DATUM P871

Submersible Level Sensor

Specification DataFile

- **Wide range of sensors**
  - extends the scope of application

- **Stainless steel construction**
  - resistant to chemical attack

- **All sensors calibrated with standard outputs**
  - easy to change without the need for recalibration

- **Ranges from 5m to 250m available**
  - level measurement for reservoirs, tanks and boreholes

- **All sensors have inbuilt temperature compensation**
  - reduces thermal drift errors

- **Inbuilt transient protection**
  - limits effect of lightning damage

Hydrostatic pressure sensors for the measurement of depth/level in boreholes, reservoirs and storage tanks

ABB
Introduction
DATUM P871 Series is a range of submersible hydrostatic level sensors designed primarily for use with ABB’s DATUM level systems.

The P871 is a loop-powered, 4 to 20mA output sensor for use with a DATUM L150/L160 Indicator or as the primary input device to other control and recording loops.

DATUM P871 Loop-powered

Submersible Level Sensor
The DATUM P871 sensor, with its all-stainless steel construction and small overall diameter of 27.2mm (1.07 in.), is ideally suited for installation on older or more compact boreholes.

The cable includes an integral stainless steel suspension membrane for easy installation.

The DATUM P871 is loop-powered via a 7 to 35V d.c. supply, giving a 4 to 20mA signal proportional to the sensor full range.

Typical Application

AC/DC Power Options

P871 Level Sensor Submersible

L160 Indicator

L150 Indicator
Specification

P871 Loop-Powered Submersible Level Sensor

Ranges
Spans from 0 to 5m up to 0 to 250m (0 to 24.7 ft. up to 0 to 829 ft.)

Maximum overrange
2 times rated pressure when applied for 3 minutes does not cause a zero shift in excess of 0.5% span

Fatigue life
Designed for 100 million cycles zero to span pressure

Reference performance
Reference conditions – ambient temperature 25°C (77°F)

Base accuracy
Zero: 4mA ± 0.16mA
Span: 16mA ± 0.16mA
(Typical error band ±0.25%)

Long term drift
< 0.2% span/annum

Electrical
2-wire loop-powered
4 to 20mA output proportional to span
Fitted with reverse polarity protection

Supply voltage
7 to 35V d.c.

Max. load
Ω = 50 x (Supply voltage - 7)

Mechanical

Dimensions
27.2mm (1.07 in.) diameter
103mm max. (4.06 in. max.) length
(including Nosecone)
Process connection
G3/4 internal thread to BS2779 compatible with ISO 228.
Fitted with Nosecone

Weight
0.2kg (0.44 lb) (without cable)

Material of Construction
Main body tube 316/321 stainless steel
Process port 17-4PH stainless steel
Sensor diaphragm 17-4PH stainless steel
Nose cone Acetyl
Cable 2-wire screened with integral suspension cable and vent tube. Material – polythene

Environmental

Operating temperature range -40° to +125°C
(-4° to 250°F)
Compensated temperature range -20° to +80°C
(-4° to 176°F)
Operating cable temperature -20° to +55°C
(-4° to 131°F)
Storage temperature -25° to +85°C
(-13° to 185°F)
Zero temperature coefficient ±0.02% FS/°C
(±0.011% FS/°F)
Span temperature coefficient ±0.02% FS/°C
(±0.011% FS/°F)
Vibration 35g peak sinusoidal, 5Hz to 2kHz

Enclosure IP68 to 200m (392 ft.)
max. temperature 50°C (122°F)

Ordering Information

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