# **Mobrey 9700 Transmitter**

## **Submersible Hydrostatic Level Transmitters**



CE (SP

- Hydrostatic electronic level transmitters
- Factory sealed and tested for submersed duty
- 4–20 mA output signal proportional to level
- Flush mounted ceramic sensor
- Good long term stability
- Ideal for industrial or marine applications

- Wide range of mounting options
- Low cost installation
- Readouts for control room or plant mounting





## **Reliable Performance...In Challenging Applications**



# Mobrey 9700 Series transmitters

The 9700 Series range of tank level transmitters from Mobrey provide the measurement solution where in-tank problems such as foaming, vapor layers, and temperature gradients prohibit the use of other instrumentation.

The 9700 Series transmitter is designed to perform in the extreme conditions of today's industrial measurement applications.

Transmitters are available in both submersible and externally mounted (floodable) versions. Each transmitter version gives a high performance, has good long term stability, and is virtually maintenance free. A ceramic sensor ensures precise and reliable measurement with an accuracy of better than 0.1%.

### **Operation**

At the heart is a Ceramic Capacitive Sensor (CCS). This pressure sensor provides a "flush" diaphragm, avoiding the risks of sensor clogging and ensures an extremely low hysteresis, minimal output drift, and high repeatability.

The sensor is manufactured using an aluminium oxide ceramic and provides outstanding resistance to chemical attack. The measuring range is determined by the ceramic thickness, which is precisely controlled during the manufacturing process. The sensor works like a capacitor with electrode surfaces on the inside comprising one measuring and one reference capacitor.

The surfaces of the capacitors are gold-plated and linked to ASIC electronics. These electronics generate a signal proportional to the applied pressure, which is sent to the 4–20 mA signal conditioner.



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#### **Features**

- Two-wire 24 Vdc loop-powered
- 4 to 20 mA
- Accuracy ± 0.1% of calibrated span
- Ranges up to 200 m / 656 ft. H<sub>2</sub>0, and 10:1 rangeability
- Ceramic capacitive sensor
- Low maintenance
- Fully submersible IP68 / NEMA 6P
- Reverse polarity protection
- Dedicated marine version

#### **Benefits**

- Unaffected by difficult ullage conditions
- Stable readings under adverse conditions

### **Special features**

### Accuracy better than $\pm 0.1\%$ of calibrated span

The ceramic sensor is a "dry cell", meaning that no isolating diaphragm and fill fluid is needed. The process fluid acts directly onto the rugged, corrosion resistant sensor.

The 9700 Series provides an accuracy of better than  $\pm 0.1\%$  of calibrated span and good long term stability.

# Protected from aggressive environments/processes

The 9700 Series withstands the harshest of environments and processes. Its rugged ceramic sensor is inherently capable of withstanding attack from most chemicals.

### Glanding system

The glanding system used with the submersible versions ensures absolute integrity of the IP68 / NEMA 6P rating.

IP68 / NEMA 6P units are generally factory fitted with a length of vented cable.

#### **Mounting options**

The 9700 Series is available in various mounting configurations, all are rated IP68.

- 9710 Cable suspended
- 9720 Clamped, cable suspended
- 9780 Pole mounted
- 9790 Flanged

#### **Bellows**

For humid environments or sea water applications, bellows must be used (contact Rosemount Measurement for details).

## **Mobrey 9710 Hydrostatic Level Transmitter Ordering**

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 12 for more information on Material Selections.

#### Table 1. Mobrey 9710 ordering information

**★**The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Model	Product Description	
9710	Cable Suspended Submersible Hydrostatic Level Transmitter	
Version		
Standard		Standard
C	Commercial	*
M	Marine approval	*
Material o	· · · · · · · · · · · · · · · · · · ·	
Standard		Standard
S	Stainless steel 316	*
A	Aluminum bronze	*
	O-ring Material	
Standard	- ···· <b>3</b> ············	Standard
1	Fluorocarbon (FPM/FKM)	→ ★
2	Nitrile	*
∠ Nominal R		*
Standard	anye	Standard
	0. 656 (0. 2. )   0.	
A	0 to 6.5 ft. (0 to 2 m) H <sub>2</sub> 0 depth 0 to 16.4 ft. (0 to 5 m) H <sub>2</sub> 0 depth	*
B C	0 to 16.4 ft. (0 to 5 m) H <sub>2</sub> 0 depth	*
D	0 to 65.6 ft. (0 to 20 m) H <sub>2</sub> 0 depth	*
E	0 to 164 ft. (0 to 50 m) H <sub>2</sub> 0 depth	*
F	0 to 328 ft. (0 to 100 m) H <sub>2</sub> 0 depth	*
G	0 to 3.3 ft. (0 to 100 H) H <sub>2</sub> 0 depth	*
H	0 to 11.5 ft. (0 to 3.5 m) H <sub>2</sub> 0 depth	*
11	0 to 656 ft. (0 to 200 m) H <sub>2</sub> 0 depth	*
Zero and S		
Standard	μαιι	Standard
1	Integral /fived	→ tanuaru
Cable Mat	Integral (fixed)	*
	епа	St. J. J.
Standard		Standard
P	Polyurethane (5.5.8)	*
F	Fluorinated ethylene-propylene (F.E.P)	*
Cable Len	gth Units	
Standard		Standard
E	English	*
М	Metric	*
Cable Len	gth Metric / English	
Standard		Standard
003	3 meters M	*
005	5 meters M	*
008	8 meters M	*
010	10 meters M	*
020	20 meters M	*
030	30 meters / feet M / E	*
040	40 meters M	*

### Table 1. Mobrey 9710 ordering information

**★**The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

050	50 meters	M	*
060	60 meters	M	*
075	75 meters	M	*
100	100 meters	M	*
125	125 meters	M	*
150	150 meters / feet	M / E	*
200	200 meters	M	*
009	9 feet	E	*
015	15 feet	E	*
024	24 feet	E	*
060	60 feet	E	*
090	90 feet	E	*
120	120 feet	E	*
225	225 feet	E	*
300	300 feet	E	*
375	375 feet	E	*
450	450 feet	E	*
600	600 feet	E	*
Product Cer	ifications		
Standard			Standard
NA	Non-certified (non-hazardous area use only)		*
A6	CSA (Canada and USA)		*
Typical Mod	el Number: 9710 C S 1 A 1 P M 003 NA		

Custom Con	figuration	
Expanded		
C1	Custom configuration of actual range (customer to specify with order)	
Example Model Number: 9710 C S 1 A 1 P M 003 NA C1		

## **Mobrey 9720 Hydrostatic Level Transmitter Ordering**

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 12 for more information on Material Selections.

#### Table 2. Mobrey 9720 ordering information

**★**The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Version	Model	Product Description			
Version	9720	Clamped Cable Suspended Submersible Hydrostatic Level Transmitter			
Commercial         ★           M Marine approval         ★           Material of Sersors         Standard           S Stanless steel 316         ★           A Aluminum bronze         ★           Body Seal O-ring Material         Standard           1 Fluorocarbon (FPM/FKM)         ★           2 Nitrile         ★           Nominal Range         Standard           A Ot 0.6.5 ft. (0 to 2 m) H-y0 depth         ★           B Ot 0.6.4 ft. (0 to 5 m) H-y0 depth         ★           B Ot 0.6.4 ft. (0 to 2 m) H-y0 depth         ★           C Ot 0.5.2 ft. (0 to 2 m) H-y0 depth         ★           E Ot 0.5 ft. (0 to 2 m) H-y0 depth         ★           E Ot 0.5 ft. (0 to 2 m) H-y0 depth         ★           E Ot 0.5 ft. (0 to 2 m) H-y0 depth         ★           E Ot 0.5 ft. (0 to 10 m) H-y0 depth         ★           B Ot 0.5 ft. (0 to 10 m) H-y0 depth         ★           C Ot 0.5 gt. (0 to 10 m) H-y0 depth         ★           B Ot 0.5 ft. (0 to 20 m) H-y0 depth         ★           C Ot 0.5 gt. (0 to 20 m) H-y0 depth         ★           D Ot 0.5 ft. (0 to 20 m) H-y0 depth         ★           D Ot 0.5 ft. (0 to 20 m) H-y0 depth         ★           D Ot 0.5 ft. (0 to 20 m) H-y0 depth         ★ <td>Version</td> <td></td> <td></td> <td></td>	Version				
Material of Sensor         ★           Standard         Standard           5         Stainless steel 316         ★           A         Aluminum bronze         ★           Body Seal O-ring Material         Standard         Standard         Standard         \$ Nitrile         ★           Nominal Range         Standard         A 0 to 6.5 ft. (0 to 2 m) Hy0 depth         ★           A         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           B         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           C         0 to 32.8 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 10 m) Hy0 depth         ★           D         0 to 3.2 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 65.6 ft. (0 to 20 m) Hy0 depth         ★           B         0 to 65.6 ft. (0 to 20 m) Hy0	Standard			Standard	
Material of Sensor         ★           Standard         Standard           5         Stainless steel 316         ★           A         Aluminum bronze         ★           Body Seal O-ring Material         Standard         Standard         Standard         \$ Nitrile         ★           Nominal Range         Standard         A 0 to 6.5 ft. (0 to 2 m) Hy0 depth         ★           A         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           B         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           C         0 to 32.8 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 5 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 16.4 ft. (0 to 10 m) Hy0 depth         ★           D         0 to 3.2 ft. (0 to 10 m) Hy0 depth         ★           E         0 to 65.6 ft. (0 to 20 m) Hy0 depth         ★           B         0 to 65.6 ft. (0 to 20 m) Hy0	C	Commercial		*	
Standard   Standard				*	
Standard         Standerd           A         Aluminum bronze         ★           Body Seal O-ring Material         Standard         Image: Standard or Standard or Standard         Image: Standard or	Material of				
Stanless steel 316				Standard	
A Isluminum bronze         ★           Body Seal O-ring Material           Standard           1         Fluorocarbon (FPM/FKM)		Stainless steel 316			
Standard   Standard					
Standard           1         Fluorocarbon (FPM/FKM)         ★           2         Nitrile         ★           Nominal Range           Standard           A         0 to 6.5 ft. (0 to 2 m) H₂0 depth         ★           B         0 to 16.4 ft. (0 to 5 m) H₂0 depth         ★           C         0 to 32.8 ft. (0 to 10 m) H₂0 depth         ★           D         0 to 56.5 ft. (0 to 20 m) H₂0 depth         ★           E         0 to 16.4 ft. (0 to 50 m) H₂0 depth         ★           F         0 to 3.3 ft. (0 to 10 m) H₂0 depth         ★           G         0 to 3.3 ft. (0 to 10 m) H₂0 depth         ★           H         0 to 1.5 ft. (0 to 3.5 m) H₂0 depth         ★           E         0 to 6.5 ft. (0 to 200 m) H₂0 depth         ★           B         0 to 1.5 ft. (0 to 3.5 m) H₂0 depth         ★           B         0 to 1.5 ft. (0 to 3.5 m) H₂0 depth         ★           B         Cable ft. (0 to 200 m) H₂0 depth         ★           B         Cable ft. (0 to 200 m) H₂0 depth         ★           Cable ft. (0 to 3.5 m) H₂0 depth         ★           Cable ft. (0 to 3.5 m) H₂0 depth         ★           Cable ft. (0 to 3.5 m) H₂0 depth         ★      <				,,	
Fluorocarbon (FPM/FKM)		7 mg material		Standard	
Nominal Range		FI (FDM/F/AA)			
Standard         Standard           A         0 to 6.5 ft. (0 to 2 m) H₂0 depth         ★           B         0 to 16.4 ft. (0 to 5 m) H₂0 depth         ★           C         0 to 32.8 ft. (0 to 10 m) H₂0 depth         ★           D         0 to 56.5 ft. (0 to 20 m) H₂0 depth         ★           E         0 to 16.4 ft. (0 to 50 m) H₂0 depth         ★           F         0 to 32.8 ft. (0 to 100 m) H₂0 depth         ★           H         0 to 11.5 ft. (0 to 3.5 m) H₂0 depth         ★           H         0 to 11.5 ft. (0 to 3.5 m) H₂0 depth         ★           H         0 to 11.5 ft. (0 to 3.5 m) H₂0 depth         ★           J         0 to 656 ft. (0 to 200 m) H₂0 depth         ★           B         0 to 656 ft. (0 to 200 m) H₂0 depth         ★           Standard Spar         *         *           Standard Spa					
Standard         Standard           A         0 to 6.5 ft. (0 to 2 m) H₂0 depth         ★           B         0 to 16.4 ft. (0 to 5 m) H₂0 depth         ★           C         0 to 32.8 ft. (0 to 10 m) H₂0 depth         ★           E         0 to 16.4 ft. (0 to 50 m) H₂0 depth         ★           E         0 to 16.4 ft. (0 to 50 m) H₂0 depth         ★           F         0 to 3.28 ft. (0 to 100 m) H₂0 depth         ★           H         0 to 1.3 ft. (0 to 3.5 m) H₂0 depth         ★           H         0 to 1.5 ft. (to to 3.5 m) H₂0 depth         ★           D         0 to 656 ft. (0 to 200 m) H₂0 depth         ★           Zero and Span         Standard           I         Integral (fixed)         ★           Zabradra         T         Standard           I         Integral (fixed)         ★           Standard         T         Standard           P         Polyurethane         ★           F         F (Fluorinated ethylene-propylene (F.E.P)         ★           Cable Length Units         T         X           Cable Length Units         T         X           Cable Length         M         M         X           O5 meters         M<				*	
A       0 to 6.5 ft. (0 to 2 m) H₂0 depth       ★         B       0 to 16.4 ft. (0 to 10 m) H₂0 depth       ★         C       0 to 32.8 ft. (0 to 10 m) H₂0 depth       ★         D       0 to 65.6 ft. (0 to 20 m) H₂0 depth       ★         F       0 to 13.2 ft. (0 to 100 m) H₂0 depth       ★         F       0 to 33.3 ft. (0 to 100 m) H₂0 depth       ★         G       0 to 3.3 ft. (0 to 10 m) H₂0 depth       ★         H       0 to 1.5 ft. (0 to 200 m) H₂0 depth       ★         J       0 to 656 ft. (0 to 200 m) H₂0 depth       ★         Zero and Span       *         Standard         I       Integral (fixed)       ★         Cable Material       *         Standard         F       Fluorinated ethylene-propylene (F.E.P)       ★         Cable Length Units         Standard         E       English       ★         Cable Length Units         Standard         E       English       ★         Cable Length Units         Standard         E       English       ★         Cable Length       ★		ange			
B					
C         0 to 32.8 ft. (0 to 10 m) H₂0 depth         ★           D         0 to 65.6 ft. (0 to 20 m) H₂0 depth         ★           E         0 to 164 ft. (0 to 50 m) H₂0 depth         ★           F         0 to 328 ft. (0 to 100 m) H₂0 depth         ★           G         0 to 3.3 ft. (0 to 1.0 m) H₂0 depth         ★           H         0 to 11.5 ft. (0 to 3.5 m) H₂0 depth         ★           Zero and Span         Standard           1           Integral (fixed)         ★           Cable Material           Standard           P         Polyurethane         ★           F         Fluorinated ethylene-propylene (F.E.P)         ★           Cable Length Units           Standard           F         Fluorinated ethylene-propylene (F.E.P)         ★           Cable Length Units           Standard           Metric / English           M         Metric         ★           Cable Length           M         Metric         Metric / English         ★           Cable Length         Metric / English         ★           Cable Length         Metric / English					
D         0 to 65.6 ft. (0 to 20 m) H₂0 depth         ★           E         0 to 164 ft. (0 to 50 m) H₂0 depth         ★           F         0 to 328 ft. (0 to 10 m) H₂0 depth         ★           G         0 to 3.3 ft. (0 to 1 m) H₂0 depth         ★           H         0 to 11.5 ft. (0 to 3.5 m) H₂0 depth         ★           J         0 to 656 ft. (0 to 200 m) H₂0 depth         ★           Zero and Span           Standard           1         Integral (fixed)         ★           Cable Material           Standard           P         Polyurethane         ★           F         F Isuorinated ethylene-propylene (F.E.P)         ★           Cable Length Units           Standard           E         English         ★           M         Metric / English         ★           Cable Length         Metric / English           Standard           E         English         ★           Cable Length         Metric / English           Standard           O3         3 meters         M         ★           003         5 meters         M					
E   0 to 164 ft. (0 to 50 m) H₂0 depth F   0 to 328 ft. (0 to 100 m) H₂0 depth					
F       0 to 3.28 ft. (0 to 100 m) H₂0 depth       ★         G       0 to 3.3 ft. (0 to 1 m) H₂0 depth       ★         H       0 to 1.5 ft. (0 to 3.5 m) H₂0 depth       ★         Zero and Span       Standard         Standard       Standard         Integral (fixed)       ★         Cable Material       Standard         Polyurethane       ★         F Fluorinated ethylene-propylene (F.E.P)       ★         Cable Length Units         Standard         E       Standard         E       English       ★         Cable Length       Metric / English         Standard         Cable					
G       0 to 3.3 ft. (0 to 1 m) H₂0 depth       ★         H       0 to 11.5 ft. (0 to 3.5 m) H₂0 depth       ★         Jo to 656 ft. (0 to 200 m) H₂0 depth       ★         Standard Span       Standard         Standard       Standard         Polyurethane       Standard         P       Polyurethane       \$tandard         F Fluorinated ethylene-propylene (F.E.P)       \$tandard         E English       \$tandard         E       English       \$tandard         Coble Length       Metric / English         \$tandard         Cable Length       Metric / English         Standard         O3       3 meters       M       ★         O4 <t< td=""><td></td><td></td><td></td><td></td></t<>					
★         Zero and Span=         Standard         1       Integral (fixed)       ★         Cable Material         Standard         Polyurethane       ★         F Filorinated ethylene-propylene (F.E.P)       ★         Cable Length Units       ★         Standard         E       English       ★         M       Metric       ★         Cable Length       Metric / English         Standard         E       English       ★         Metric / English         Standard         O33       3 meters       M       ★         O403       3 meters       M       ★         O55       5 meters       M       ★         006       60 meters       M       ★         007       20 meters       M       ★         008       8 meters       M       ★         009       20 meters       M       ★         040       40 meters       M       ★         050       50 meters <td></td> <td></td> <td></td> <td></td>					
Zero and Span         Standard           1         Integral (fixed)         ★           Cable Material         Standard           Standard         Polyurethane         ★           Cable Length Units         Standard           E         English         ★           Metric / English           Standard           Cable Length         Metric / English           Standard           O3         3 meters         M         ★           O3         3 meters         M         ★           008         8 meters         M         ★           009         20 meters         M         ★           040         40 mete	<u>н</u>				
Standard           1         Integral (fixed)         ★           Cable Material           Standard           P         Polyurethane         ★           F         Fluorinated ethylene-propylene (F.E.P)         ★           Cable Length Units         Standard           E         English         ★           M         Metric         ★           Cable Length         Metric / English         ★	<u> </u>			*	
1 Integral (fixed)         ★           Cable Material         Standard           P Polyurethane         ★           Cable Length Units         Standard           E English         ★           Metric         ★           Cable Length         Metric / English           Standard           Cable Length         Metric / English           Standard           Cable Length         Metric / English           Standard           Standard         Standard <th colspan<="" td=""><td></td><td>pan</td><td></td><td></td></th>	<td></td> <td>pan</td> <td></td> <td></td>		pan		
Cable Material           Standard           P Polyurethane         ★           F Fluorinated ethylene-propylene (F.E.P)         ★           Cable Length Units         Standard           E         English         ★           M         Metric         ★           Cable Length         Metric / English           Standard           Cable Length         Metric / English           Standard           O33         3 meters         M         ★           Metric / English         Standard           O33         3 meters         M         ★           003         3 meters         M         ★           003         30 meters         M         ★           004         40 meters         M         ★           004         40 meters         M         ★           005         50 meters         M         ★           006					
Standard           P         Polyurethane         ★           F         Fluorinated ethylene-propylene (F.E.P)         ★           Cable Length Units           Standard           E         English         ★           M         Metric         ★           Cable Length         Metric / English           Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           000         20 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M / E         ★           040         40 meters         M         ★           050         50 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	•			*	
P         Polyurethane         ★           F         Fluorinated ethylene-propylene (F.E.P)         ★           Cable Length Units         Standard           E         English         ★           M         Metric         ★           Cable Length         Metric / English           Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M / E         ★           040         40 meters         M         ★           050         50 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	Cable Mate	rial			
F Invariant ed ethylene-propylene (F.E.P)         ★           Cable Length Units           Standard           E         English         ★           M         Metric         ★           Cable Length         Metric / English           Standard           Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M / E         ★           040         40 meters         M         ★           050         50 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	Standard			Standard	
Cable Length Units           Standard           E         English         ★           M         Metric         ★           Cable Length         Metric / English           Standard           O03         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M / E         ★           040         40 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	Р			*	
Standard           E         English         ★           M         Metric         ★           Cable Length         Metric / English           Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M / E         ★           040         40 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★				*	
E         English         ★           M         Metric         ★           Cable Length         Metric / English           Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M/ E         ★           040         40 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	Cable Leng	th Units			
M         Metric         ★           Cable Length         Metric / English           Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M / E         ★           040         40 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	Standard			Standard	
M         Metric         ★           Cable Length         Metric / English           Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M / E         ★           040         40 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	E	English		*	
Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M/ E         ★           040         40 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	M			*	
Standard           003         3 meters         M         ★           005         5 meters         M         ★           008         8 meters         M         ★           010         10 meters         M         ★           020         20 meters         M         ★           030         30 meters / feet         M/ E         ★           040         40 meters         M         ★           050         50 meters         M         ★           060         60 meters         M         ★	Cable Leng	th	Metric / English		
003       3 meters       M       *         005       5 meters       M       *         008       8 meters       M       *         010       10 meters       M       *         020       20 meters       M       *         030       30 meters / feet       M / E       *         040       40 meters       M       *         050       50 meters       M       *         060       60 meters       M       *			, 3	Standard	
005       5 meters       M       ★         008       8 meters       M       ★         010       10 meters       M       ★         020       20 meters       M       ★         030       30 meters / feet       M / E       ★         040       40 meters       M       ★         050       50 meters       M       ★         060       60 meters       M       ★		3 meters	M	*	
008       8 meters       M       ★         010       10 meters       M       ★         020       20 meters       M       ★         030       30 meters / feet       M / E       ★         040       40 meters       M       ★         050       50 meters       M       ★         060       60 meters       M       ★					
010       10 meters       M       ★         020       20 meters       M       ★         030       30 meters / feet       M / E       ★         040       40 meters       M       ★         050       50 meters       M       ★         060       60 meters       M       ★	008				
020       20 meters       M       ★         030       30 meters / feet       M / E       ★         040       40 meters       M       ★         050       50 meters       M       ★         060       60 meters       M       ★	010				
030       30 meters / feet       M / E       ★         040       40 meters       M       ★         050       50 meters       M       ★         060       60 meters       M       ★	020				
040       40 meters       M       ★         050       50 meters       M       ★         060       60 meters       M       ★	030			*	
060 60 meters M ★	040	·			
060 60 meters M ★	050			*	
075	060	60 meters	M	*	
	075	75 meters	M	*	

### Table 2. Mobrey 9720 ordering information

**★**The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

100	100 meters	M	*
125	125 meters	M	*
150	150 meters / feet	M / E	*
200	200 meters	M	*
009	9 feet	E	*
015	15 feet	E	*
024	24 feet	E	*
060	60 feet	E	*
090	90 feet	E	*
120	120 feet	E	*
225	225 feet	E	*
300	300 feet	E	*
375	375 feet	E	*
450	450 feet	E	*
600	600 feet	E	*
Product C	Certifications		
Standard			Standard
NA	Non-certified (non-hazardous area use only)		*
A6	CSA (Canada and USA)		*
Typical M	lodel Number: 9720 C S 1 A 1 P M 003 NA		

Custom Conf	iguration (iguration iguration iguration iguration iguration iguration iguration iguration iguration iguration	
Expanded		
C1	Custom configuration of actual range (customer to specify with order)	
Example Model Number: 9720 C S 1 A 1 P M 003 NA C1		

## **Mobrey 9780 Hydrostatic Level Transmitter Ordering**

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 12 for more information on Material Selections.

#### Table 3. Mobrey 9780 ordering information

All Mobrey 7980 instruments are manufactured as made-to-order items. Contact Rosemount Measurement for delivery lead times.

Model	Product Description		
9780	Pole Mounted Submersible Hydrostatic Level Transmitter		
Version			
С	Commercial		
M	Marine approval		
Material o	Sensor and Pole		
S	Stainless steel 316		
Α	Aluminum bronze		
Body Seal	O-ring Material		
1	Fluorocarbon (FPM/FKM)		
2	Nitrile		
Nominal R	ange		
A	0 to 6.5 ft. (0 to 2 m) H <sub>2</sub> 0 depth		
В	0 to 16.4 ft. (0 to 5 m) H <sub>2</sub> 0 depth		
С	0 to 32.8 ft. (0 to 10 m) H <sub>2</sub> 0 depth		
G	0 to 3.3 ft. (0 to 1 m) H <sub>2</sub> 0 depth		
Н	0 to 11.5 ft. (0 to 3.5 m) H <sub>2</sub> 0 depth		
Zero and S	pan		
1	Integral (Fixed)		
Cable Mat			
P	Polyurethane		
F	Fluorinated ethylene-propylene (F.E.P)		
Cable Leng			
E	English		
M	Metric		
Cable Leng	ıth	Metric / English	
003	3 meters	M	
005	5 meters	M	
008	8 meters	M	
010	10 meters	M	
020	20 meters	M	
030	30 meters / feet	M / E	
040	40 meters	M	
050	50 meters	M	
060	60 meters	M	
075	75 meters	M	
100	100 meters	M	
125	125 meters	M	
150	150 meters / feet	M / E	
200	200 meters	M	
009	9 feet	E	
015	15 feet	E	
024	24 feet	E	
060	60 feet	E	
090	90 feet	E	
120	120 feet	E	

### Table 3. Mobrey 9780 ordering information

All Mobrey 7980 instruments are manufactured as made-to-order items. Contact Rosemount Measurement for delivery lead times.

,		,	
225	225 feet	E	
300	300 feet	E	
375	375 feet	E	
450	450 feet	E	
600	600 feet	E	
Product	Certifications		
NA	Non-certified (non-hazardous area use only)		
A6	CSA (Canada and USA)		
Process	Connection		
В	Fixed flange, DN40 PN40 (DIN 2635)		
С	Fixed flange, DN50 PN40 (DIN 2635)		
D	Fixed flange, DN80 PN40 (DIN 2635)		
F	Fixed flange, 2-in. ASME B16.5 Class 150		
G	Fixed flange, 3-in. ASME B16.5 Class 150		
Overall L	ength Units		
E	English		
M	Metric		
Overall L	ength		
XXXX	mm or inches, depending on overall length units		
Typical N	Model Number: 9780 M S 1 C 1 P E 009 NA CE 300		

	-F ( /		
Custom Con	iguration		
Expanded			
C1	Custom configuration of actual range (customer to specify with order)		
Example Model Number: 9780 M S 1 C 1 P E 009 NA CE 300 C1			

## **Mobrey 9790 Hydrostatic Level Transmitter Ordering**

Specification and selection of product materials, options, or components must be made by the purchaser of the equipment. See page 12 for more information on Material Selections.

#### Table 4. Mobrey 9790 ordering information

**★**The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

Model	Product Description		
9790	Flange Mounted Submersible Hydrostatic Level Transmitter		
	range wounted submersible Hydrostatic Level Harismittel		
Version			Charles I
Standard			Standard
С	Commercial		*
М	Marine approval		*
	Flange Material		
Standard			Standard
S	Stainless steel 316		*
Α	Aluminum bronze		<u></u>
Body Seal C	-ring Material		
Standard			Standard
1	Fluorocarbon (FPM/FKM)		*
2	Nitrile		*
Nominal Ra			
Standard			Standard
A	0 to 6.5 ft. (0 to 2 m) H <sub>2</sub> 0 depth		*
В	0 to 16.4 ft. (0 to 5 m) H <sub>2</sub> 0 depth		*
С	0 to 32.8 ft. (0 to 10 m) H <sub>2</sub> 0 depth		*
D	0 to 65.6 ft. (0 to 20 m) H <sub>2</sub> 0 depth		*
E	0 to 164 ft. (0 to 50 m) H <sub>2</sub> 0 depth		*
F	0 to 328 ft. (0 to 100 m) H <sub>2</sub> 0 depth		*
G	0 to 3.3 ft. (0 to 1 m) H <sub>2</sub> 0 depth		*
Н	0 to 11.5 ft. (0 to 3.5 m) H <sub>2</sub> 0 depth		*
J	0 to 656 ft. (0 to 200 m) H <sub>2</sub> 0 depth		*
Zero and Sp	an		
Standard			Standard
1	Integral (Fixed)		*
Cable Mate			
Standard			Standard
P	Polyurethane		*
F	Fluorinated ethylene-propylene (F.E.P)		*
Cable Leng			
Standard			Standard
E	English		*
M	Metric		^
Cable Lengt		Metric / English	
Standard		Wetric / Eligiisii	Standard
003	2 motors	M	
003	3 meters 5 meters	M	<u>*</u>
003	8 meters	M	<u> </u>
010	10 meters	M	<u> </u>
020	20 meters	M	<u> </u>
030	30 meters / feet	M / E	<u> </u>
040	40 meters	M	<u>^</u>
UTU	TOTALCIS	IVI	^

### Table 4. Mobrey 9790 ordering information

**★**The Standard offering represents the most common options. The starred options (★) should be selected for best delivery. The Expanded offering is subject to additional delivery lead time.

050	50 meters	M	*
060	60 meters	M	*
075	75 meters	M	*
100	100 meters	M	*
125	125 meters	M	*
150	150 meters / feet	M / E	*
200	200 meters	M	*
009	9 feet	E	*
015	15 feet	E	*
024	24 feet	E	*
060	60 feet	E	*
090	90 feet	E	*
120	120 feet	E	*
225	225 feet	E	*
300	300 feet	E	*
375	375 feet	E	*
450	450 feet	E	*
600	600 feet	E	*
Product (	Certifications	·	
Standard			Standard
NA	Non-certified (non-hazardous area use only)		*
A6	CSA (Canada and USA)		*
Process C	Connection		
Standard	Standard		
A	Slip-on flange, DN25 PN40 (DIN 2635)		*
В	Fixed flange, DN40 PN40 (DIN 2635)		*
C	Fixed flange, DN50 PN40 (DIN 2635)		*
D	Fixed flange, DN80 PN40 (DIN 2635)		*
E	Slip-on flange, 1-in. ASME B16.5 Class 150		*
F	Fixed flange, 2-in. ASME B16.5 Class 150		*
G	Fixed flange, 3-in. ASME B16.5 Class 150		*
Typical M	Model Number: 9790 M S 1 A 1 P E 009 NA F		

Custom Configuration		
Expanded		
C1	Custom configuration of actual range (customer to specify with order)	
Example Model Number: 9790 M S 1 A 1 P E 009 NA F C1		

## Specifications for 9710, 9720, 9780, and 9790

#### **Functional**

#### **Output signal**

Two-wire, 4-20 mA

#### Power supply

10 to 30 Vdc

#### Load resistance

R=50 x (supply voltage - 10V) Ù

#### Measuring range

Up to 200 m / 656 ft. H<sub>2</sub>0

#### Overrange limit

5 x range up to a max 600 m / 1968 ft. H<sub>2</sub>0

#### Span adjustment

+10 to +100% of Upper Range Limit (URL)

#### **Process temperature limit**

9710, 9720, 9780: -20 to + 60 °C / -4 to +140 °F 9790: -20 to + 90°C (80 °C Ex ia)

#### Ambient temp. limits

-20 to +60 °C

#### **Humidity limits**

0 to 100% RH when terminated using a remote bellows box (contact Rosemount Measurement for details).

#### Hazardous area certification

See "Product Certifications" on page 13

#### **Performance**

#### Accuracy

±0.1% of calibrated span (includes effects of linearity, hysteresis and repeatability)

#### Stability

± 0.1% Upper Range Limit (URL) per 6 months

#### **Temperature effect**

 $\pm 0.015\%$  Upper Range Limit (URL) per °C / °F (over ambient temp. range)

## **Physical**

#### Cable entry

Glanding system supplied with required length of vented cable

#### **Materials selection**

Emerson provides a variety of products with various product options and configurations including materials of construction that can be expected to perform well in a wide range of applications. The product information presented is intended as a guide for the purchaser to make an appropriate selection for the application. It is the purchaser's sole responsibility to make a careful analysis of all process parameters (such as all chemical components, temperature, pressure, flow rate, abrasives, contaminants, etc.), when specifying product, materials, options and components for the particular application.

Emerson Process Management is not in a position to evaluate or guarantee the compatibility of the process fluid or other process parameters with the product, options, configuration or materials of construction selected.

#### Wetted parts

#### Sensor

Ceramic

#### **Sensor housing**

316 Stainless steel, Aluminium bronze

#### Seal rings

Fluorocarbon (FPM/FKM), Nitrile

#### **Cable**

Polyurethane

Fluorinated Ethylyene Polypropylene (FEP)

#### Pole (9780 only)

316 Stainless Steel pole supplied with 316 Stainless Steel Housing option

Copper Nickel pole supplied Aluminium Bronze Housing option

#### Ingress protection

IP68 / NEMA 6P (200 m / 656 ft. H<sub>2</sub>0)

#### Approximate weight

0.7 Kg / 1.54 lbs (sensor only)

## **Product Certifications**

## **Hazardous area certification**

### CSA (Canada and USA)

CL I, Div 1, Groups C and D CL II, Div 1, Groups E, F and G CL III Ex ia IIB T4 AEx ia IIB T4

## **Marine approvals**

- Lloyds Register
- American Bureau of Shipping
- Korean Register
- Germanisher Lloyd
- DNV
- RINA

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