

SASH DISTANCE SENSOR  
TYPE DS-TRD

## DS-TRD

### FOR EASYLAB FUME CUPBOARD CONTROLLERS

Sash distance sensor for the variable, demand-based control of extract air flows in fume cupboards

- Sash distance measurement
- For fume cupboards with vertical sashes only; also for walk-in fume cupboards
- Ideal for rooms with high airflow velocities or levels of turbulence
- Multiple possibilities to couple the sensor with the sash movement
- Measuring range 0 – 1750 mm or 350 – 2100 mm

## TECHNICAL INFORMATION

Function, Technical data, Specification text, Order code, Related products



### Functional description

The sash distance is recorded with a draw wire that is linked to the sash movement. The output signal is proportional to the sash distance. The sensor can be used only with vertical sashes.

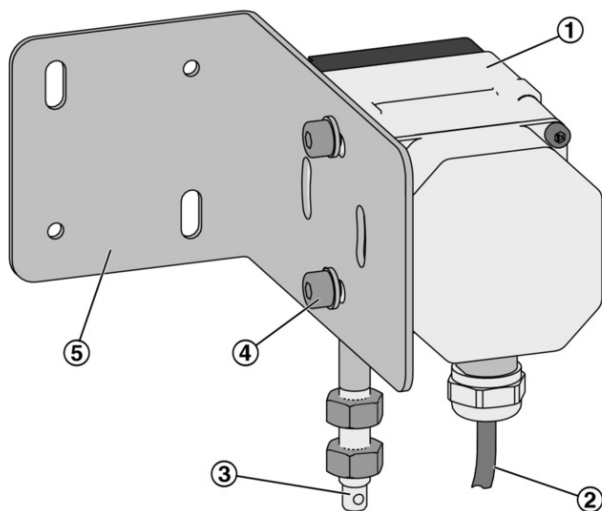
DS-TRD for fume cupboard control – linear control strategy

- EASYLAB controller TCU3: Equipment function FH-DS
- Variable volume flow control based on the measured sash distance
- Volume flow rate is linear to the sash position: OPEN corresponds to  $V_{\max}$ , CLOSED corresponds to  $V_{\min}$
- Sash opening can be monitored according to EN 14175, without additional switch contact

DS-TRD for fume cupboard control – safety-optimised control strategy

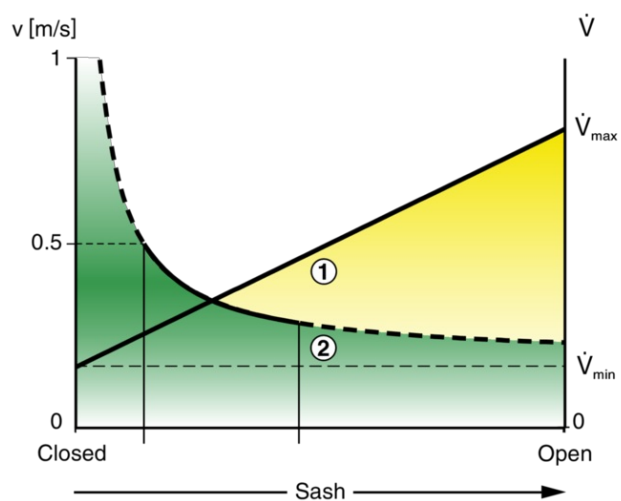
- EASYLAB controller TCU3: Equipment function FH-DV
- Safety-optimised volume flow control based on the measured sash distance
- The volume flow rate is linear to the sash distance; the aim is to maintain a constant safe face velocity (0.5 m/s) even if the sash is fairly wide open
- Sash opening can be monitored according to EN 14175, without additional switch contact

## DS-TRD sash distance sensor



- ① Sensor casing
- ② Connecting cable
- ③ Measuring wire
- ④ Screws / washers
- ⑤ Fixing bracket

## Control diagram for FH-DS

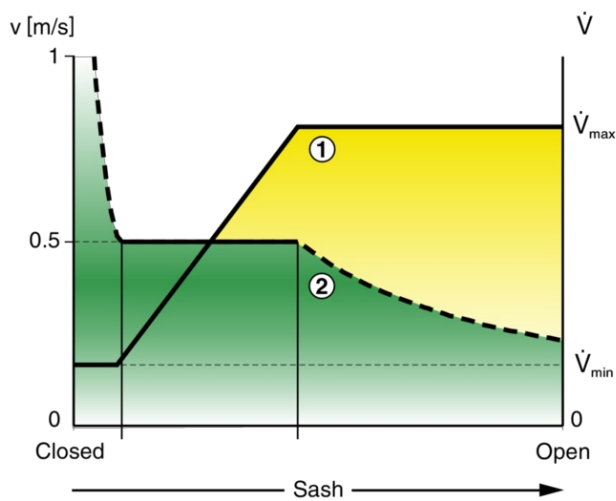


- ① Volume flow rate
  - ② Face velocity
- Linear control strategy**

- Variable volume flow control based on the measured sash distance

- Volume flow rate is linear to the sash position: OPEN corresponds to  $\dot{V}_{\max}$ , CLOSED corresponds to  $\dot{V}_{\min}$
- Particularly suitable for fume cupboards in rooms with increased airflow (turbulence)
- Sash opening can be monitored according to EN 14175, without additional switch contact

#### Control diagram for FH-DV



- ① Volume flow rate
- ② Face velocity

#### Safety-optimised control strategy

- Safety-optimised volume flow control based on the measured sash distance
- The volume flow rate is linear to the sash position; the aim is to maintain a constant safe face velocity (0.5 m/s) even if the sash is fairly wide open
- Particularly suitable for fume cupboards in rooms with increased airflow (turbulence)
- Sash opening can be monitored according to EN 14175, without additional switch contact

<b>Supply voltage</b>	12 V DC from the controller
<b>Measuring range</b>	0 – 1750 mm or 350 – 2100 mm
<b>Measurement accuracy</b>	± 0.25 % of the reading
<b>Actual value signal output</b>	0 – 10 V DC, 0.5 mA max.
<b>Operating temperature</b>	–20 to 40 °C
<b>IEC protection class</b>	III (protective extra-low voltage)
<b>Protection level</b>	IP 40
<b>EC conformity</b>	EMC according to 2004/108/EC

Electronic sash distance sensor for the EASYLAB system, used to capture the sash distance of fume cupboards.

Suitable for sashes with 1750 mm maximum opening.

The sash distance is measured using a draw wire. A 0 – 10 V DC voltage signal that is proportional to the sash distance is emitted. If the sensor is connected to a fume cupboard controller, the volume flow is controlled based on demand.

Simple installation in several installation positions on the fume cupboard; simple linking to the sash movement.

#### Special characteristics

- Suitable for sashes with 1750 mm maximum opening
- Suitable for EASYLAB controller TCU3
- Can be used with different control strategies (FH-DS and FH-DV)
- Ideal for rooms with high airflow velocities or levels of turbulence
- Replaces a separate contact for sash distance monitoring according to EN 14175

#### Materials and surfaces

- Plastic casing, black
- Measuring wire made of stainless steel, with a polyamide jacket
- Mounting bracket made of galvanised sheet steel

#### Technical data

- Supply voltage 12 V DC from the controller
- Measuring range: 0 – 1750 mm or 350 – 2100 mm
- Measurement accuracy: ± 0.25 % of the reading
- Output: Actual value signal: 0 – 10 V
- Protection level: IP 40

- Any attachments are to be defined with the order code of the VAV terminal unit.
- Retrofit possible

**ELAB / FH – DS / ...**

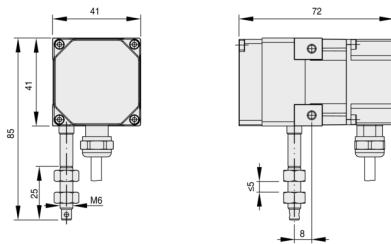
**ELAB / FH – DV / ...**

# DS – TRD

## Dimensions



### DS-TRD



## Installation details

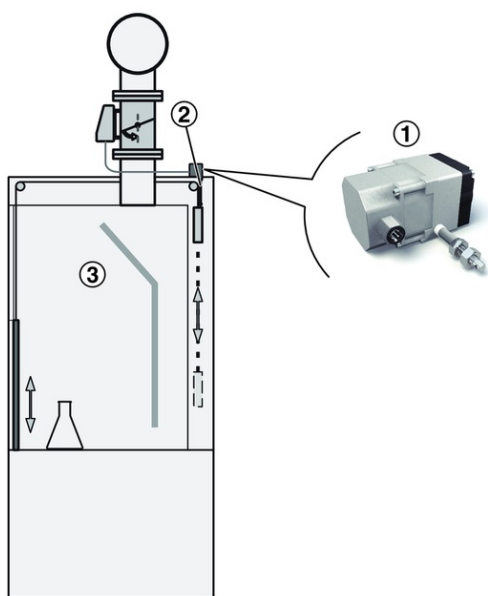


### Installation and commissioning

- Fix the sash distance sensor to the fume cupboard
- Link the measuring wire to the sash movement, e.g. by fixing it to the balance weight of the sash
- The measuring wire can be drawn vertically or horizontally.
- Measuring range 0 – 1750 mm or 350 – 2100 mm
- The controller automatically recognises the sash distance sensor
- Project-specific adjustments can be made, and the maximum operational sash opening can be entered using the EasyConnect

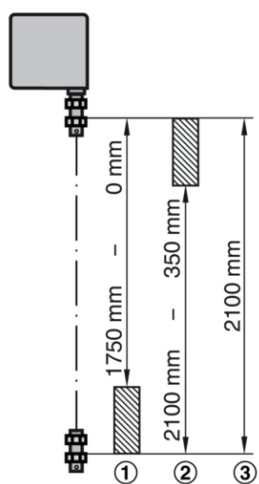
configuration software

#### Measurement location of the sash distance sensor (FH-DS, FH-DV)



- ① Sash distance sensor DS-TRD
- ② Linked to the sash movement
- ③ Fume cupboard

#### Measuring range of DS-TRD



- ① Measuring range at the beginning of the draw wire
- ② Measuring range at the end of the draw wire
- ③ Maximum extension

