

# Technical ventilation of safety storage cabinets

- 1.** The legislative authority has facilitated the operation of safety storage cabinets without technical ventilation on the basis of **TRGS 510**, Annex 3, 2.2. If technical ventilation is not carried out in the long-run, contingency measures must be implemented, which ensure comparable explosion protection.
- 2.** Please bear in mind that other regulations in addition to **TRGS 510** (Annexe 3) can also make technical ventilation necessary. For example, if corrosive or poisonous substances are stored or there is unpleasant odour for the employees due to the substances stored, a technical ventilation of the safety storage cabinet must be planned as a rule; for this, please refer to the Ordinance on Hazardous Substances or Workplaces Ordinance.
- 3.** With the **recirculating air filter system UFA.20.30**, it is also possible to ensure a technical ventilation of safety storage cabinets without an expensive exhaust fan and by avoiding explosion protection measures in a cost-effective manner!

Please adhere to the country-specific terms of use binding for you. In case of any doubt, the possible applications must be agreed with the relevant authority.

## What are the advantages/disadvantages without technical ventilation of the safety storage cabinet?

- + no cost-intensive exhaust air ducts are necessary
- explosion zones must be permanently ensured around the safety storage cabinet
- possible health risk to the employees

No.	Example	Features/remarks/prerequisites/instructions	Protective measures in accordance with TRBS 2152 Part 2	Defining the zones for avoiding ignition sources in accordance with TRBS 2152 Part 3	Protective measures in accordance with TRBS 2152 Part 4
2	<b>Flammable liquids</b> <b>Storing in the safety storage cabinet</b>	<b>Handling flammable liquids, their vapours and fog</b>  Also refer to "Technical regulations for hazardous materials TRGS 510 Storage of hazardous materials in portable containers", Annex 3 "Storage of flammable liquids in safety storage cabinets in work spaces"			
2.2.8		<p><b>a) the LEL (lower explosion limit) is definitely undershot as the flash point of the flammable liquid is sufficiently above the storage temperature (refer to TRBS 2152 Part 1 point 3.2 (3))</b></p> <p>Refer to point 2.3.2</p> <p>no zone</p> <p>None</p>			
		<p><b>b) the flash point is not sufficiently above the storage temperature (refer to TRBS 2152 Part 1, point 3.2 (3))</b></p> <p>b1) <b>Technical ventilation</b>, container closed tightly, regular check for leak-tightness, opening of the container ruled out (no filling or decanting, no sampling), placing containers without external wetting by flammable liquids</p> <p>Refer to point 2.4.4.3</p> <p>no zone</p> <p>None</p>			
		<p>b2) if b1) is not fulfilled in all the points, containers are however tightly closed and <b>technical ventilation is available</b></p> <p>Refer to point 2.4.4.3</p> <p>Zone 2 inside the safety storage cabinet</p> <p>None</p>			
		<p>b3) Natural ventilation, container closed tightly, regular check for leak-tightness, opening of the container ruled out (no filling or decanting, no sampling), placing containers without external wetting by flammable liquids</p> <p>Refer to point 2.4.4.2</p> <p>Zone 2 inside the safety storage cabinet</p> <p>None</p>			
		<p>b4) if b3) is not fulfilled in all the points, containers are however tightly closed and natural ventilation is available</p> <p>Refer to point 2.4.4.2</p> <p>Zone 1 inside the safety storage cabinet, Zone 2 in the vicinity R=2.5 m around the safety storage cabinet at a height of 0.5 m above the ground</p> <p>None</p>			

### What are the advantages/disadvantages in case of technical ventilation (min. 10x/h) and exhaust duct outwards?

- + no health risk to the employees
- + all the hazardous materials (also acid and base vapours) will be eliminated
- cost-intensive exhaust air ducts with possible wall/ceiling breaks will be necessary
- installation of the safety storage cabinet is no longer flexible
- energy consumption due to heat losses in the exhaust air

### What are the advantages/disadvantages in case of technical ventilation (min. 10x/h) with a recirculating air filter system and without an exhaust duct outwards?

- + no health risk to the employees/workers
- + no cost-intensive exhaust air ducts are necessary
- + flexible installation of the safety storage cabinet
- + no energy losses due to exhaust duct outwards
- + permanent electronic monitoring of the exhaust air volume
- + tested and certified system
- only solvent vapours (hydrocarbons) can be filtered

**In case of any further questions on ventilation of safety storage cabinets, please contact us. Our employees will be happy to help you.**

Please adhere to the country-specific regulations and provisions binding for you.





## You can avoid this in the future!

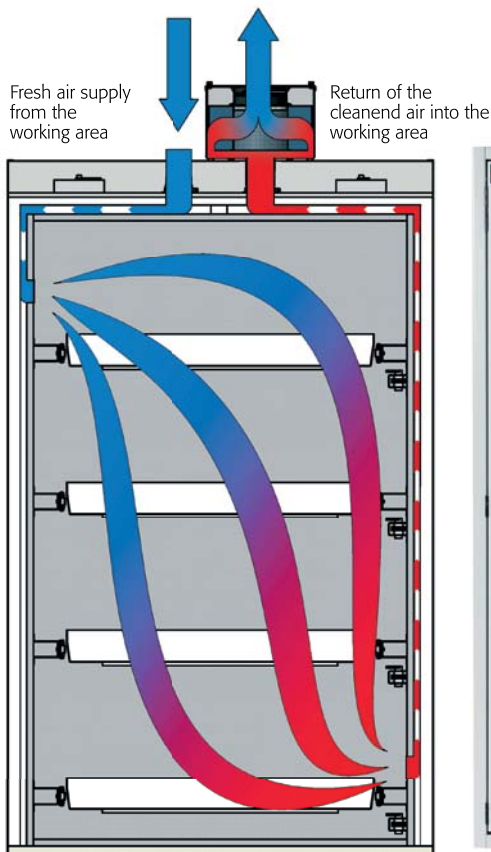


## Our solution: the asecos recirculating air filter system

- 1 Extraction air monitoring**
  - permanent, electronic (VDE-approved) monitoring of the extraction air quantity
  - integrated pressure drop sensor
  - optical and acoustical alarm including potential-free alarm contact
- 2 Filter monitoring**
  - continuous monitoring of the filter saturation
  - two-stage alarm: optical and potential-free switch contact
- 3 Installation, easy and safe in just two steps:**
  - position the recirculating air filter unit on top of the cabinet
  - plug in the power cord
  - optionally use the potential-free contact for alarm activation



## Operating principle



### Your advantages

- avoid complex wall and ceiling openings and expensive exhaust air ducts
- high flexibility in choosing the installation location
- active personal protection through safe capture of harmful vapours with retention in the filter system
- very low noise, only approx. 39 dB (A)
- principle avoidance of hazardous area zones inside and around the safety storage cabinet according to BGR 104 (Ex-RL)



### Recirculating air filter system

for tall cabinets, for assembling on the safety storage cabinet

Order No. 25099

The recirculating air filter system from asecos—successfully tested by the certified testing institute:



### Recirculating air filter system – avoid complex wall breakthroughs and expensive exhaust air ducts

- high flexibility in choosing the installation location
- active personal protection through safe capture of harmful vapours with retention in the filter system
- very low noise, only approx. 39 dB (A)
- ATEX compliant:  $\text{CE II 3/-G Ex ic nA IIB T4 Gc}$
- housing made of sheet-steel powder-coated
- with multistage filter system and power cord
- incl. monitoring electronics for exhaust air and filter monitoring, EMC-tested by VDE
- optical and acoustic alarm including potential-free alarm contact

**The plug-in recirculating air filter system, type UFA.20.30 is capable of retaining solvent vapours (hydrocarbons) permanently up to a filter saturation of more than 99.999%, under normal operating conditions as well as for a simulated accident in the safety storage cabinet.**

A special version of the recirculating air filter system is also available to meet the pressure and volumetric flow conditions inside XL-drum cabinets.

Please adhere to the country-specific terms of use binding for you. In case of any doubt, the possible applications must be agreed with the relevant authority.

### Recirculating air filter system in accordance with

RL 2006/95/EC (low-voltage directive)

marking  $\text{CE II 3/-G Ex ic nA IIB T4 Gc}$

and **EMC Directive RL 2004/108/EC**

and **RL 94/9/EC** (ATEX Directive)



Technical data	All models	
External dimensions W x D x H	mm	305 x 555 x 210
Nominal voltage	V	230
Frequency	Hz	50/60
Max. current consumption	A	0.07
Noise level	dB	39.0
Speed	rpm	2200
Weight	kg	17
Volume flow	m <sup>3</sup> /h	25
<b>Potential-free alarm contact</b>		
Max. continuous current	A	10
Max. nominal voltage AC	V	230
Max. nominal voltage DC	V	30



#### Model

recirculating air filter system with exhaust air monitoring  
recirculating air filter system with exhaust air monitoring for drum cabinets

#### Order No.

25099   
27887



#### Accessories

filter, new (activated carbon)

#### Order No.

24212





# Technical ventilation of safety storage cabinets

## 1.

The legislative authority has facilitated the operation of safety storage cabinets without technical ventilation on the basis of **TRGS 510**, Annexe 3, 2.2. If technical ventilation is not carried out in the long-run, contingency measures must be implemented, which ensure comparable explosion protection.

## 2.

Please bear in mind that other regulations in addition to **TRGS 510** (Annexe 3) can also make technical ventilation necessary. For example, if corrosive or poisonous substances are stored or there is unpleasant odour for the employees due to the substances stored, a technical ventilation of the safety storage cabinet must be planned as a rule; for this, please refer to the Ordinance on Hazardous Substances or Workplaces Ordinance.

## 3.

With the **recirculating air filter system UFA.20.30**, it is also possible to ensure a technical ventilation of safety storage cabinets without an expensive exhaust fan and by avoiding explosion protection measures in a cost-effective manner!

Please adhere to the country-specific terms of use binding for you. In case of any doubt, the possible applications must be agreed with the relevant authority.

### What are the advantages/disadvantages without technical ventilation of the safety storage cabinet?

- + no cost-intensive exhaust air ducts are necessary
- explosion zones must be permanently ensured around the safety storage cabinet
- possible health risk to the employees

### What are the advantages/disadvantages in case of technical ventilation (min. 10x/h) and exhaust duct outwards?

- + no health risk to the employees
- + all the hazardous materials (also acid and base vapours) will be eliminated
- cost-intensive exhaust air ducts with possible wall/ceiling breaks will be necessary
- installation of the safety storage cabinet is no longer flexible
- energy consumption due to heat losses in the exhaust air

### What are the advantages/disadvantages in case of technical ventilation (min. 10x/h) with a recirculating air filter system and without an exhaust duct outwards?

- + no health risk to the employees/workers
- + no cost-intensive exhaust air ducts are necessary
- + flexible installation of the safety storage cabinet
- + no energy losses due to exhaust duct outwards
- + permanent electronic monitoring of the exhaust air volume
- + tested and certified system
- only solvent vapours (hydrocarbons) can be filtered



**In case of any further questions on ventilation of safety storage cabinets, please contact us. Our employees will be happy to help you.**

Please adhere to the country-specific regulations and provisions binding for you.



### Recirculating air filter system

for underbench cabinets, for wall mounting or installation in the optional housing unit

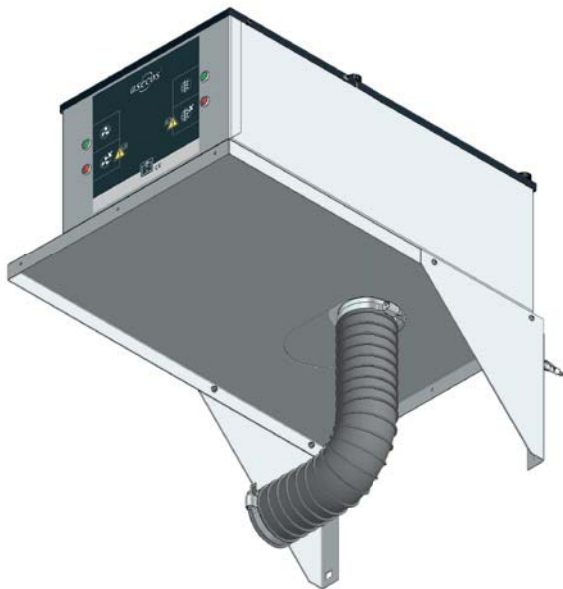
**Order No. 27144**

(housing unit and safety storage cabinet optional)

### Recirculating air filter system for underbench cabinets – safe capturing of escaping vapours at the point where they are released or produced

The recirculating air filter system UFA.20.30-AUS was especially designed for the pressure conditions and volumetric flows of safety storage cabinets with a small internal volume. It can be installed on a wall bracket (illustration below) or in a convenient housing unit (illustration on left).

- high flexibility in choosing the installation location
- active personal protection through safe capture of harmful vapours with retention in the filter system
- very low noise, only approx. 39 dB (A)
- ATEX compliant: **CE** II 3/-G Ex ic nA IIB T4 Gc
- housing made of sheet-steel powder-coated
- with multistage filter system and power cord
- incl. monitoring electronics for exhaust air and filter monitoring, EMC-tested by VDE
- optical and acoustic alarm including potential-free alarm contact



Adapter for wall mounting (sheet steel powder-coated)

**Order No. 23458**

### Technical data

External dimensions W x D x H	mm	305 x 555 x 210
Nominal voltage	V	230
Frequency	Hz	50/60
Maximum current consumption	A	0.07
Noise level	dB	39
Speed	rpm	2200
Weight	kg	17
Volume flow	m <sup>3</sup> /h	25

### Potential-free alarm contact

Max. continuous current	A	10
Max. nominal voltage AC	V	230
Max. nominal voltage DC	V	30



### Model

recirculating air filter system with exhaust air monitoring, for underbench cabinets

**Order No.**

27144



### Accessories

adapter, for wall mounting

adapter, as separate housing unit for lateral mounting

filter, new (activated carbon)

**Order No.**

23458

26885

24212



### Extraction module for technical ventilation of up to 4 safety storage cabinets

#### Safe capturing of escaping vapours and gases at the point where they are released or produced

- suitable for 10 times air change
- extraction air monitoring with integrated pressure leak detector
- connecting fitting NW 100/140
- ATEX compliant: **CE** II 3-G Ex c IIC T4
- housing made of sheet steel powder-coated

#### For wall-mounting

- with wall bracket and mounting kit

**Extraction module**  
for wall mounting, for technical ventilation of up to 4 safety storage cabinets  
**Order No. 8678**

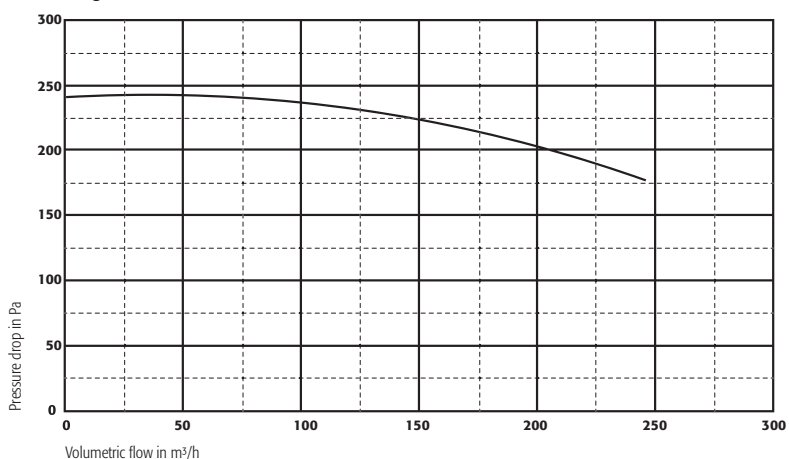


#### Technical data

#### HF.EA.8678

External dimensions W x D x H	mm	600 x 375 x 600
Nominal voltage	V	230
Frequency	Hz	50
Maximum current consumption	A	0.6
Noise level	dB	39.0
Speed	rpm	2780
Weight	kg	25

#### Diagram



#### Model

extraction module for technical ventilation of up to 4 safety storage cabinets

#### Order No.

8678



**Extraction unit**  
for tall cabinets, with exhaust air monitoring  
**Order No. 14220**

**Extraction unit**  
for tall cabinets, without exhaust air monitoring  
**Order No. 14218**

**Extraction units/modules for installation on the cabinet or wall mounting – ready to plug-in, easy and quick installation**

**Safe capturing of escaping vapours and gases at the point where they are released or produced**

- very low noise, ideal for direct installation at the workplace
- with connection cable and power cord
- connecting fitting 75 NW
- ATEX compliant: CE  $\text{CE II 3/-G Ex c IIC T4}$

**Without extraction air monitoring**

- the green LED turns of in case of power failure

**With extraction air monitoring**

- integrated pressure leak detector
- the green LED turns off in case of failure and the red LED lights up

**Voltage free switch contact**

- additionally available for units with extraction air monitoring

**For wall mounting**

- incl. installation bracket, flexible hose, hose clips and installation material

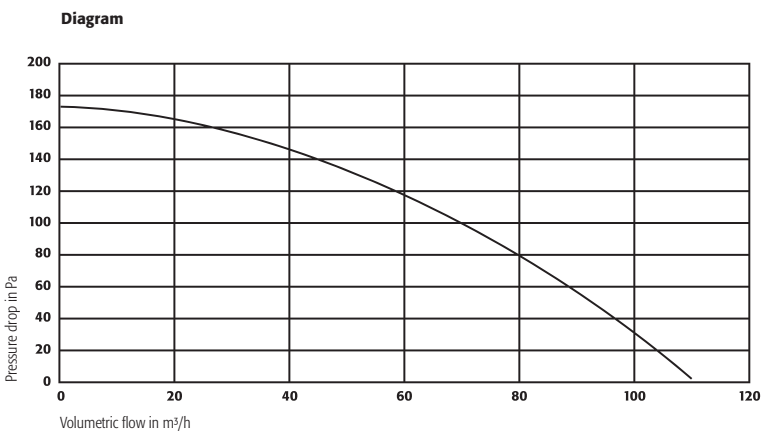


**Extraction module for wall mounting**  
for underbench cabinets, with exhaust air monitoring  
**Order No. 24315**  
(underbench cabinet optional)

Technical data	All models
External dimensions W x D x H	mm 200 x 400 x 200
Nominal voltage	V 230
Frequency	Hz 50
Max. current consumption	A 0.35
Noise level	dB 50.0
Speed	rpm 2400
Weight	kg 12



**Extraction module for wall mounting**  
for tall cabinets, without exhaust air monitoring  
**Order No. 17178**



Model	Information	Order No.
extraction unit without exhaust air monitoring		14218
extraction unit with exhaust air monitoring		14220
extraction unit with exhaust air monitoring	with potential-free alarm contact	16454
extraction module without exhaust air monitoring for wall mounting		17178
extraction module with exhaust air monitoring for wall mounting		17177
extraction module with exhaust air monitoring for wall mounting	with potential-free alarm contact	18568
extraction module with exhaust air monitoring for wall mounting, for underbench cabinets	with potential-free alarm contact	24732
extraction module with exhaust air monitoring for wall mounting, for underbench cabinets		24315



### BASIC-LINE model APG.26.30-BL

exhaust air monitoring for installation on top of the safety storage cabinet

Order No. 14945

#### Technical data

#### APG.26.30-BL

External dimensions W x D x H	mm	300 x 400 x 265
Frequency	Hz	50
Max. current consumption	A	0.15
Noise level	dB	28.0
Weight	kg	10
Min. volume flow	m <sup>3</sup> /h	30

#### Technical data

#### APG.26.30-CL/-HL/-EL

External dimensions W x D x H	mm	300 x 400 x 265
Frequency	Hz	50
Max. current consumption	A	0.15
Noise level	dB	28.0
Weight	kg	10
Min. volume flow	m <sup>3</sup> /h	20

**Exhaust air monitoring systems – quick installation for a safe and reliable monitoring of the exhaust air**

#### Exhaust air and volume flow monitoring

- with connection cable (3 m) and power cord
- mounting between cabinet and on-site air exhaust-system
- connecting fitting DN 75
- ready to plug-in, quick installation
- ATEX compliant: **CE** II 3/-G Ex n IIC T4

#### Model BASIC-Line

- electro-pneumatic air exhaust monitoring
- minimum volume flow 30 m<sup>3</sup>/h

#### Model COMFORT-Line

- electronic volume flow monitoring
- minimum volume flow 20 m<sup>3</sup>/h

#### Model HIGH-Line

- electronic volume flow monitoring
- minimum volume flow 20 m<sup>3</sup>/h
- potential-free alarm contact
- localisation of cabinet's or on-site dysfunction

#### Model EXCLUSIVE-Line

- electronic volume flow monitoring
- minimum volume flow 20 m<sup>3</sup>/h
- potential-free alarm contact
- localisation of cabinet's or on-site dysfunction
- digital display of the exact volume flow and acoustic alarm in case of power breakdown



### COMFORT-LINE model APG.26.30-CL

electronic volume flow monitoring for installation on top of the safety storage cabinet

Order No. 14372

### HIGH-LINE model APG.26.30-HL

electronic volume flow monitoring with potential-free alarm contact, for installation on top of the safety storage cabinet

Order No. 14371

### EXCLUSIVE-LINE model APG.26.30-EL

electronic volume flow monitoring with potential-free alarm contact and digital display, for installation on top of the safety storage cabinet

Order No. 14352



#### Model

#### Information

#### Order No.

APG.26.30-BL	module for air monitoring BASIC-LINE	14945
APG.26.30-CL	module for volume flow monitoring COMFORT-LINE	14372
APG.26.30-HL	module for volume flow monitoring HIGH-LINE	14371
APG.26.30-EL	module for volume flow monitoring EXCLUSIVE-LINE	14352





#### Fan for safety storage cabinets

CE Ⓜ II 2G Ex e IIB T4 Gb / NB 07 ATEX D105X  
explosion proof  
Order No. 5794

#### Fans - powerful and safe ventilation of safety storage cabinets

- housing and impeller made of polypropylene
- sealed against gas emission
- connecting fitting 75 NW
- VDMA and CE conformal
- protection class IP 55
- air flow 60-250 m<sup>3</sup>/h
- total pressure 240-175 Pa
- incl. PA/GFK console



#### Fan for safety storage cabinets

CE Ⓜ II 3G Ex n IIB T4 Gc / NB 07 ATEX D105X  
suitable for extraction out of explosive area 2, can't be installed within explosive areas  
Order No. 5793

Technical data	EH.VE.5793	EH.VE.5794
External dimensions W x D x H mm	275 x 225 x 312	275 x 225 x 312
Nominal voltage	V 230 V	3x400 V
Frequency	Hz 50/60 Hz	50/60 Hz
Maximum current consumption	A 4.5 A	2.9 A
Noise level	dB 45.0 dB	45 dB
Speed	rpm 2850 rpm	2800 rpm
Weight	kg 4.2 kg	4.8 kg



Motor protection switch suitable for fans  
Order No. 5799



Flexible extraction hose made from plastic,  
inner diameter 75 mm  
Order No. 1434



Butterfly damper made from polyethylene,  
outer diameter 75 mm  
Order No. 5798



Hose clamp made from chrome steel,  
diameter 70 - 90 mm  
Order No. 5797



#### Model

	Order No.
fan	5793
fan	5794



#### Accessories

	Order No.
motor protection switch suitable for fans	5799
protective housing for motor protection switch	5803
flexible extraction hose made from plastic, inner diameter 75 mm	1434
T-piece made from PVC, outer diameter 75 mm	8681
butterfly damper made from polyethylene, outer diameter 75 mm	5798
hose clamp made from chrome steel, diameter 70 - 90 mm	5797