

Countum Group

SATAM

Metering Solutions



Helical turbine meter

Turbine ZT

The Satam turbine meter ZT is primarily used for volumic metering of low viscosities petroleum products. Its compact measuring tube with built-in flow conditioner allows an easy installation in horizontal or vertical position without the need for any straight inlet or outlet piping. Its compact and multifunctional flow computer Equalis S meets all the requirements of liquid petroleum products delivery market for safety, reliability and performances.

Flow computers

Measuring systems

Flow meters

Accessories

Sectors of application

- **Oil depots**
Products reception and loading bays of tank-trucks, rail cars and ships.
- **Aircrafts refueling**
Metering on-board aircraft refuelers, hydrant dispensers and hydrant carts.
- **Liquid hydrocarbons transportation by pipeline**
Metering of light petroleum products.
- **Marine**
Filling of fuel tanks.
- **Refinery**
Internal metering and flow control of production processes.

ZT features and benefits

- **Rotor**
Aluminum helical rotor for optimized performances.
- **Flow conditioner**
Flow straightner module integrated into the meter body for an optimum volume accuracy measurement.
- **Measuring cartridge**
Interchangeable measuring cartridge supplied with factory calibration certificate.

Equalis S features and benefits

Compact design for easy installation
Because of its single box concept, Equalis S field batch controller has a drastically reduced installation cost. Its compact design allows easy installation on tank trucks and compact assemblies.

User-friendly operations

Equalis S Man Machine Interface offers a direct and local access to pre-programmed functions such as volume preset, ticket printing, product selection...

Key points

- **Low installation costs**
No need for inlet and outlet straight lengths because of integrated flow conditioner.
No need for specific supporting because of a light and very compact measuring system.
- **Easy to maintain**
Measurement chamber removable and exchangeable to simplify maintenance operations and reduce installation downtime to a minimum.
- **Wide range of use**
Helical blade design for flow rate from 3 to 300 m³/h. and for single or multiviscosity application.
- **Custody transfer approved**
Approved for fiscal and commercial transactions according to international regulations (OIML R117-1 and MID 2004/22/EC).

Technical data - Helical turbine meter

Model	ZT	TLM 3-30	TLM 3-50	TLM 3-70	TLM 3-110	TLM 3-150	TLM 4-70	TLM 4-110	TLM 4-150	TLM 4-200	TLM 4-300
Application		Metering of liquid petroleum products									
Maximum flow rate	(m3/h)	30	50	70	110	150	70	110	150	200	300
	(L/min)	500	833	1166	1833	2500	1166	1833	2500	3333	5000
	(USGPM)	132	220	308	484	660	308	484	660	880	1320
Minimum flow rate	(m3/h)	3	5	7	11	15	7	11	15	20	30
	(L/min)	50	83	116	183	250	166	183	250	333	500
	(USGPM)	13	22	30	48	66	30	48	66	88	132
Pressure drop (bar@1mm²/s – max. flow)		0.2	0.48	0.2	0.5	0.9	0.2	0.5	0.9	0.55	1.2
Connections	DN	3"					4"				
	Flanges	ASA 150 RF – other flanges upon request									
Matérials	Meter body and flanges	Stainless steel									
	Rotor	Aluminum									
Operating conditions	Pressure	20 bar rel. max. (higher pressure upon request)									
	Viscosity	15 mm²/s (cSt) max.									
	Liquid temperature	-20°C to +80°C (standard) -10°C to +80°C (EC/MID)									
	Ambient temperature	-25°C to +55°C									
Internal construction	Rotor	Helical blade									
	Measurement cartridge	Removable and interchangeable, Factory calibrated									
	Pulsers	2 or 1 (option)									
	Preamplifiers	Included									
Associated flow computer		Equalis S									
	Functions	Display of measured and calculated data Calculation of base volume, mass, price Linearization of volume measurement Secured back-up of metrological data and transactions Management of automation and security functions									
	User interface	Display : Graphic screen, 240 x 128 pixels, backlight Volume resolution : 999999 points Numeric keyboard, pre-programmed pushbuttons, cycle start/stop pushbutton									
Metrological performances	Volume accuracy	≤ +/- 0.15% (single product application)									
	Repeatability	≤ +/- 0.02%									
Installation	Straight sections	Straight inlet and outlet sections not necessary									
	Flow straightner	Built-into the meter body									
	Protection class	IP66									
	ATEX certification	Zone 1 – II 2 G									
Custody transfer approval		Evaluation certificate EC/MID n°LNE-29691									
Dimensions and weight	Model ZT	TLM 3-30	TLM 3-50	TLM 3-70	TLM 3-110	TLM 3-150	TLM 4-70	TLM 4-110	TLM 4-150	TLM 4-200	TLM 4-300
	Distance between flanges (mm)	470					508				
	Weight (kg)	25	25	27	27	27	38	38	38	32	32
Flow computer Equalis S		Height x width x depth (mm) : 278 x 350 x 192 (without cable glands) Weight : 16 kg									

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