

Ultima Sensor Array

Simultaneously Measures Flow, Pressure and Temperature



- Four flow ranges
- Turbine flow measurement
- Standard magnetic pick-up with frequency output for flow rate
- 4-20 mA output for temperature and pressure
- Pressures up to 5800 PSI (400 Bar)
- Temperatures up to 300 °F (150 °C)
- Available with SAE or BSPP ports
- Flow accuracy $\pm 1\%$ of full scale
- Repeatability $\pm 0.2\%$

The Ultima Sensor Array provides flow, temperature and pressure signals in a compact unit that requires only one hydraulic line break. The magnetic pick-up generates a frequency output for flow rate measurement while the pressure and temperature sensors provide 4-20 mA output signals. The flow signals can be transmitted to Flo-tech's F6600/F6650 Series, and the temperature and pressure signals can be transmitted to the F6700/F6750 Series digital displays or any other instruments that accept a frequency or 4-20 mA signal.

Typical applications include fluid characteristic measurement on test stands, stationary hydraulic system monitoring, feedback for hydraulic system control, advance warning of impending component failure and mobile hydraulics system diagnosis.

SPECIFICATIONS

Performance

Forward Flow

Accuracy: $\pm 1\%$ of full scale
($\pm 1\%$ of rate when used with F6600/F6650 display)

Repeatability: $\pm 0.2\%$

Turbine Response: $\leq 200\text{ms}$

Temperature:

Fluid -4 to +300 °F (-20 to +150 °C)

Ambient -4 to +131 °F (-20 to +55 °C)

Operating Pressure: up to 5800 PSI (400 Bar) max

Pressure Drop: See ΔP charts on page 24

Readout Accuracy: ± 1 digit

Magnetic Pick-up:

Electrical Output

Signal

Self-generating alternating pulse
100 mV RMS (100 Hz) minimum

F6202 & F6222

10 mV RMS (200 Hz) minimum

Pressure Sensor:

(optional)

See page 26 for

complete specifications

Temperature Sensor:

(optional)

See page 27 for

complete specifications

Material

Housing:

6013-T651 Aluminum; anodized

Turbine Rotor:

T416 Stainless steel

Ball Bearings:

440C Stainless steel

Rotor Shaft:

T303 Stainless steel

Rotor Supports:

F6202 & F6222

6061-T6 Aluminum alloy

Hub Cones:

F6204, F6206, F6208,

F6224, F6226 & F6228 only

CA360 Brass

6061-T6 Aluminum alloy

Adapters:

6061-T6 Aluminum; anodized

Retaining Rings:

6061-T6 Aluminum alloy

Seals:

Buna N standard;

Viton® and EPR optional

Magnetic Pick-up:

Body

12L14 Steel; electroless nickel
plate

Nut

12L14 Steel; electroless nickel
plate

Ports:

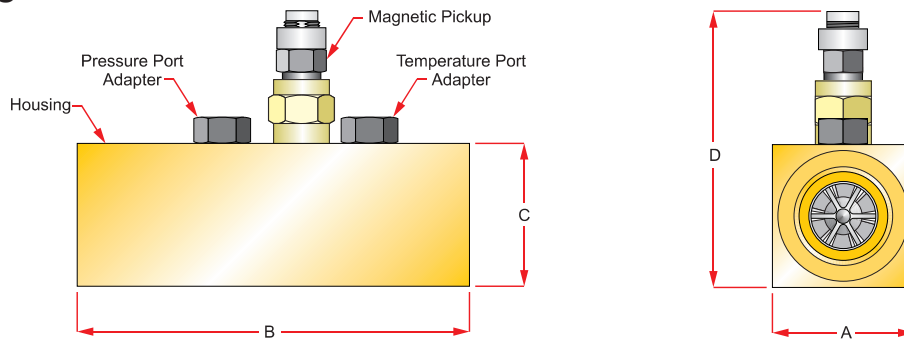
SAE J1926/1; ISO1179 (BSPP)

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Simultaneously Measures Flow, Pressure and Temperature

DIMENSIONS



MODEL	A WIDTH IN (mm)	B LENGTH IN (mm)	C HEIGHT IN (mm)	D w/MAG IN (mm)	WEIGHT LBS (KG)
F6202-F / F6222-F	1.23 (31.2)	4.72 (120.0)	1.47 (37.3)	3.72 (94.5)	1.55 (0.70)
F6204-F / F6224-F	1.48 (37.6)	5.08 (129.0)	1.80 (45.7)	4.05 (102.9)	1.75 (0.79)
F6206-F / F6226-F	1.98 (50.3)	5.87 (149.0)	2.20 (56.0)	4.46 (113.3)	2.75 (1.25)
F6208-F / F6228-F	2.46 (62.5)	6.81 (173.0)	2.48 (63.0)	4.75 (120.7)	4.10 (1.86)

ORDERING INFORMATION

NOMINAL PORT SIZE	FLOW RANGE	MODEL NUMBER	SEALS	TEMPERATURE	PRESSURE
SAE 8	0.4 - 7 GPM	F6202-F ¹	B Buna N V Viton® E EPR	T with Sensor N 1/4 NPTF (F) Plugged S SAE 2 (J514) Plugged G G 1/4 (F) Plugged D SAE 4 Plugged	1 1000 PSI (69 Bar) Sensor 3 3000 PSI (207 Bar) Sensor 5 5000 PSI (345 Bar) Sensor 6 6000 PSI (414 Bar) Sensor ² N 1/4 NPTF (F) Plugged S SAE 2 (J514) Plugged F G 1/4 (F) Plugged
SAE 12	2 - 40 GPM	F6204-F			
SAE 16	4 - 80 GPM	F6206-F			
SAE 20	8 - 160 GPM	F6208-F			
G 1/4	1.5 - 26 LPM	F6222-F ¹			
G 3/4	7.5 - 151 LPM	F6224-F			
G 1	15 - 302 LPM	F6226-F			
G 1-1/4	30 - 605 LPM	F6228-F			

¹ F6202-F and F6222-F require K-Factor Scaler, F5140 (see page 25), to amplify frequency signal to be compatible with Flo-tech's F6600/F6650 Digital Displays.

Examples:

F6204-FB-T6 = SAE 12 ports
 2 - 40 GPM flow range
 4-20 mA output
 Buna N seals
 Temperature sensor
 6000 PSI (414 Bar) pressure sensor

F6228-FV-G5 = G 1-1/4 ports
 30 - 605 LPM flow range
 0-5 VDC output
 Viton® seals
 G 1/4 (F) plugged temp port
 5000 PSI (345 Bar) pressure sensor

ACCESSORIES

MODEL NUMBER	DESCRIPTION
F001109	5-Point Calibration Certificate ³
F001110	10-Point Calibration Certificate ³

³ Certificates are traceable to NIST, ISO 9001.

For information about	Refer to
Digital Displays	Form No. 549
Pressure Sensors	Page 26
Temperature Sensor	Page 27
Cables	Pages 28 & 29

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TRACEABLE TO NIST STANDARDS

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