TROX® TECHNIK
The art of handling air

VS-TRD

FOR FUME CUPBOARD CONTROLLERS EASYLAB AND TCU-LON-II

Face velocity transducer for the variable, demand-based control of extract air flows in fume cupboards

- Non-contact measurement of the face velocity, hence not subject to wear
- For fume cupboards with vertical and horizontal sashes
- Automatic detection of thermal loads
- Simple installation into a drilled hole in the dome of the fume cupboard, also for multiple fume cupboards in a row
- Plug-in cable
- Measuring range 0 – 1 m/s

Additional application of the transducer

- For monitoring the face velocity with monitoring devices TFM-2/TPM

Application

Application

- Face velocity transducer Type VS-TRD for the LABCONTROL system
- For the demand-based control of variable volume flows in fume cupboards
- Connection to an EASYLAB controller TCU3, to a controller TCU-LON-II, or to monitoring systems TFM-2-TPM
- Consideration of all sashes of a fume cupboard
- For fume cupboards with vertical and horizontal sashes, also for fume cupboards with sashes on two sides
- Increased safety for people working in labs
- For use in laboratories and in clean rooms in the pharmaceutical and semiconductor industries

Special characteristics

- Demand-based fume cupboard control depending on the sash distance
- Recording of the face velocity at vertical and horizontal sashes as well as for both sashes on a fume cupboard
- Non-contact measurement of the face velocity, hence not subject to wear
- Constant face velocity (typically 0.5 m/s) within the set volume flow rate range due to cascade control of face velocity and volume flow
- Detection and safe dissipation of thermal loads due to automatic volume flow increase

Description

Parts and characteristics

- Easy-to-install casing with sensor tube

- Sensitive electronics with integral temperature compensation
- Non-contact measurement of the face velocity using calorimetric principle; not subject to wear

Useful additions

- CAB-TRD: 5 m plug-in extension cable for face velocity transducer VS-TRD
- EasyConnect: Configuration software for the commissioning and diagnosis of EASYLAB components
- MConnect: Configuration software for the commissioning and diagnosis of the Type TFM/TPM monitoring devices and TCU-LON-II

Construction features

- Simple mounting to fume cupboards
- Conical sensor tube to be inserted into a drilled hole 21 – 22.5 mm in the dome of the fume cupboard
- Plug-in connecting cable 3 m

Materials and surfaces

- Plastic casing, black

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Functional description

The face velocity is measured using a heated thermal resistor and based on the resistance change principle; it is a non-contact measurement and hence not subject to wear. The face velocity sensor is placed in a bypass opening where it measures the airflow. This airflow is equal to the face velocity of all sashes of the fume cupboard. The face velocity transducer can hence be used for both vertical and horizontal sashes.

VS-TRD for fume cupboard control

- EASYLAB controller TCU3: Equipment function FH-VS
- Controller TCU-LON-II: Equipment function FH

Since cascade control applies, the face velocity is kept constant based on the volume flow rate, which lies between the set minimum and maximum volume flow rates.

Opening the sash leads to a decrease of the face velocity. The fume cupboard controller raises the volume flow. Sufficient air transfer from the room to the fume cupboard is ensured (and work safety is maintained).

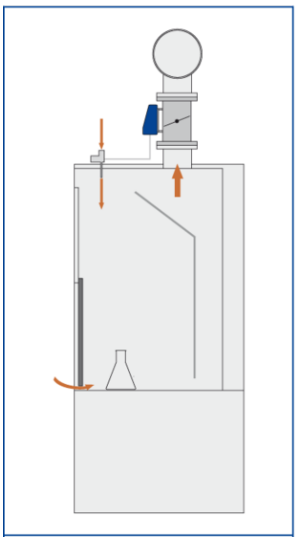
Closing the fume cupboard leads to a decrease of the volume flow such that the face velocity is kept constant. The minimum volume flow ensures sufficient ventilation of the fume cupboard.

VS-TRD for monitoring

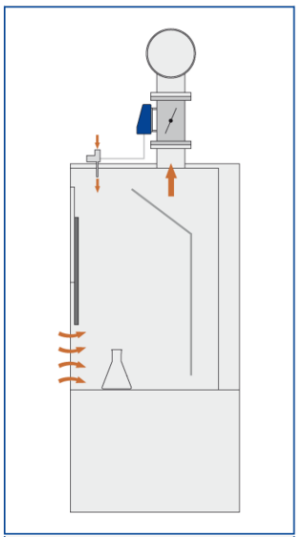
- Monitoring system TFM-2

The face velocity is monitored. If the face velocity is above or below a certain limit, an alarm is emitted on the control panel. Limits and the type of alarm can be configured.

Sash closed. High face velocity



Sash open. Low face velocity



Supply voltage	24 V AC/DC from the controller
Measuring range	0 – 1 m/s
Actual value signal output	2 – 10 V DC
Operating temperature	15 – 40 °C
IEC protection class	III (protective extra-low voltage)
Protection level	IP 20
EC conformity	EMC according to 2004/108/EG

Electronic transducer for the LABCONTROL system, used to measure the face velocity on fume cupboards.

Suitable for fume cupboards with vertical and horizontal sashes.

Non-contact measurement, not subject to wear.

A 0 – 10 V DC voltage signal that is proportional to the face velocity is emitted. If the sensor is connected to a fume cupboard controller, the volume flow is controlled based on demand. If the transducer is connected to a monitoring system, an alarm is emitted in case the face velocity is higher or lower than the set maximum and minimum values.

Simple mounting on the fume cupboard dome.

Special characteristics

- Demand-based fume cupboard control depending on the sash distance
- Recording of the face velocity at vertical and horizontal sashes as well as for both sashes on a fume cupboard
- Non-contact measurement of the face velocity, hence not subject to wear
- Constant face velocity (typically 0.5 m/s) within the set volume flow rate range due to cascade control of face velocity and volume flow
- Detection and safe dissipation of thermal loads due to automatic volume flow increase

Materials and surfaces

- Plastic casing, black

Technical data

- Supply voltage> 24 V DC from the controller
- Measuring range 0 – 1 m/s
- Output: Actual value signal: 2 – 10 V
- Protection level: IP 20

Order code detail for control components ELAB (EASYLAB controller), TCU-LON-II controller TMA, TMB with equipment function fume cupboard control FH

ELAB / FH – VS / ...
TM* / FH / ...

Transducer VS-TRD for retrofit or as replacement part

VS – TRD