PSG Perfect Sample Gas

SUN-Control Analytik®
Produkte für die Gasanalysentechnik

Water-Trap with extra fine particle filter

WT 20.5

Application

The WT 20.5 water trap is installed in the sampling system directly upstream of the gas analyser. It reliably protects the analyser from condensate and fine dust even in case of failure of upstream components such as coolers, pumps or filters. When filled it interrupts the gas flow and provides an alarm signal via the upstream flowmeter. Typical applications include emission monitoring of fossil and renewable fuels, biogas plants, process and ambient air monitoring as well as industrial use in cement, glass, steel and paper plants and in engine monitoring.

Technology

The WT 20.5 uses a semipermeable **SUN-C membrane®** that separates gases from liquids and particles. It reliably retains condensate and dust while allowing undisturbed gas flow. The housing is made of chemically resistant material and features a compact design that can be easily integrated into existing systems. The unit is tested for high leak tightness and certified for use in explosive atmospheres.

Functions

The water trap provides several protective functions within the measurement system. It acts as the final safeguard before the analyser and prevents condensate or dust particles from reaching the measurement cell. Once the membrane is saturated the gas flow is securely shut off and an alarm is generated through the upstream flowmeter. This ensures protection of the analyser and reliable operation of the measurement. The tested and certified design adds an additional level of safety for use in demanding environments.

- ✔ Protection against condensate and dust
- ✔ Ex II 2G Ex h IIB Gb
- ✔ ATEX approved for Zone 1 and 2
- ✔ Automatic shut-off when saturated
- ✔ Robust and chemically resistant materials
- ✔ Compact design for easy integration
- ✔ Low pressure drop during operation
- ✔ Membrane as final safeguard before analyser
- ✔ Leak tightness tested for high safety
- ✔ Long service life with low maintenance

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AGT-PSG GmbH | Hajo-Rüter-Str. 23 | D-65239 Hochheim am Main
Phone +49 6146-8329110 | info@perfectsamplegas.de

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Technical Data

Model		
Type		WT 20.5
Scope of Delivery		Water-Trap, connection adapters (option), 2x assembly bracket for wall mounting (option)
Operating		
Water Pressure Membrane	bar	0 - 2
Operating Pressure for Gas	bar	0 - 2
Gas Flow	l air/h	100
Pressure drop at 100 l air/h	mbar	approx. 10
Pressure drop at 400 l air/h	mbar	approx. 40
Operating Temperatures		0°C - +90°C
Design Data		
Diaphragm Pore Size	µm	< 0.1
Effective Filter Area	cm²	25
Housing Volume	ml	5
Materials		PTFE, PP, assembly bracket made of stainless steel 1.4301 (option)
Dimensions		Diameter 70 mm, length 120 mm
Gas Connections		▪ on both sides 1/8“ NPT outside thread ▪ on both sides 6 mm pipe nozzle ▪ on both sides 6-12 mm stepped hose barb
Assembly		Mounting in the existing piping
Certification and Compliance		
Gas Explosion Proof ATEX		Ex: II 2G Ex h IIB Gb -10°C ≤ Ta ≤ +90°C attestation EPS 19 ATEX 2 177 U
Helium Leakage Test		2 x 10^{-8} mbar l/s
Certificates/Attestations		certificate of conformity ATEX 2014/34/EU, Helium leakage test attestation

Note

- 1 Inch = 2,54 cm

For operation in potentially explosive ambience

- The products can be used in explosive ambience of Zone 1 and Zone 2.
- Allowed the explosion classes IIA and IIB
- The products have no self-heating during intended operation and can be used in dependency of the maximum permissible media temperature for gases of the temperature class T6

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Options for Water-Trap WT 20.5

			
WT 20.5 S with stepped hose barb **Part No. 30001136**	WT 20.5 N with 1/8“ NPT thread **Part No. 30001117**	WT 20.5 R with 6 mm pipe nozzle **Part No. 30000885**	Connection adapter for 1/8“ NPT thread on 6/4 mm hose **Part No. 30001118**
			
Connection adapter for 6 mm pipe connection on 6/4 mm hose **Part No. 30001115**	Assembly brackets for wall mounting **Part No. 30001116**		

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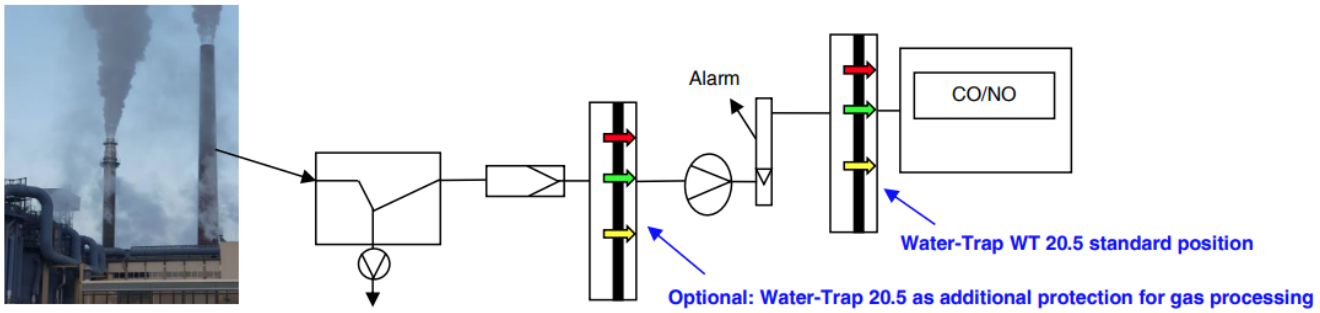
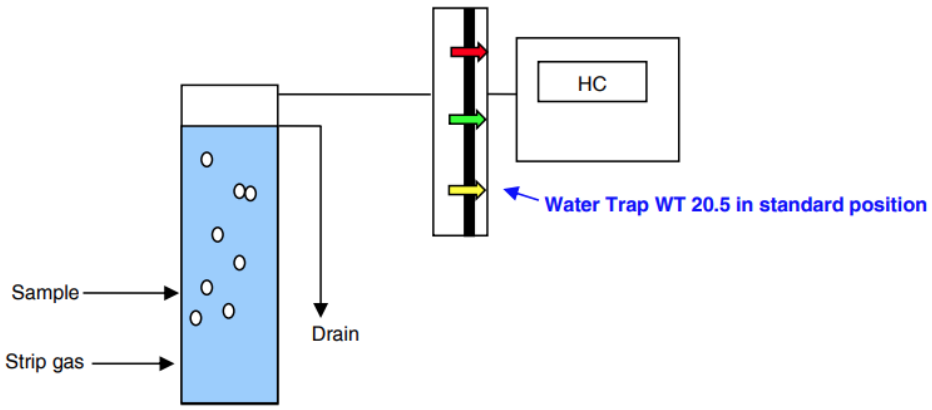
Sample Application 1: Flue Gas Analysis



Advantage:
The analyser is protected in case of failure of the cooling system (cooler, peristaltic pump).
Another Water-Trap can be used for protecting the gas processing.

Sample Application 2: Strip Systems



Advantage: In case of a clogged flow, the HC-FID is protected from harmful water

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