

# Continuous Flowmeter Spinner (CFSM)

The Continuous Flowmeter Spinner is run at the bottom of a PL tool string to monitor downhole fluid flow rates. Each model should be chosen to optimize the measurement and enable passage through completion restrictions.



## Description

The spinner is mounted on precision roller bearings and turns as fluid moves passed it, this rotation is converted to signal pulses by zero drag Hall-effect sensors. The pulses are then used to calculate flow rates and fluid direction (up or down flow); the flowmeter requires very little energy to initiate

motion and is ideal for low flow rate surveys. The design and mechanical construction of the spinner assembly have been optimized to cope with very fast flow, sand production and high viscosity liquids. Each model has a different size housing and impeller, and should be chosen to suit the well completion and flow regime.

## Features

- Flow profiling in complex well completions and flow regimes.
- Rugged spinner housing protects against debris.
- Injection monitoring.
- Surface read out or memory logging.
- Spinner ported shroud or open cage options available.
- Connects to either a Flowmeter Electronics (CFBE) or a Capacitance/Temperature/Flow tool (CTF).

## Specification

Model	1 <sup>3</sup> / <sub>8</sub> in CTF	1 <sup>11</sup> / <sub>16</sub> in CTF	1 <sup>11</sup> / <sub>16</sub> in std
Temperature rating	350°F (177°C)		
Pressure rating	15,000psi (103.4MPa)		
Shroud diameter	1 <sup>3</sup> / <sub>8</sub> in (35mm) 1 <sup>1</sup> / <sub>2</sub> in (38mm) 1 <sup>11</sup> / <sub>16</sub> in (43mm) 2 <sup>1</sup> / <sub>8</sub> in (54mm)	1 <sup>11</sup> / <sub>16</sub> in (43mm) 2 <sup>1</sup> / <sub>8</sub> in (54mm) 3 <sup>1</sup> / <sub>8</sub> in (79mm)	
Tool length <sup>a</sup>	8in (203mm)		
Tool weight <sup>a</sup>	1.7lbs (0.77kg)		
Sensor measure point (from the bottom of the tool)	2.5in (64mm)		
Minimum restriction	Shroud OD+1/8in (+3mm)		
Output	10 pulses/rev (directional)		
Spinner threshold	5ft/min (0.03m/s)		
Max fluid velocity <sup>a</sup>	>2500ft/min (12.7m/s)		
Materials	Corrosion resistant throughout		

a) Depends on CFMS Model.