ACD

Technical Documentation – ACD 400.1 MD.43 A28 Ex

Version 002

ULT
air quality

Contents

Attachments:

- Drawing
- Declaration of Conformity

Description of product series

The **ACD 400.1 MD.43 A28 Ex** unit is is designed to be **free of sources of ignition**. It has an explosion-proof fan in accordance with ATEX Ex II 2G T3 for extraction and filtration of dry, flammable/non-flammable gases and vapors in low concentrations that are not potentially explosive (< 20% of the lower explosion limit) and have a low dust content.

A 2-stage filter system is available for **industrial applications** involving substances with increased requirements in relation to health protection and explosion protection.

In order to make it impossible for gases and vapors that have been concentrated in the filter to ignite, the activated carbon filter elements and downstream components, such as the ATEX-compliant fan and the ATEX-compliant motor, are grounded and free of sources of ignition.

The temperature class of the blower is T3. As a result, the maximum surface temperature is 200°C. This means that gases in the temperature classes T1, T2, and T3 with an ignition temperature > 200°C can be safely extracted.

It is not permitted for the ACD 400.1 MD.43 A28 Ex unit to be installed or operated in Ex zones.

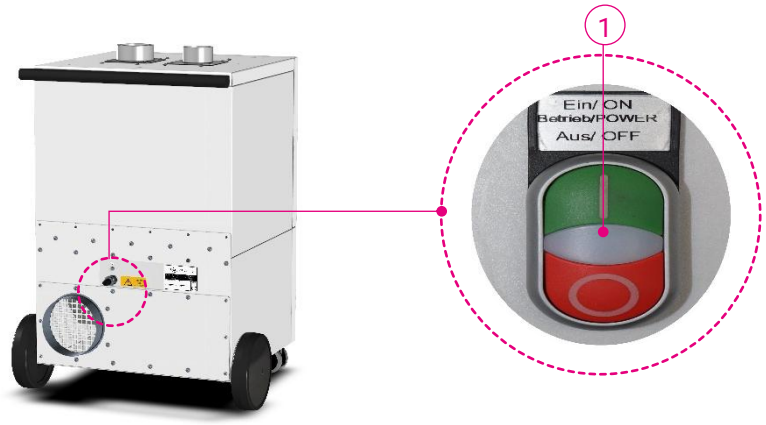
The harmful and unwanted substances produced in the relevant customer process are collected via a collection element and filtered in the **ACD 400.1 MD.43 A28 Ex**. When the raw gas enters the device, the air impurities in the form of gases and vapors are retained by the activated carbon filter of the filter cassettes (through adsorption processes).
Thanks to the high degree of purification, the filtered clean gas can be directed back into the working space (**recirculated air** mode).

Features – ACD 400.1 MD.43 A28 Ex Extraction and Filtration Unit

- **Explosion-proof fan** in accordance with ATEX Ex II 2G T3
- Electrically conductive **filter cassettes** with equipotential bonding connection
- With **interchangeable filter system** – for safe removal with minimal contamination risk
- Ready for installation of console brackets and hose connections
- **Low energy consumption** thanks to energy-efficient device electronics
- All electrical components are compliant with CE standards
- Integrated soundproofing ensures extremely **quiet operation**
- Robust sheet steel enclosure with **powder coating**
- **Mobile unit** with casters
- Separate starter box with control elements

Equipment

Figure 1: Starter box



1 ON/OFF switch

Starter box:
Separate switch box

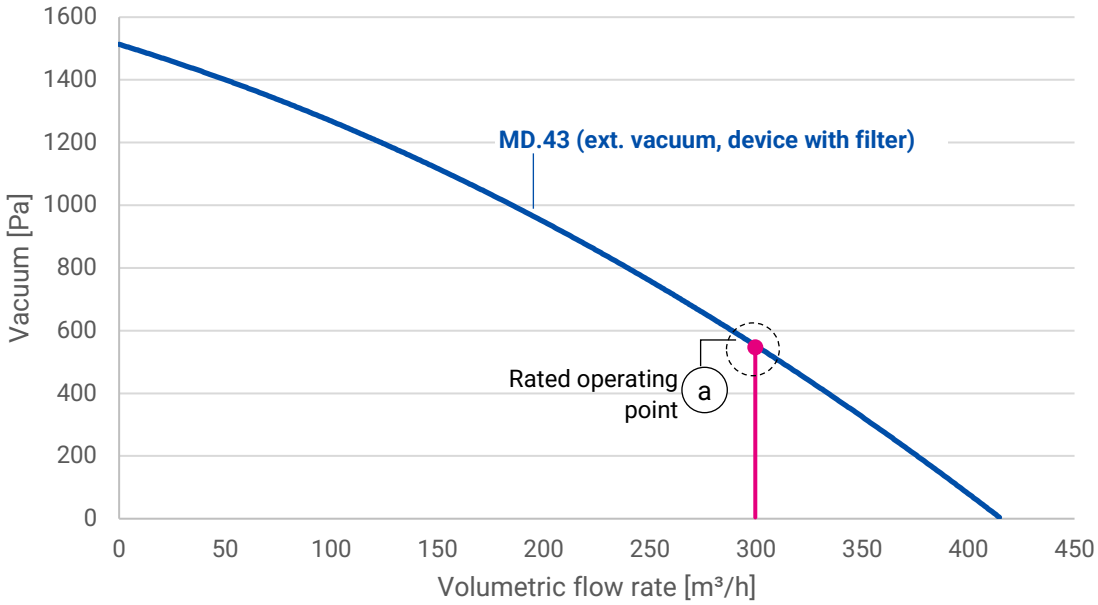
Technical data

ACD 400.1 MD.43 A28 Ex

PARAMETER	UNIT	
Max. volumetric flow rate	m³/h	900
Max. vacuum	Pa	1,650
Rated volumetric flow rate (fan characteristic curve)	m³/h @ Pa	300 @ 1,000
Protection rating	IP	54
Sound level	dB(A)	60
Vacuum generator type		Ex II 2G T3
Rated voltage	VAC	3~ 400
Rated frequency	Hz	50
Rated motor power	kW	0.55
Rated current	A	1.5
Volumetric flow rate controller		No
Particulate filter saturation indicator	Visual	No
Dimensions (width x depth x height)	mm	670 x 600 x 872
Weight (without filter)	kg	ca.58
Max. weight with filter	kg	Approx. 98
Air intake variants:	Intake nozzle	2x Ø 80 mm connector Optional Ø 100 mm connector Optional Ø 75 mm Alsident console bracket Optional Ø 100 mm Alsident console bracket
	Connection options	Hose connection or arm mounting with console bracket
Outlet air guidance:		Outlet grille Outlet nozzle Ø 160 mm (optional)
	Position	Rear of unit at bottom
Mains connection		Fixed connection on the device, cable length 5.0 m with EU plug (CEE 7/7 / other country-specific variants can be chosen)

Characteristic curve

Figure 2: Characteristic curve of the device



ACD Series – Vapors, Odors, and Gases

Areas of application

Gluing | Pre-treatment | Painting / Printing | Cleaning | Laminating | Casting

Operating principle

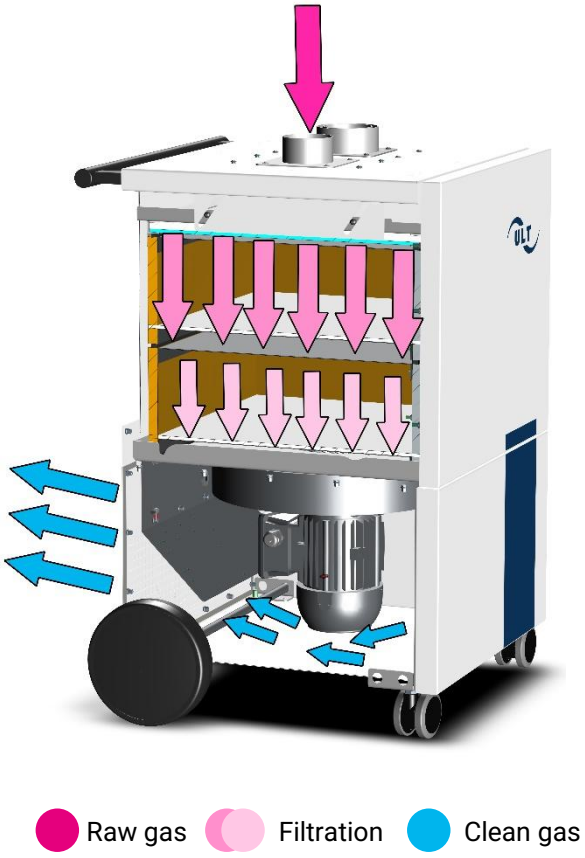
The blower installed in the ACD 400.1 MD.43 A28 Ex generates a negative pressure (vacuum) at the intake nozzle of the connected collection element. As a result, impurities in the air can be collected and sucked out directly at the point of creation.

For safe extraction and filtration of flammable gases, it is necessary for the concentration of the gases that are sucked in to be < 20% of the lower explosion limit (LEL) at all times. This prevents dangerous interactions between the gas and the downstream filters. Details about LELs can be found in the GESTIS Substance Database of the German Social Accident Insurance (DGUV): https://gestis.dguv.de/ and https://gestis-database.dguv.de/ .
The filter and the housing are integrated in an equipotential bonding system to prevent any electrostatic discharge.

The device is equipped with a two-stage filter system.

When the raw gas enters the device, all the present dust particles are retained by a filter pad.

Figure 3: Filtration in the device



The separation (adsorption) of air impurities in the form of gas or vapor takes place in the activated carbon fill of the filter cassette. The filtration effect of the activated carbon is based on adsorption, i.e. the process by which (gaseous) substances adhere to the porous surface of the activated carbon. Here, physical adsorption does not involve any chemical changes to the substance being adsorbed.

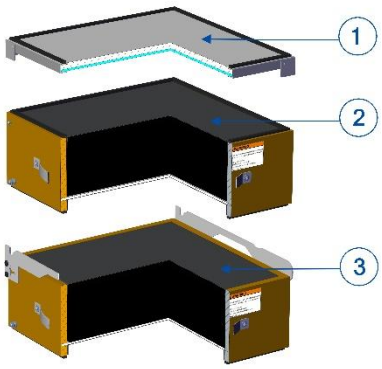
Thanks to the high degree of purification, the filtered clean gas can be directed back into the working space (recirculated air mode). As a result there are no thermal losses.

Recirculated air mode is not permitted when the equipment is used to extract substances that are carcinogenic, mutagenic, or toxic for reproduction. In these cases the optional outlet nozzle should be mounted on the outlet side. The filtered clean gas must be directed via a connected pipe section into a central air outlet system.

Filter layout – ACD 400.1 MD.43 A28 Ex

Table 1: ACD 400.1 MD.43 A28 Ex

Product number / complete unit:	1-00183
Filter for organic gases:	
(1) Interchangeable frame with dust pre-filter	
Filter pad M5	ISO Coarse > 85% in acc. with ISO 16890
(2) Adsorption filter cassette A14, electrically conductive	
Filter medium:	Activated carbon fill (14 kg)
(3) Adsorption filter cassette A14, electrically conductive	
Filter medium:	Activated carbon fill (14 kg)



Accessory items

Suction system DN80

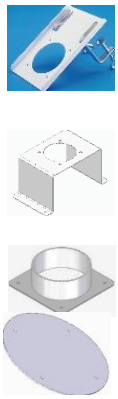
Hoses

Flexible suction hose DN 80, 2 m	Antistatic, incl. 90° bend, sleeve, and worm-drive hose clips	3-00489
Flexible suction hose DN 80, 3 m	Antistatic, incl. 90° bend, sleeve, and worm-drive hose clips	3-00490
Flexible suction hose DN 80, 5 m	Antistatic, incl. 90° bend, sleeve, and worm-drive hose clips	3-00491
Flexible suction hose DN 80, by the meter	Antistatic, without accessories	6-06874

Hose accessories

Reduction from 1x DN 80 sleeve to 2x DN 50 connecting pieces	Incl. 90° bend and worm-drive hose clips for intake nozzle DN 80	3-01319
Bend 90° DN 80	Antistatic, incl. worm-drive hose clips	3-00496
Sleeve DN 80	Antistatic, incl. worm-drive hose clips	3-00497
Reduction from DN 80 to DN 75	Antistatic, for connection of DN 80 hose to extraction arm system 75, incl. worm-drive hose clips	3-00499

Elements for extraction arm installation and intake nozzles



Tabletop stand, white	Alsident system 75, accessories	2-7510
Device console bracket 1x S75 extraction arm	For retrofitting Incl. installation accessories and connecting hose	3-01280
Intake nozzle DN 80	For retrofitting	3-01331
Intake blind cover	For retrofitting	3-01333

Extraction arms

Alsident system 75 Extraction arm	1290 mm For tabletop/device mounting	75-6555-1-5

Collection elements

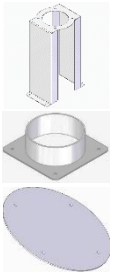
Flat hood	Alsident system 75, accessories	1-753324-5
Round hood, aluminum	Alsident system 75, accessories	1-7524-5
Suction tip	Alsident system 75, accessories	1-7525

Suction system DN100

Hoses and hose accessories

Flexible suction hose DN 100, by the meter	Antistatic, without accessories	6-06875
Sleeve DN 100	Antistatic, incl. worm-drive hose clips	3-00500

Elements for extraction arm installation and intake nozzles



Console bracket 1x S100 extraction arm	For retrofitting Incl. installation accessories and connecting hose	3-01330
Intake nozzle DN 100	For retrofitting	3-01332
Intake blind cover	For retrofitting	3-01333

Extraction arms

Alsident system 100 extraction arm	1370 mm For tabletop/device mounting	100-6555-1-5

Collection elements

Flat hood	Alsident system 100, accessories	1-1004228-5
Round hood, PETG, 500 mm	Alsident system 100, accessories	1-10050-5
Round hood, aluminum, white, 200 mm	Alsident system 100, accessories	1-10024-5

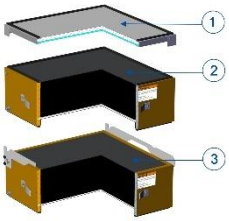
Air Outlet System DN 160

Hoses and hose accessories

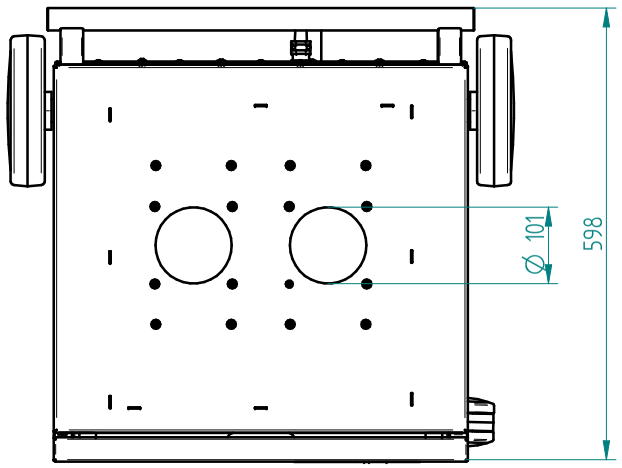
Suction hose DN 160, by the meter	Antistatic, without accessories	6-16402

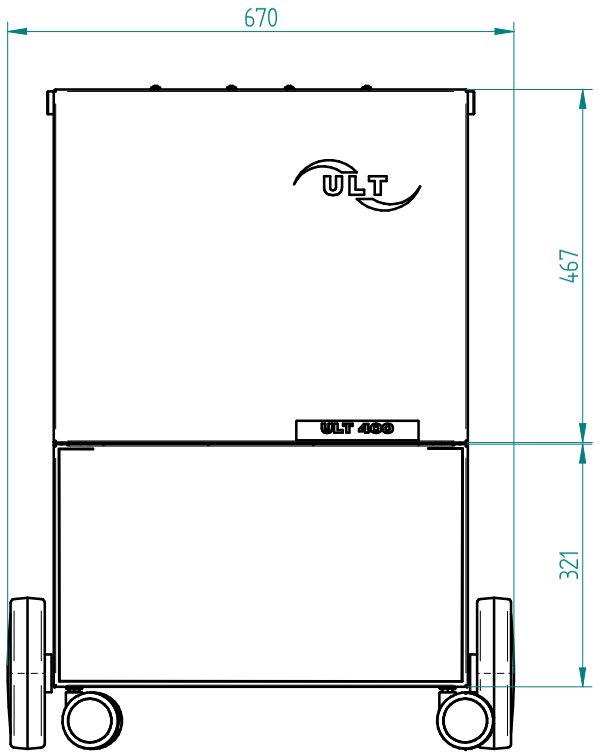
Replacement filters

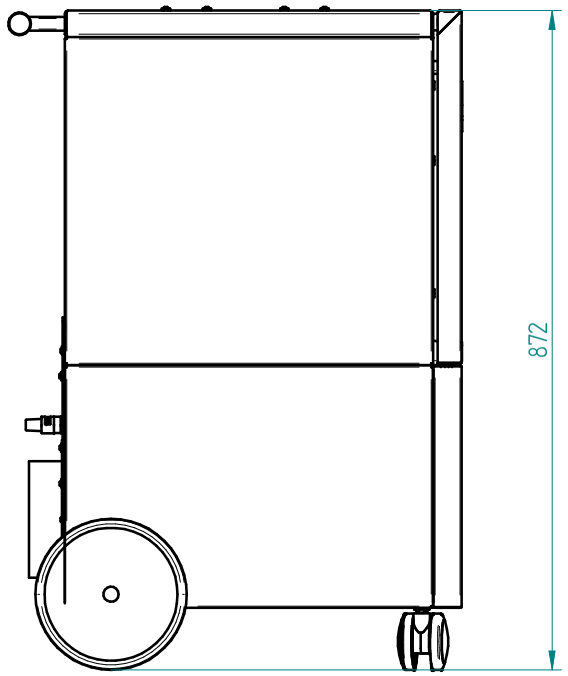
ACD

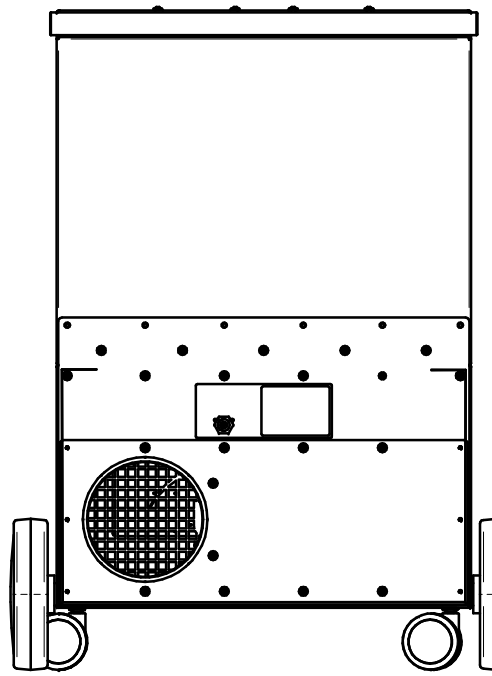


Filter A28	
Filter mat M5	4-00210
Set of filter mat M5, set of 10	4-00214
Interchangeable frame with filter pad M5, grounded	4-00869
Adsorption filter cassette A14, grounded* *2x per unit	4-00874









Aktuelle Änderung

Index

Weitere Maße sind dem 3D-Datensatz zu entnehmen.

Revisionen				
Index	Beschreibung	Blatt	Datum	Bearbeiter
000	Basis			

Abteilung	Technische Referenz	Dokumentenstatus	Erstellt von	Erstellt am	
		Verfügbar	b.juengling	12.05.2023	
ULT AG Am Göpelteich 1 D-02708 Löbau		Titel / Untertitel	Geprüft von	Geprüft am	
			Dokumententyp		
Schutzvermerk ISO 16016 beachten.		Dokumentennummer	Revision	Sprache	Maßstab / Blatt
				DE	1:10 / 1 von 1

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EU - Declaration of Conformity

according to Machinery Directive 2006/42/EG annex II No. 1A

Herewith, we declare that the following product type in its delivered state complies with the following relevant provisions:
EC-Machinery directive 2006/42/EG
Electromagnetic compatibility - directive 2014/30/EU

If the above mentioned machine is technically modified without our approval, this declaration shall no longer be applicable:

Description of machine:	extraction and filtering unit
Type:	ACD 400.1 MD.43 Ex
Series No.	YYYY 41 xxx (Year - Type/Serial - Number)
Applied national technical standards and specifications:	DIN EN ISO 12100 DIN EN ISO 13857 DIN VDE 1000 DIN EN 60204-1

Karl Ullwer is the authorized representative for completion of the technical documentation

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