



APPLICATION REPORT Machinery & Apparatus

Custody transfer liquid shipping container filling

S T O R Z GMBH
ELEKTROTECHNIK

- Equipment for a mobile measuring system for a zinc-chloride solution using mass flow measurement
- Mass flow measurement according to MID MI-005
- Space saving installation using a straight tube meter

1. Background

STORZ GMBH ELEKTROTECHNIK based in Brühl, Germany, specialises in building mobile measuring systems. This also includes metering systems with their own electronics, developed by the family company for clients in many industries.

2. Measurement requirements

For a chemical industry customer STORZ designed a mobile measuring system. The custody transfer system had to be designed to fill various sized tanks with zinc-chloride solution and similar liquids. A suitable flow measurement was the key element of this filling plant.

STORZ needed an appropriate instrumentation, which had to be chemically resistant and meet the system measurement requirements according to MI-005. The suitable flowmeter must be able to handle a fast product exchange as well as be part of a completely drainable system. Due to the compact design of the mobile skid only a space saving, compact-device would be suitable.

Mobile measuring system	
Medium	Zinc-chloride solution
Measuring range	2.0 t/h...20 t/h
Minimum measured quantity	200 kg / 441 lb
Temperature	+10...+40°C / +50...+104°F
Pressure	2 barg / 29 psig



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Thorne & Derrick
+44 (0) 191 410 4292
www.heatingandprocess.com

KROHNE

3. KROHNE solution

KROHNE provided the Coriolis mass flowmeter OPTIMASS 7300 C. The device has a compact design with a single straight tube. The application specifications ask for a titanium measuring tube (DN25 / 1").

The OPTIMASS 7300 C met all the requirements for an approved measurement system for liquids other than water. The measuring range of the mass flowmeter meets the requirements of the highest accuracy class of 0.3 according to OIML.



Mobile measuring system with the OPTIMASS 7300 C

4. Customer benefits

The OPTIMASS 7300 C complies with all custody transfer metering requirements according to OIML R117 and MI-005. The exceptional linearity of the mass flowmeter as well as the high measurement accuracy provides incomparable performance measurement and reduced installation costs for CT systems.

The single tube design of OPTIMASS 7300 C is highly suitable for installation in this mobile measuring system. It is easy to clean and immune to fluid properties, and therefore suitable for applications with a fast product changeover. Space saving installation is achieved, which is impossible with a bent tube meter due to the construction of the mobile measuring system.

5. Product used

OPTIMASS 7300 C

- Coriolis mass flowmeter for liquids and gases
- Highest accuracy for CT (MID 2004/22/EC MI-005)
- Flow rates up to 430,000 kg/h / 15,800 lb/min
- Best in class for zero stability
- Tubes available in 4 materials (Stainless steel, Titanium, Hastelloy, Tantalum)
- Modular electronics concept
- Optional heating jacket
- OIML R117, MI-005, Inmetro, NTEP
- ATEX, FM, CSA, NEPSI, IECEx etc.
- HART®, FOUNDATION™ Fieldbus, Profibus PA



Contact



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