside.

- Window for display of status and fault messages
- Membrane keyboard for the parameterisation of the door system
- push button or button for the emergency bleeding of the door in the case of a power failure

The main switch is positioned on the control cover.

Supply voltage: 230VAC +/- 10%, 50-60 Hz, power supply to be protected with 16A, K characteristics, at site, if necessary with FI – circuit breaker (RCD) 300mA according to DIN VDE 0100-530 AC/DC sensitive

Type of drive

Standard design

end-limit switch

Shaft mounted gear braking motor 0.37 kW 50-85 Hz 400V/230V IP55

Sensor technology in the motor inductive sensors for positioning.

2. Assembly

Attachment of the roll-up door requires a stable foundation e.g. concrete or steel structure. Light masonry, e.g. hollow block masonry or expanded concrete insulating slabs should be supported by auxiliary structural elements. Installation dimensions see AZ 254... .

Recommended value for attachment: Maximum tensile force approx. 1.5 KN per frame.

3. Applied Standards

The following directives and standards were applied when designing, producing and assembling the door.

Safety Standards

EN 13241-1:2000 Door product standard

Complementary Standards

VDI 2083 Clean room techniques

ISO 14644 Clean rooms and relevant clean room areas

GMP Good Manufacturing Praxis

4. Special cases (option UPS)

Operation during power failure

During a power failure, the control board and frequency converter are no longer in operation.

The UPS installed on the backside of the frame member is constantly charged by the on-site power supply network.

After each power failure, the UPS starts the charging process automatically so that the system is fully available at any time. A complete charging cycle of the battery is approx. 4 hours.

If the on-site power supply fails, the control and the frequency converter are no longer supplied with power, the door stops at the current position. The UPS does not start automatically!

The UPS can now supply the electromechanical motor brake on request with power via the "emergency opening" push button (release brake) so that the door opens up to a height certain.

It is not possible to close the door by UPS!

The capacity of the UPS is such that with fully charged batteries, the described emergency opening is available for at maximum 60 minutes after the power failure.

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