

Product Data Sheet

Point of use Dryer FCA..CMSM

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Field of application

Type FCA..CMSM point of use dryers are mainly designed for separating humidity (water vapour content) from compressed air flows (dry-type filtration). Point of use dryer are therefore used, if there are no any liquid contaminants in the compressed air flow and when small amounts (maximum 4 m³/h) of dry compressed air (up to -40°C) for short periods (approximate 20 hours total load capacity) are required.

Features

Type FCA filter housings are made from high-quality, corrosion-resistant aluminium, manufactured in a casting process (gravity casting). For surface finishing purposes and for increasing resistance all filter housings have to go through a chrome(VI)-free passivation process and are finished by an impact-proof and abrasion-proof powder coating which is provided on the outer side of the housing.

The filter housings comply with the requirements of the Pressure Equipment Directive 2014/68/EU, and some (depending on the model and pressure level) have the CE marking of this European directive.

Point of use dryer are provided with a manual drain (code CMS'M').



EFST..CMS filter cartridges consist of a loose desiccant filling, embedded between two coarse filter cloths and mesh screens. Furthermore a pleated general purpose filter element (Z) is fully integrated into the cartridge downstream in order to reliably prevent even the finest desiccant abrasion from leaving the filter cartridge. A transparent perspex cylinder as a main body makes the desiccant filling visible. The pleated general purpose filter media is located between two stainless steel cylinders. Both desiccant and filter stage are completed / separated by plastic end caps. The adsorptive desiccant stage as well as general purpose filter stage is fully incorporated in a single, compact cartridge unit. **As a result a further downstream dust filtration is no longer required.** The longish shaped desiccant bed ensures a long contact time of the compressed air with the desiccant and thus a low dew point and long lifetime.



All the features mentioned above contribute to a point of use dryer which has a long service life (high adsorption capacity) combined with economic efficiency (low differential pressure, small investment costs) and maximum operating safety (integrated design). This guarantees extremely low dew points and thus dry air.

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Specifications subject to change without notice Date 05.07.2016

Basic data

Model	Nominal volume flow (VN) ^{*1}	Capacity ^{*2}	Max. operating pressure	Min./Max. operating temperature
FCA90CMSM	0,5 m ³ /h	11 m ³	16 bar	+2°C - +45°C
FCA110CMSM	1.5 m ³ /h	32 m ³		
FCA120CMSM	2.5 m ³ /h	54 m ³		
FCA130CMSM	4.0 m ³ /h	95 m ³		

*1 - refers to 1 bar(a) and 20°C at 7 bar operating pressure for 10 seconds contact time of the compressed air inside the desiccant bed
Reducing the volume flow improves all specifications

*2 - refers to 20°C inlet temperature (17.15 g/m³ humidity) and 20% load capacity of the desiccant referred to its weight

Purity classes according to ISO 8573-1

Contamination	
Solid particles ^{*3}	(Class 2)
Water content ^{*3}	Class 2
Total oil content	---

*3 - typical result, on the assumption of suitable inlet concentrations as well as operating and marginal conditions.

Volume flow conversion factors

«F1» - Pressure (in bar)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.125	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13

«F2» - Temperature (in °C)

2	5	10	15	20	25	30	35	40	45
1.07	1.05	1.04	1.02	1.00	0.98	0.97	0.95	0.94	0.92

Calculation of the converted volume flow

Converted volume flow VK	Nominal required volume flow VN _{min}
$VK = VN \times F1 \times F2$	$VN_{min} = VK / F1 / F2$

VK : Converted volume flow calculated for the operating conditions

VN_{min}: Nominal required volume flow calculated for the operating conditions, based on the volume flow at operating conditions

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Maintenance rules

Pressure range	
Entire pressure range	<ul style="list-style-type: none"> ■ Replacement of filter cartridge depending on the operating temperature and therefore on the specified vapour amount (use of a humidity indicator or dewpoint meter is recommended) ■ In the course of filter cartridge replacement or cleaning: checking for serious corrosion

Product specific data

Specification	
Differential pressure	< 50 mbar
Pressure dew point (nominal)	-40°C

Materials

Component	
Filter housing	Aluminium (16 bar VDS no.: 233 ; 50 bar VDS no.: 239 heat treated)
Coatings	Inside and outside: Chrome(VI)-free thin-film passivation ; min. layer thickness 5µ Outside: 1-component power coating epoxide/polyester basis, layer thickness appr. 80 µ
Mounting parts, fittings	Brass, brass (nickel-plated), steel (galvanically zinc-plated)
Sealing materials	NBR, Teflon (FCA140-190)
Lubricants	Rivolta S.K.D. 4002 or similar
Filling	Molecular sieve (MS)
Filter cloths	Polyester-Polyurethane
Mesh screens	Stainless steel 1.4301
Filter media general purpose filtration	Glass fibre
Bonded joint	PU (Polyurethane)
Cylinder filling	Acrylic
Cylinders filter media	Stainless steel 1.4301
End caps	PA6 (Polyamide)
Sealing materials	NBR

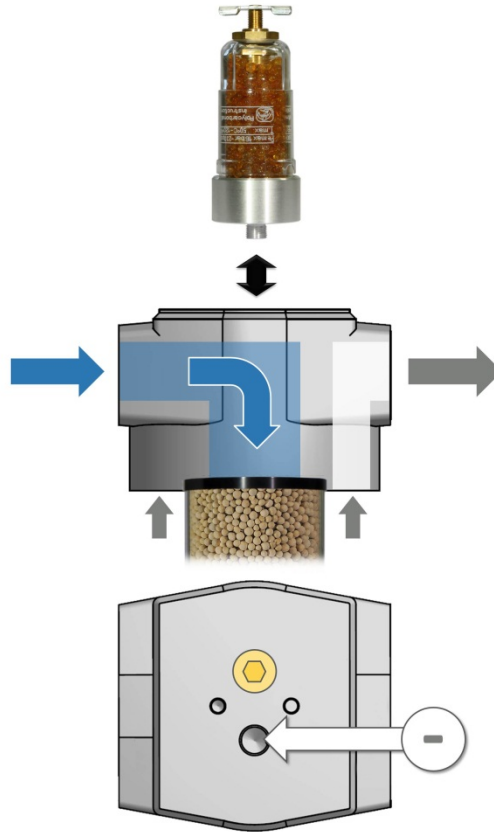
Connections, dimensions and weight

Model	Connection	Condensate Outlet	Height	Width	Depth	Weight
FCA90CMSM	G 1/2	CDM14N	311 mm	130 mm	122 mm	4.0 kg
FCA110CMSM	G 1/2	CDM14N	409 mm	130 mm	122 mm	4.4 kg
FCA120CMSM	G 1/2	CDM14N	509 mm	130 mm	122 mm	4.8 kg
FCA130CMSM	G 1/2	CDM14N	711 mm	130 mm	122 mm	5.8 kg

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Connection humidity indicator



Classification according to Pressure Equipment Directive 2014/68/EU for group 2 fluids

Model	Volume	Category	Commissioning inspection *6	Routine inspection *6
FCA90CMSM	1.46 litres	---	---	---
FCA110CMSM	2.19 litres	---	---	---
FCA120CMSM	2.91 litres	---	---	---
FCA130CMSM	4.36 litres	I	AP*7	---

*6 - In Germany defined by the Ordinance on Industrial Safety and Health of September 27th, 2002 (BGBI. I p. 3777) §14 and §15

*7 - Authorised person (AP) or Notified Body (NB)

Other directives

Model	
All models	---