FLE-1000

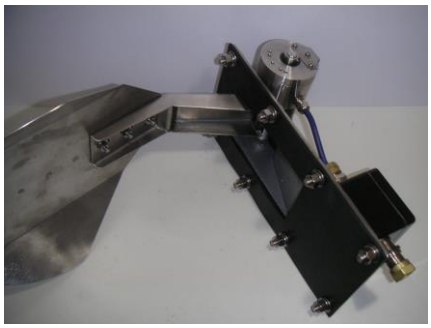
Flow Level Encoder

INFORMATION SHEET

Description

The FLE-1000 is the world's first flow line sensor that uses Encoder technology. The sensitivity and accuracy achieved (1/12th of a degree) are unprecedented.

To maintain compatibility and exchangeability with conventional flow line sensors, an analog to digital converter and intrinsically-safe circuitry are built into the sensor so that it becomes a loop-powered (2-wire) 4-20 mA sensor



Specifications

Models
SP08-004/AM1

Application
Indirect indication of flow rate by measurement of angular displacement of the paddle due to pipe or trough fluid level

Implementation
High resolution absolute encoder (Phase A and B). Built-in decoding circuit and analog to digital converter

Precision
10-bits over 90 degrees
LSB = 0.087890625 degree
11.4 increments / degree
0.1778 mA / degree

Repeatability
2x LSB = 0.176 degrees

Power Requirement
18-32V, loop-powered I.S.

Outputs
4-20 mA

Operating Temperature
-20 to 60°C (-4 to 140°F)

Permissible Humidity
Up to 98%

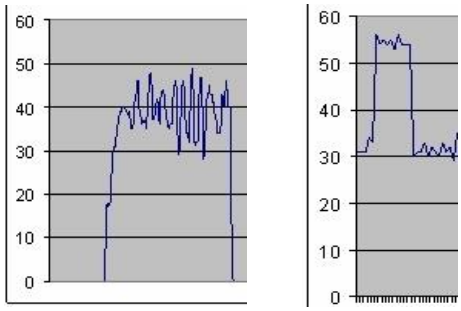
Shock Resistance
10 g (6 msec)

Vibration Absorption
5 g (500 Hz)

Approvals / Certification
IP 67 M
II 1G EEx ia IIB T4
I M1 EEx ia I
SIRA 01 ATEX 2189

Features

- Fully stainless steel construction for the entire system, including the encoder, shaft, bearings, and main body.
- Digital detection makes repeatability unmatched by any analog resistive sensor. It makes the FLE-1000 suitable for well kick detection.
- At least 6 times more precise than the best potentiometer-based flow level sensor[1]



Potentiometer- 19% jitter(swing) *Encoder- 3% jitter (swing)*

- Encoder outputs (Phase A, B, Index O) available as option[2]
- Flow line Sensor is certified intrinsically safe[3]
- Stainless Steel splash guard and protector cover available as option.
- EExe (extended safety) polycarbonate junction box, the most durable enclosure type for I.S. connection

NOTES: **1** – readings taken from actual field test in a jack-up rig with open flowline trough; the turbulent flow of drilling fluid, together with persistent background vibration of the entire pipe cause unwanted jittering - the encoder-based flowline with non-contact optical (digital) sensing is less affected compared to the analog swiping potentiometer-type sensor; **2 -** on the potentiometer-type encoder this will make the sensor either 6-wire or 8-wire but retains I.S. certification. **3** - requires an isolation barrier (also available from Absmart).