

# Condensate Trap

deep-drawn CrNiMo-steel (316L),  
corrosion-resistant, lightweight  
and compact

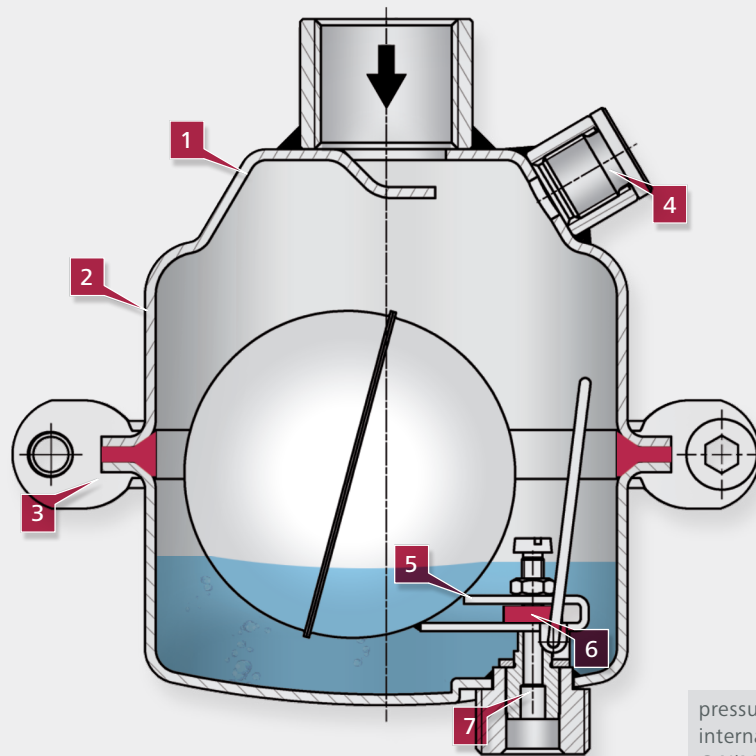
long operational lifespan,  
manageable installation,  
minimum space required, low  
deltaferrite content possible

1

connection for pressure  
compensation line  
optimum pressure  
compensation

4

**Ex** suitable for the use  
in explosion-risk areas  
**ATEX-certified**



pressure and corrosion resistant  
internal parts of deep drawn  
CrNiMo stainless steel (316L)

long operational lifespan

5

soft seal

valve is tight already when  
unpressurised

6

sturdy valve mechanism

low maintenance

7

standard surface  $\leq$  Ra 1.6  $\mu$ m

easy-to-clean

2

Mankenberg clamp system

easy-to-maintain

3

**Special feature**

ATEX-certified

suitable for the use in explosion-  
risk areas

Condensate Trap for Compressed Air and Gases

KA 2K

# Mankenberg Condensate Trap in Action

We reserve the right to make technical changes. Images non-binding. 05/2014



## Condensate Trap for Compressed Air and Gases

KA 2K

particularly gastight also without fluid content owing to the soft seal valve closure and the fully developed lever mechanism | certified in accordance with ATEX | operating pressures down to millibar range | completely made of deep-drawn CrNiMo-steel (316L) – surface finish of the body  $Ra \leq 1.6 \mu m$  | easy-to-maintain owing to clamp system | very lightweight and compact, corrosion-resistant to aggressive media, easy-to-maintain | manageable installation, long operational lifespan

		PN	16
G	$\frac{1}{2} - 1$	T	80 °C
p	0 - 12 bar	Q	1,570 l/h

**HIGH  
GRADE**

**Ex** suitable for the use  
in explosion-risk areas  
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## Safe Condensate Discharge in Biogas Plants

Biogas plants provide an uninterrupted energy supply because they produce biogas through fermentation of biomass regardless of prevailing weather conditions. In such plants liquid manure, organic waste or wood pellets are fermented using anaerobic micro-organisms. Fermentation comprises four different stages whereby the last stage produces, amongst others, the target product methane (CH<sub>4</sub>). It is the valuable combustible component of the biogas and used for the generation of electricity or heat. According to the composition of the substrate and the functioning of the plant, the proportion by volume of the methane in the biogas amounts to between 50 and 80 %. The remaining percentage comprises, amongst others, carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), hydrogen (H<sub>2</sub>), and hydrogen sulphide (H<sub>2</sub>S).

Hydrogen sulphide has an extremely corrosive effect on the material for pipelines, valves or tanks, because it forms sulphurous acid when reacting with water or water vapour. This leads to the so-called Hydrogen Induced Cracking, during which the hydrogen released by the chemical reaction diffuses into the steel and causes cracks there. Hence, corrosion-resistant stainless steels are the only material to be selected for biogas plants. In addition, the employed valves must be frost-proof and ATEX-compliant.

In various biogas plants, Mankenberg condensate traps KA 2K are used for the automatic water drainage of condensate pots or gravel/ fine ceramic filters. The condensate pit poses a high risk owing to the concentrated accumulation of CH<sub>4</sub>, CO<sub>2</sub> or H<sub>2</sub>S. Insufficient protection against the escape of gas may cause an explosion.

The KA 2K reliably drains the condensate in a highly corrosive atmosphere without any loss of gas or steam. The float-controlled valve is completely made of highly corrosion-resistant deep-drawn stainless steel. The valve is absolutely gastight thanks to the combination of a soft seal seat and a condensate guard, which reliably prevent the escape of gas. Hence, the KA 2K complies with the requirements of the ATEX Product Directive 94/9/EG. It works without any delay or negative impact caused by counter pressure or pressure variations. Top and bottom section of the valve body are connected by a clamp ring and two bolts. Maintenance is easy and does not call for special tooling.