



FPS2800B12C4

Oil Property Sensor

- Fully integrated, stand-alone module sensor and processing electronics
- Accurate, repeatable temperature, viscosity, density and dielectric constant
- Factory calibrated with NIST traceable fluids
- Digital output based on J1939, CAN2.0B standard featuring high-resolution parameter readings

Description

The FPS2800B12C4 is an oil property sensor that will directly and simultaneously measure the viscosity, density, dielectric constant and temperature of low conductivity fluids. Relying on tuning fork technology, the sensor monitors multiple physical properties that enables the OEM to determine the quality, condition and contaminant loading of fluids such as engine oil, transmission, hydraulic and gear oils. The multi-parametric analysis capability improves fluid characterization algorithms. The FPS provides in-line monitoring of fluids for a wide range of OEM and aftermarket installations including fluid reservoirs, process lines and pressurized high flow conduits (e.g., engine oil gallery) for applications that include on and off highway vehicles, HVAC&R, compressors, industrial equipment and turbines. A universal digital CAN J1939 based protocol provides easy to connect interface to main host controller. A simple four pins connector allows for cost effective mounting options.

Features

- Rugged construction for high pressure and high flow environments
- On-board microprocessor for real-time data analysis with 12-24 volts supply
- Highly reliable and long term stability

Applications

- Engine, transmission and hydraulic oils for on and off-highway vehicles

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Datasheet

Ordering Information

Description	Part Number
FPS2800B12C4	FPP800A110

Specifications

Maximum Ratings

Ratings	Symbol	Value
Supply voltage (peak) (note 1)	Vcc	60 Vdc
Inrush current @12V (note 2)	I _{max}	2A ATO or minifuse
Ambient operating temperature (electronics) (note 3)	T _e	-40 to +125 °C
Ambient operating temperature (fluid) (note 3)	T _f	-40 to +125 °C
Storage temperature (note 4)	T _{stg}	-50 to +150 °C
Operating pressure (note 5)	P	25 Bars
Vibration (peak) (note 1)		20 Grms

Note 1: Peak conditions: less than 10% of the operating time.

Note 2: Inrush current depend on the installation. Please contact TE for more information.

Note 3: Ambient Operating Temperature: Service temperature range at which the sensor and its electronics can operate securely.

Note 4: Storage Temperature: Temperature range at which the sensor can be stored with no risk of damage.

Note 5: Elevated pressure ratings are available. Please contact TE for more information

Metrological Characteristics

(@V_{cc}=12Vdc, T=100°C, for a Cannon Instrument S60 fluid, unless otherwise noted)

Multi-parametric measurement range	Symbol	Minimum	Typical	Maximum	Unit
Viscosity (dynamic)	η	0.5	15	50	mPa-s (cP)
Viscosity (dynamic) Accuracy for viscosity > 10cP		-5	+/- 2	+5	% value
Viscosity (dynamic) Accuracy for viscosity < 10cP			+/- 0.2		cP
Density	ρ	0.65	0.85	1.5	gm/cc
Density Accuracy		-3	+/- 1	+3	% value
Dielectric constant	ε	1	2	6	
Dielectric constant Accuracy		-3	+/- 1	+3	% value
Fluid temperature	T	-40		150	°C
Temperature Accuracy			2		°C