

Countum Group

SATAM

Metering Solutions

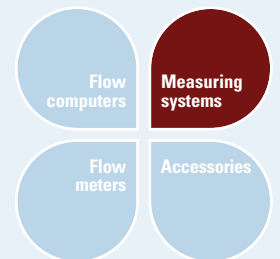


Metering systems for platform supply vessel

Metering solutions for fuels, water, chemicals and liquid mud

The Satam « Supply Vessel Metering Systems » product range is designed for accurate and reliable volume and mass metering of any liquids supplied to offshore platforms and drilling rigs such as fuel, water and chemicals used for the drilling process. Waste products and chemicals returned to shore for proper recycling can also be measured during the vessel loading operation.

Available with PD meters, electromagnetic flowmeters and Coriolis mass flowmeters, Satam metering systems for supply vessel offer flexible design for customized metering applications.



Areas of applications

Delivery of bulk liquid products to/from offshore platforms and drilling rigs

Fuel consumption on-board ships

Volume and mass measurements of:

- Fuel oil
- Drill water
- Fresh water
- Liquid mud (water based and oil based)
- Brine
- Base oil
- Methanol
- Slop
- Glycol
- Recovery oils...

Key points

Metering

- Volume measurement with positive displacement meter or electromagnetic flow meter
- Direct measurement of mass with Coriolis mass flow meter

Modular design

- Wide range of meters and accessories
- Modular design according to the customer need

Compact

- Easy to install on compact pipeline assemblies
- Reduced installation costs

Proven measurement technologies

Positive displacement meter:

Its simple design with blades and moving rotor makes it exceptionally robust and reliable for fuels measurements applications.

- **Low maintenance costs**

Simple and proven design with mechanical components interchangeable between the different models.

- **Stability of measurements**

Accuracy of measurement guaranteed over a period of many years without any drift in the calibration curve.

- **Compact and robust construction**

Flowmeter manifold is separated from measurement chamber to eliminate any possible influence of external mechanical stresses on measurement accuracy.

Coriolis mass flowmeter

The Satam mass flowmeter is designed to measure mass and density of viscous products such as heavy fuel oil, engine oil, bitumen or crude oil. Its wide measuring range and its accurate measurement make it ideal for loading or unloading applications.

Electromagnetic flowmeter

The Satam electromagnetic flowmeter is designed to measure water based products such as waste water, liquid mud and high solid content sludge. Thanks to their measuring principle based on Faraday's formula, the measuring tube is generally at the same diameter as the upstream and downstream pipes generating very few pressure drop.

Technical data - Metering Systems for supply vessel

Application		Measurements of liquids supplied to offshore platforms			
Flow meter		PD meter	Electromagnetic flow meter	Mass flow meter	
Flow rate		1 to 330 m ³ /h	1 to 500 m ³ /h	1 to 460 t/h	
		20 to 5500 L/mn	16.5 to 8330 L/mn	16.5 to 7660 kg/mn	
		5 to 1450 USGPM	5 to 2200 USGPM	-	
Description		Positive displacement meter with freely-moving blades	Electromagnetic induction flowmeter with internal insulating liner	Coriolis flowmeter with dual U-tube	
Measuring accuracy of measured value		0.15 %	0.25 %	0.15 %	
Measured liquids					
Fuel oil		●		●	
Drill water			●	○	
Fresh water			●	○	
Liquid mud (water based)			●	○	
Liquid mud (oil based)				●	
Recovery oils				●	
Brine			●	○	
Base oil		●		●	
Methanol		●		●	
Slop				●	
Glycol			●	●	
Chemicals		○	●	○	
Equipment Gas separator		Use to define according to the up-stream hydraulic conditions Not necessary if the up-steam pipe is in charge			
Strainer		Y or T-strainer	Not necessary		
Model		ZC17	MAG3100	MAG5100	
			MFMU		
Wetted materials		Ductile iron, nickel steel, aluminum, graphite	Lining		
			Linatex or PTFE	Neoprene or Hard rubber	316L
			Electrodes: Hastelloy C276		
Pulse transmitter		Option	Standard		
Flow register Mechanical		VR7887	-		
Electronic		Corrected volume and mass calculation, secure data archiving, relay outputs, open collector outputs, control of valves and pump, RS485 Modbus for communication with cargo management system.			
Measured and calculated parameters		Actual volume Corrected volume* mass*	Actual volume Corrected volume* mass*	Mass, density temperature Corrected volume*	
Operating conditions					
Pressure Maximum		10 bar	40 bar		
Temperature ambient		-40 to +55 °C	-20 to +60 °C		
Liquid		-10 to +80 °C	-20 to +70 °C	-10 to +70 °C	
Installation Ex approval		II 2 G	-	II 2 G	
Protection class		IP67 equivalent to NEMA4X & NEMA 6	IP67 equivalent to NEMA4X & NEMA 6		
Custody transfer		OIML R117-1	OIML R49		
Power supply		115VAC / 230VAC, 50 / 60 Hz or 24 VDC Not requested for PD meter with mechanical register and pulse transmitter			

● : Ideally suited ○ : Suitable subject to certain conditions *Only with electronic flow register and additional temperature probe

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