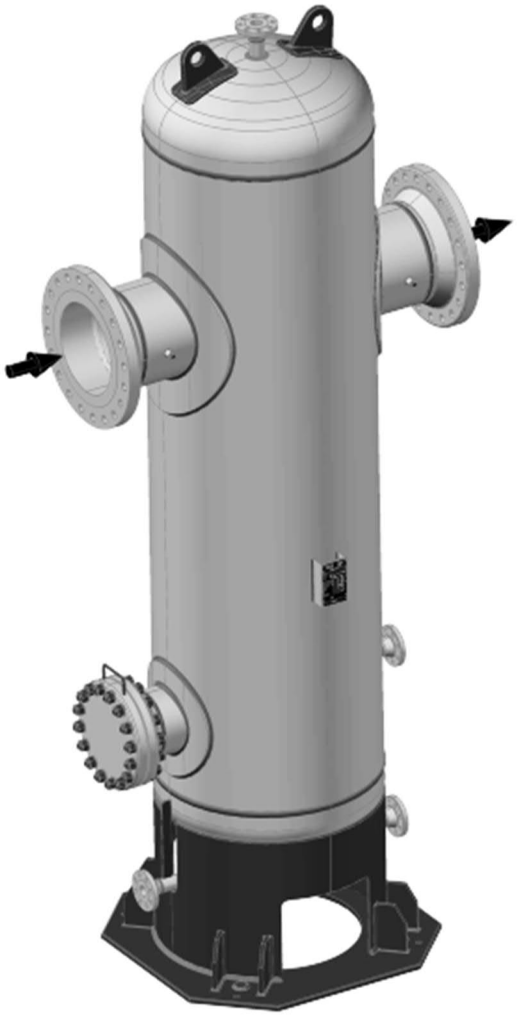
THIELMANN
ENERGIETECHNIK GTS



HIGH PERFORMANCE CYCLONE SEPARATOR

TYPE VZA / VMZA

for all gases according to DVGW worksheet G260
and for all non-aggressive special gases

HIGH PERFORMANCE SEPARATOR
TYPE VZA / VMZA

CHARACTERISTICS

» Efficient dust and liquid filtration for coarse particles
» primary filter for pre-separation; scrubber
» single cylcone type VZA
» multi cylone type VMZA
» Single-stage, maintenance-free
» Large dust and liquid sump collection chamber

OPTIONS

» Customer-specific design for other control systems (ASME, EN 13445, SVTI, AS1210, PD5500 etc.)
» Customer-specific approvals
» Customer-specific testings
» Application for sour gas (NACE)
» Design for low temperature down to -50 ° C
» Design pressure up to 300 bar
» Customer-specific nozzle arrangement

ACCESSORIES ON DEMAND

» Differential pressure measurement
» Level indicators / control
» Drainage systems
» bottom sump heating systems

GENERAL

A high-performance cyclone separator VZA or VMZA is used to clean gas from dry and liquid contaminants. The design is carried out as a steel welded construction in vertical construction.

QUALITY MANAGEMENT

» DIN EN ISO 9001 certified
» Our standard equipment is tested according to AD 2000 and CE-certified according to the EC / PED 2014/68 / EU pressure equipment directive. The examination is carried out by authorized (TPI) third party inspectors (TÜV, Lloyd's Register, etc.).
» Test and material certificates are prepared by the TPI according to the design specification.

FUNCTION

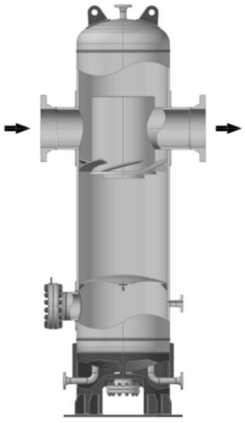
The single-stage high-performance cyclone separator uses the centrifugal principle to separate solid and liquid particles from the gas stream. With a corresponding ejection, it is maintenance-free.
The gas flows through the inlet port into the filter housing and is guided radially in rotation by an axial cyclone or multi-cyclones. Coarse particles are centrifuged against the vessel wall by centrifugal force and slide into the lower dust and liquid collection chamber. In this case, the deposition efficiency increases with increasing specific density of the dirt particles and with increasing through flow speed. Correspondingly, the pressure loss increases as the flow velocity increases. A centered immersion tube with paddle wheels carries the cleaned gas into the gas outlet. A shielding of the collecting chamber prevents the entrapped particles from becoming entangled and entrained.

DESIGN DATA (STANDARD)

Design + manufacture	AD 2000 + CE	Radiographic examination	According to the rules
design pressure	custom	dye penetrant	According to the rules
design temperature	-10 / + 50 ° C	US test	On demand
casing	Carbon Steel	Water pressure test	P x 1.43
Preliminary and structural inspection	TPI approval	Leak testing	Factory acceptance 6 bar g
material witness	EN 10204 / 3.1	EC / PED 2014/68 / EU	CE certified
		Corrosion surcharge	

TECHNICAL SPECIFICATIONS FOR CUSTOMER REQUEST / ORDER:

Design Data:									
Design Code		☐ AD 2000	☐ ASME	☐ EN 13445	☐	Bitte angeben			
Tests / Options		☐ CE / PED	☐ U-Stamp	☐ NACE	☐	Bitte angeben			
Design Pressure	PN		bar	corrosion allowance	c_2		mm		
Design Temperture	DT	min. / max.	°C	design orientation		☐ vertical	☐ horizontal		
Nozzles / Connections:		Bitte angeben		flow direction		☐ li / re	☐ re / li		
Nozzle DN Please, announce on demand		☒ inlet	☒ outlet	☒ drainage	☒	vent	☒ DP		
Nozzle DN, additional		☐ PI	☐ TI	☐ purge	☐	Please, announce			
Berechnungsdaten:									
Medium		☐ Natural Gas	☐ Biogas	☐ Sour Gas	☐	Please, announce			
Density (Gas Analysis)	ρ_{ni}		kg/m³	Efficiency Dust		% ≥	µm		
flow rate, nominal	V_n		Nm³/h / SCFM	Efficiency Droplets/Fluids		% ≥	µm		
Operational Pressure	P_i	min. / max.	bar	Efficiency Oil Mist		% ≥	µm		
Operational Temperature	ϑ_i	min. / max.	°C	Material Contaminations		Please, announce - as far as known			

Typ / Type	Technische Daten / Technical Data		Skizze / Sketch
VZA	**1-stufig, vertikal** **Axialzyklon**		
	Abscheiderate Staub	99,5 % ≥ 10-12 µm	
	Abscheiderate Flüssigkeiten	99,5 % ≥ 10-12 µm	
	Differenzdruck im Neuzustand	max. 450 mbar	
	Leistungsbereich	15 – 110%	
	Flüssigkeits-Sammelräume	1x	
	1-stage, vertical **Single Cyclone**		
	Efficiency Dust	99,5 % ≥ 10-12 µm	
	Efficiency Liquids	99,5 % ≥ 10-12 µm	
	Differential Pressure @ new condition	max. 450 mbar	
	Load Range	15 – 110%	
	Drainage System Unit	1x	

VZA STANDARD DESIGN PN16 - PN 40

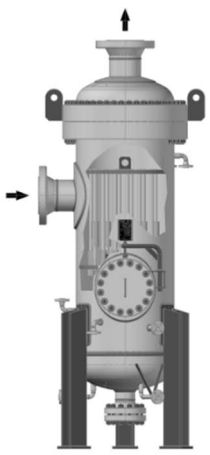
Each separator is equipped with 2 differential pressure and one G ½ "air connection as standard. According to the direction of flow, they are arranged forward. In the liquid collecting chamber, 2 nozzles are provided for level indication and 1 nozzle for discharge. According to the regulations, the apparatus is designed in the lower sump area with an inspection opening as well as an evacuating socket as standard. The emptying is closed for delivery with a blind plug or blind cover.

Type Designation Sample: **VZA 800 . 16 . 400 . 1**

- Typ / Type
- DN Apparat / DN Vessel
- Durchflussrichtung / Flow Direction
- DN Stutzen / DN Nozzle
- PN Designdruck / PN Design Pressure

VZA	D	B	H1	H	DN DIN	ASME RF	m³/h	SCFM
150	168,3	450	800	1000	50	2"	100	56
200	219,1	550	950	1200	80	3"	275	154
250	273	650	1050	1350	100	4"	525	294
300	323,9	700	1150	1450	150	6"	975	545
350	355,6	750	1250	1600	150	6"	1.450	811
400	406,4	820	1450	1850	200	8"	2.100	1.174
500	508	960	1650	2100	250	10"	2.900	1.622
600	600	1100	1850	2350	300	12"	4.400	2.460
700	700	1160	2150	2700	300	12"	6.000	3.355
800	800	1300	2250	2900	400	16"	7.000	3.914
900	900	1500	2350	3050	400	16"	9.500	5.312
1000	1000	1700	2500	3250	500	20"	12.500	6.990
1100	1100	1800	2700	3550	500	20"	17.500	9.786
1200	1200	2000	2900	3800	600	24"	20.000	11.184

Hinweis / Remarks:
Die Tabelle ist nicht verwendbar für die Ausführung Typ VMZA!
The chart cannot be used for the design Type VMZA!

Typ / Type	Technische Daten / Technical Data		Skizze / Sketch
VMZA	**1-stufig, vertikal** **Multi-Zyklone**		
	Abscheiderate Staub	99,5 % ≥ 10-12 µm	
	Abscheiderate Flüssigkeiten	99,5 % ≥ 10-12 µm	
	Differenzdruck im Neuzustand	max. 350 mbar	
	Leistungsbereich	15 – 110%	
	Flüssigkeits-Sammelräume	1x	
	1-stage, vertical **Multi Cyclones**		
	Efficiency Dust	99,5 % ≥ 10-12 µm	
	Efficiency Liquids	99,5 % ≥ 10-12 µm	
	Differential Pressure @ new condition	max. 350 mbar	
	Load Range	15 – 110%	
	Drainage System Unit	1x	

CONTACT

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