

# Interface Liquid-Level Sensors

## Model SMS2000



**Product Data Sheet**  
**SMS2000-001-1, Rev B**  
**July 2024**

### FEATURES

- 4 to 20mA Analog Outputs with HART
- Dual Channel Analog Output
- 2 in 1 measurement
  - Interface
  - Temperature
- No scheduled Maintenance or Recalibration
- Good Accuracy and Repeatability
- Intrinsically Safe
- Effective on applications with High Solids, Fouling and Fast Changing Levels
- No loss of level signal

### MARKETS

- Pulp and Paper
- Mining
- Water and Waste Water
- Municipal

### PRODUCT OVERVIEW

The liquid interface measurement is detected by the use of a transmitter, flexible/rigid stainless steel sensor hose and interface float. The end of the sensor hose is supported by a weighted anchor or stop plate at the opposite end. Traveling up and down the sensor hose is a specially engineered float that follows the two liquids particular interface. As the float position changes along the sensor hose it closes very small reed contacts within its magnetic field through the wall of the flexible sensor hose. The closed reed switches provide an uninterrupted measurement voltage from a resistance chain (a potential divider) to the transmitter and this voltage is proportional to the liquid interface level. This variable voltage is then converted into a standard 4-20mA analog level signal. The interface float has the ability to be accurately adjusted to provide the needed buoyancy, based on calculations and the customer's process data.

The SMS2000 interface system is modular in design, can be installed with the process in operation, offers a selection of electronic housing styles, multiple outputs and sensor hose lengths. The interface system features a removable sensing element and electronics that can be removed without disturbing the operation of your process saving time and money.

Up to two 4-20mA loops are available for analog indication of interface and temperature. Set-up, calibration and diagnostics are available from any point on the loop using a standard HART hand-held terminal.



**Model SMS2000 Flexible Transmitter**  
**Single Cavity Housing**

## PRODUCT SPECIFICATIONS

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### Parameter Specifications

#### LEVEL OUTPUT

Measured Variable:	Product Level and/or Interface level
Output Signal:	4 to 20mA with HART, 2-wire powered
Order Length:	Flexible hose: 3000mm (120") to 24,000mm (960")
Accuracy/Resolution:	25mm (+-1")
Flex. Sensor Float Guide:	Flexible Corrugated Braided Hose – 25mm (1.0")
Response Time:	0.8 second

#### TEMPERATURE OUTPUT

Measured Variable:	Single Point Temperature - 100 ohm platinum RTD
Output Signal:	4 to 20mA with HART
Accuracy:	±0.16 °C (± 0.28 °F)

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#### INTERFACE LEVEL FLOAT

Material:	304L Stainless Steel
Shape:	Round
Sizes:	375mm (15") outside diameter.
Through Hole Diameter:	50mm (2")
Specific Gravity Adjustable:	Yes, ± 0.01 S.G., smooth finish, 5 gram accuracy, thermal expansion corrected.

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#### ELECTRONICS

Input Voltage:	10 to 42VDC (10 to 30VDC – Explosion Proof)
Type:	4 to 20mA
Fail Safe:	High (21.4mA), or Low (3.8mA)
Reverse polarity protection:	Yes

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#### CALIBRATION

Zero Adjustment range:	Anywhere within the active length
Span Adjustment range:	Anywhere within the active length

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#### ENVIRONMENTAL

Enclosure Rating:	Nema 4X
Humidity:	5-95%, relative humidity.
Operating Temperatures:	<b>Electronics:</b> -40 °C (-40 °F) to 84 °C (183 °F) <b>Sensing Element:</b> -40 °C (-40 °F) to 125 °C (257 °F) <b>Temperature Element:</b> -200 °C (-328 °F) to 250 °C (482 °F)
Materials:	Wetted parts: 316L and 304 Stainless Steel Non-Wetted parts: 316L stainless steel and epoxy coated aluminum.

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#### VESSEL MOUNTING

Rigid & Flexible:	2" Flange ANSI, (Metric sizes available upon request)
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#### ELECTRICAL CONNECTIONS

Nema Type 4X, I.S.	½" conduit opening. (Metric sizes available upon request)
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#### APPROVALS

CSA, FM, CE, UL & ATEX, Exp. Class 1 Div II

## ORDERING INFORMATION

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<b>TRANSMITTER MODEL</b>	_____	= SMS2000 (1)
SMS2000	=	Interface Transmitter
<b>INPUT POWER</b>	_____	= H (2)
H	=	24VDC Loop, Hart
<b>HOUSING TYPE</b>	_____	= A (3)
A	=	Nema Type 4X, 316L stainless steel, One (1) conduit outlet
B	=	Nema Type 4X, Epoxy Coated Aluminum, One (1) conduit outlet
<b>ELECTRONICS MOUNTING</b>	_____	= 1 (4)
1	=	Integral Electronics
<b>SENSOR HOSE TYPE</b>	_____	= F (5)
F	=	Flexible Braided Corrugated Hose, 304SS Stainless Steel - 25mm (1") diameter
<b>SENSOR HOSE LENGTH</b>	_____	= XXX (6)
XXX	=	Specify Sensor Hose measurement length in inches. (See Illustration 1.0 - PAGE 4)
<b>SENSOR RESOLUTION</b>	_____	= 10 (7)
10	=	25mm (1")
<b>VESSEL MOUNTING</b>	_____	= AA (8)
AA	=	2" Flange, ANSI 150#
<b>TEMPERATURE SENSOR</b>	_____	= X (9)
X	=	No Temperature Measurement
T1	=	100 ohm Platinum RTD sensor c/w 2-wire 24VDC Transmitter, Hart communication
<b>INTERFACE FLOAT</b>	_____	= F1 (10)
F1	=	375mm (15") diameter round float
<b>FLOAT FINISH</b>	_____	= BF (11)
BF	=	Basic Finish
<b>ANCHOR</b>	_____	= 01 (12)
01	=	100mm (4") diameter - round, 150mm (6") tall carbon steel
02	=	100mm (4") diameter - round, 150mm (6") tall stainless steel
<b>DOCUMENTATION</b>	_____	= SMCD (13)
SMCD	=	Set-up software, operation manual and CD all Included free of charge.

**NOTE: FOR SPARE PARTS REQUEST - PLEASE CONTACT HEAD OFFICE.**

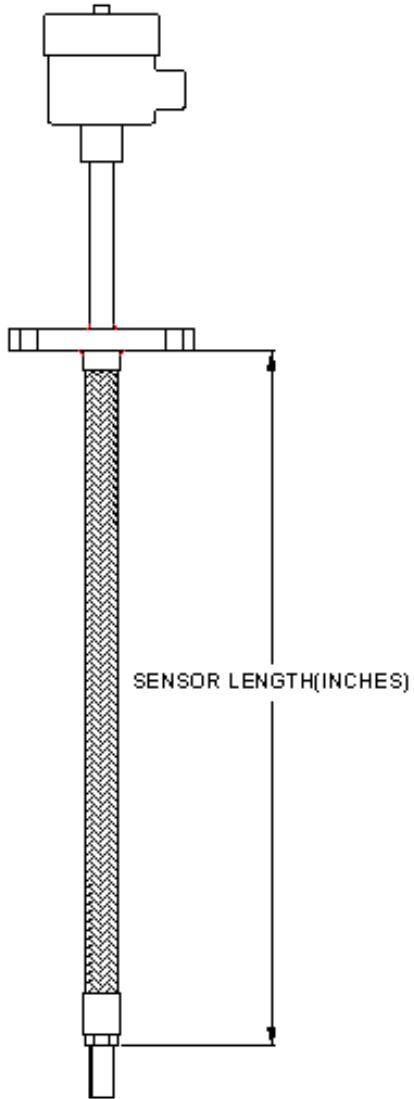
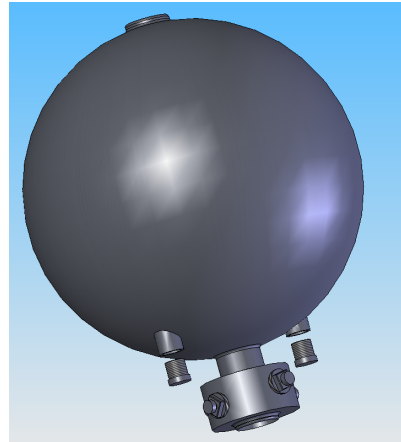


ILLUSTRATION 1.0



INTERFACE FLOAT DESIGN



SMS2000 SYSTEM READY FOR INSTALL



## **SALES REPRESENTATIVES**

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### **Sales & Engineering Head Office**

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