

Rosemount 2130

Enhanced Vibrating Fork Liquid Level Switch



- Designed for operation in process temperatures of -94 to 500 °F (-70 to 260 °C)
- Electronic self-checking and condition monitoring – ‘Heartbeat’ LED gives status and instrument health information
- Increased safety, SIL2 certified to IEC 61508 as required by IEC 61511
- Adjustable switching delay for turbulent or splashing applications
- “Fast drip” fork design gives quicker response time especially with viscous liquids
- General area, explosion-proof/flameproof, and intrinsically safe options

ROSEMOUNT®


EMERSON™
Process Management

Overview of the Rosemount 2130



Adjustable Mode and Switching Delay

Measurement principle

The Rosemount 2130 is designed using the principle of a tuning fork. A piezo-electric crystal oscillates the forks at their natural frequency. Changes to this frequency are continuously monitored. The frequency of the vibrating fork sensor changes depending on the medium in which it is immersed. The denser the liquid, the lower the frequency.

When used as a **low level alarm**, the liquid in the tank or pipe drains down past the fork, causing a change of natural frequency that is detected by the electronics and switches the output state.

When the 2130 is used as a **high level alarm**, the liquid rises in the tank or pipe, making contact with the fork which then causes the output state to switch.

Key features and benefits

- Virtually unaffected by turbulence, foam, vibration, solids content, coating products, and liquid properties
- The *mid-range temperature* 2130 is designed for operation in process temperatures from -40 to 356 °F (-40 to 180 °C)
- The *extreme temperature* 2130 is designed for operation in process temperatures from -94 to 500 °F (-70 to 260 °C). It has a stainless steel thermal tube to move the electronics away from the process
- Electronic self-checking and condition monitoring. The 'heartbeat' LED gives status and health information on the 2130
- Adjustable switching delay prevents false switching in turbulent or splashing applications
- 'Fast Drip' fork design gives quicker response time when mounted horizontally, especially with viscous liquids
- Rapid wet-to-dry time for highly responsive switching
- Fork shape is optimized for hand polishing to meet hygienic requirements
- No moving parts or crevices for virtually no maintenance



'Fast Drip' Forks

Contents

Rosemount 2130 Ordering Information page 4
 Specifications page 8

Product Certifications page 11
 Dimensional Drawings page 13

Superior diagnostics

- Built-in diagnostics continuously check electronic and mechanical health
- Fork conditions detected including internal and external damage, coated or blocked, and extreme corrosion
- Ideal for critical alarm duties

Fit and forget

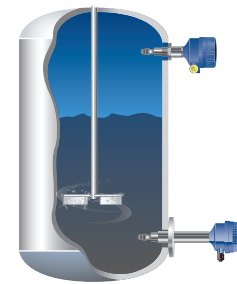
- Once installed, the 2130 is ready to go. It needs no calibration and requires minimum installation
- The 'heartbeat' LED gives an instant visual indication that the unit is operational
- Functional testing of the instrument and system is easy with a magnetic test point
- You can install, and forget it

Extended high and low temperature performance

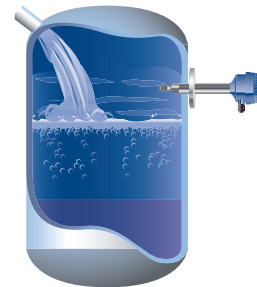
- The *extreme temperature* 2130 enables standardization of Rosemount vibrating fork switches across a wide range of process environments, and is ideally suited for harsh conditions where high reliability is essential

Applications

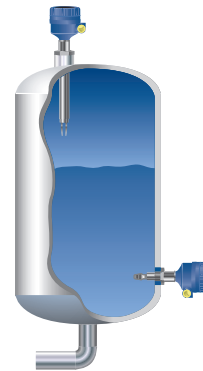
- Overfill protection
- High and low level alarms
- Pump control or limit detection
- Run dry or pump protection
- Hygienic applications
- High temperature applications
- Wireless applications



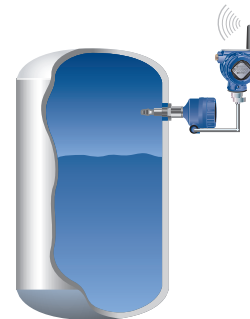
High and Low Level Alarm



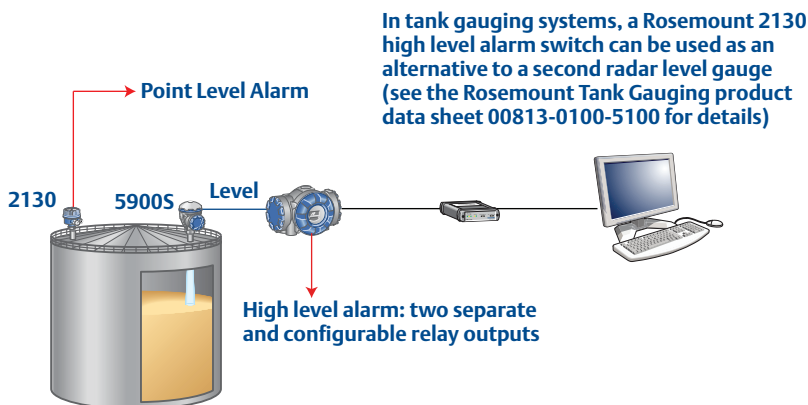
High Temperature Applications



Pump Control / Limit Detection



Wireless Applications using a Rosemount 702 Wireless Discrete Transmitter



Rosemount 2130 Ordering Information

Table 1. Rosemount 2130 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		
2130	Enhanced Vibrating Fork Liquid Level Switch		
Output			
Standard			Standard
L	Direct Load Switching (Mains 2-wire) 20 to 264 Vac, 50/60 Hz, 20 to 60 Vdc, Self-checking		★
P	PNP/PLC Low Voltage (3-wire) 20 to 60 Vdc, Self-checking		★
D	Relay (DPCO), 20 to 264 Vac, 50/60 Hz, 20 to 60 Vdc, Self-checking (Fault Relays output version is available by selecting D and adding "R2264" to the end of the model number)		★
N	NAMUR, 8 Vdc, Self-checking		★
M	8/16 mA, Self-checking		★
Housing Material			
Standard			Standard
A	Aluminum		★
S	Stainless Steel		★
Conduit Entry / Cable Threads		Product Certifications	
Standard			Standard
9	3/4 inch NPT	NA, E5, E6, G5, G6, I1, I2, I3, I5, I6, I7	★
2	M20	NA, E1, E2, E3, E7, I1, I2, I3, I5, I6, I7	★
Operating Temperature			
Standard			Standard
M	Mid-Range: -40 °F (-40 °C) ... 356 °F (180 °C)		★
E	Extreme: -94 °F (-70 °C) ... 500 °F (260 °C)		★
Materials of Construction: Process Connection / Fork			
Standard			Standard
S ⁽¹⁾	316/316L Stainless Steel (1.4401/1.4404)		★
F ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾	ECTFE/PFA Copolymer, Coated 316/316L Stainless Steel (1.4401/1.4404)		★
Expanded			
H ⁽⁵⁾	Alloy C (UNS N10002), Alloy C-276 (UNS N10276), solid		
Process Connection Size⁽⁶⁾			
Standard			Standard
9	3/4 in. / 19 mm		★
1	1 in. / 25 mm (DN25)		★
2	2 in. / 50 mm (DN50)		★
5	1 1/2 in. / 40 mm (DN40)		★
3	3 in. / 80 mm (DN80)		★
4	4 in. / 100 mm (DN100)		★
7	2 1/2 in. / 65 mm (DN65)		★
Process Connection Rating⁽⁶⁾			
Standard			Standard
AA	ASME B16.5 Class 150 flange		★
AB	ASME B16.5 Class 300 flange		★
AC	ASME B16.5 Class 600 flange		★
DA	EN1092-1 PN 10/16 flange		★
DB	EN1092-1 PN 25/40 flange		★
DC	EN1092-1 PN 63 flange		★
DD	EN1092-1 PN 100 flange		★
NN	For use with non-flange process connection type		★

Table 1. Rosemount 2130 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.

Process Connection Type⁽⁶⁾			
Standard			Standard
R	Raised Face (RF) Flange		★
B	BSPT (R) Thread		★
G	BSPP (G) Thread		★
N	NPT Thread		★
P	BSPP (G) O-ring		★
C	Tri-Clover Clamp		★
Fork Length			
		Process Connection	
Standard			Standard
A	Standard length 1.7-in. (44 mm)	All except flanged models	★
H ⁽³⁾	Standard length flange 4.0-in. (102 mm)	All flanged models	★
E ⁽⁷⁾	Extended, customer specified length in tenths of inches	All except connection 1-NN-P	★
M ⁽⁷⁾	Extended, customer specified length in millimeters	All except connection 1-NN-P	★
Specific Extended Fork Length			
Standard			Standard
0000	Factory default length (only if Fork Length A or H is selected)		★
XXXX ⁽⁷⁾	Specific customer specified length in tenths of inches, or millimeters (XXXX mm or XXX.X inches)		★
Surface Finish		Process Connection	
Standard			Standard
1	Standard surface finish	All	★
2	Hand polished (Ra < 0.4 μm)	Hygienic Connections P or C	★
Product Certifications			
		Output	Conduit Entry/Cable Threads
Standard			Standard
NA	No Hazardous Locations Certifications	All models	All models
G5 ⁽⁸⁾	FM Ordinary Locations (unclassified, safe area)	All models	³ / ₄ -in. NPT models only
G6 ⁽⁹⁾⁽¹⁰⁾	CSA Ordinary Locations (unclassified, safe area)	All models	³ / ₄ -in. NPT models only
E1	ATEX Flameproof	All models	M20 models only
E2	INMETRO Flameproof	All except Fault Relays	M20 models only
E3	NEPSI Explosion-proof	All models	M20 models only
E5 ⁽⁸⁾	FM Explosion-proof	All models	³ / ₄ -in. NPT models only
E6 ⁽⁹⁾⁽¹⁰⁾	CSA Explosion-proof	All models	³ / ₄ -in. NPT models only
E7	IECEx Explosion-proof	All models	M20 models only
I1	ATEX Intrinsic Safety	Namur or 8/16 mA	All models
I2	INMETRO Intrinsic Safety	Namur or 8/16 mA	All models
I3	NEPSI Intrinsic Safety	Namur or 8/16 mA	All models
I5	FM Intrinsic Safety	Namur or 8/16 mA	All models
I6 ⁽¹⁰⁾	CSA Intrinsic Safety	Namur or 8/16 mA	All models
I7	IECEx Intrinsic Safety	Namur or 8/16 mA	All models
OPTIONS			
Calibration Data Certification			
Standard			Standard
Q4	Certificate of functional test		★
Material Traceability Certification			
Standard			Standard
Q8 ⁽²⁾⁽³⁾	Material traceability certification per EN 10204 3.1		★
Material Certification			
Standard			Standard
Q15 ⁽²⁾⁽³⁾	NACE MR0175 / ISO 15156		★
Q25 ⁽²⁾⁽³⁾	NACE MR0103		★

Table 1. Rosemount 2130 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.

Safety Certifications		
Standard		Standard
QS ⁽¹¹⁾	Prior-use certificate of FMEDA Data	★
QT ⁽¹²⁾	Safety certificate to IEC61508	★
Special Procedures		
Standard		Standard
P1 ⁽¹³⁾	Hydrostatic testing with certificate	★
Low Liquid Density Range		
Standard		Standard
LD	Low density liquids – minimum density is 31.2 lb/ft ³ (500 kg/m ³)	★
Typical Model Number: 2130 LA 2 E S 9 NN B A 0000 1 NA Q8		

(1) Flanges are dual certified 316 and 316L Stainless Steel (1.4401 and 1.4404).

(2) Only available for wetted parts.

(3) Option is not available for hand polished wet side as standard.

(4) Only available for a flanged 2130. Also, the Operating Temperature code M must be selected (mid-range) and the maximum process temperature must be below 302 °F (150 °C).

(5) Only available for BSPT and NPT threaded process connection codes 9-NN-B, 9-NN-N, 1-NN-B, and 1-NN-N as standard, other upon request.

(6) Other process connections available upon request.

(7) Example Fork Length code E1181 is 118.1 inches. Code M4000 is 4000 millimeters. See "Extended Lengths" on page 8 for minimum and maximum extended lengths.

(8) See "Product Certifications" on page 11. E5 includes G5 requirements. G5 is for use in unclassified, safe area locations only.

(9) See "Product Certifications" on page 11. E6 includes G6 requirements. G6 is for use in unclassified, safe area locations only.

(10) The requirements of CRN are met when a Rosemount 2130 CSA approved vibrating fork level switch (with Product Certifications code G6, E6, or I6) is configured with stainless steel wetted parts and either NPT threaded or ASME B16.5 2-in. to 8-in. flanged process connections.

(11) Available for all output types.

(12) Available for all output types except the Relay (DPCO) option.

(13) Option limited to units with extended lengths up to 59.1 in. (1500 mm).

Overfill approval option

The Rosemount 2130 has been TÜV-tested and approved for overfill protection according to the German DIBt/WHG regulations. This option is not selectable in the ordering information table. If required, add "R2259" to the end of the model code.

For example, 2130 LA 2 E S 9 NN B A 0000 1 NA Q8 **R2259**.

Rosemount 2130 spare parts and accessories

Table 2. Rosemount 2130 Spare parts and accessories

★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.

Spares and Accessories ⁽¹⁾ ⁽²⁾		
Standard		Standard
02100-1000-0001	Seal for 1-in. BSPP (G1A). Material: Non-asbestos BS7531 grade X carbon fiber with rubber binder	★
02100-1040-0001	Seal for 3/4-in. BSPP (G3/4A). Material: Non-asbestos BS7531 grade X carbon fiber with rubber binder	★
02100-1010-0001	Hygienic adaptor boss 1-in. BSPP. Material: 316 SS fitting. FPM/FKM 'O' ring	★
02100-1020-0001	2-in. (51 mm) Tri-clamp kit (vessel fitting, clamp ring, and seal). Material: 316 SST NBR Nitrile	★
02100-1030-0001	Telescopic test magnet	★
02120-2000-0001 ⁽³⁾	316 SST adjustable clamp gland for 1-in. threaded extended length. 1 1/2-in. BSPP male connection	★
02120-2000-0002 ⁽³⁾	316 SST adjustable clamp gland for 1-in. threaded extended length. 1 1/2-in. NPT male connection	★
02130-7000-0001 ⁽⁴⁾	Replacement Cassette: Direct load switching (Red)	★
02130-7000-0002 ⁽⁵⁾	Replacement Cassette: PNP/PLC low voltage (Yellow)	★
02130-7000-0003 ⁽⁶⁾	Replacement Cassette: NAMUR current switching (Light Blue)	★
02130-7000-0004 ⁽⁷⁾	Replacement Cassette: DPCO Relay (Dark Green)	★
02130-7000-0005 ⁽⁸⁾	Replacement Cassette: Direct load switching, low density range selection (Red)	★
02130-7000-0006 ⁽⁹⁾	Replacement Cassette: PNP/PLC low voltage, low density range selection (Yellow)	★
02130-7000-0007 ⁽¹⁰⁾	Replacement Cassette: NAMUR current switching, low density range selection (Light Blue)	★
02130-7000-0008 ⁽¹¹⁾	Replacement Cassette: DPCO Relay, low density range selection (Dark Green)	★
02130-7000-0009 ⁽¹²⁾	Replacement Cassette: 8/16 mA, (Dark Blue)	★
02130-7000-0010 ⁽¹³⁾	Replacement Cassette: 8/16 mA, low density range selection (Dark Blue)	★
02130-7000-0011 ⁽¹⁴⁾	Replacement Cassette: Fault and Alarm Relays (2 x SPCO) (Light Green)	★
02130-7000-0012 ⁽¹⁵⁾	Same as replacement cassette 02130-7000-011 but with Low density range selection	★

(1) Intrinsically Safe (IS) approved cassettes can only be replaced with the same type of IS cassette. Non-IS cassette types can be interchanged with other non-IS cassettes, but the new label must be fitted and the original part number transferred to the new label.

(2) When ordering a replacement cassette, check the Product Certification section in Table 1 on page 4 for availability conditions.

(3) The adjustable clamp gland is not explosion-proof. It has a silicone rubber seal. Maximum pressure is 1.3 barg. Maximum temperature is 257 °F (125 °C).

(4) Available for Electronic Type Code L only.

(5) Available for Electronic Type Code P only.

(6) Available for Electronic Type Code N only.

(7) Available for Electronic Type Code D only.

(8) Available for Electronic Type Code L and requires units with option LD.

(9) Available for Electronic Type Code P and requires units with option LD.

(10) Available for Electronic Type Code N and requires units with option LD.

(11) Available for Electronic Type Code D and requires units with option LD.

(12) Available for Electronic Type Code M only.

(13) Available for Electronic Type Code M and requires units with option LD.

(14) Available for Electronic Type Code D only and requires units with the R2264 option.

(15) Available for Electronic Type Code D only and requires units with R2264 and LD options.

Specifications

General

Product

- Rosemount 2130 Enhanced Vibrating Fork Liquid Level Switch

Measuring principle

- Vibrating Fork

Applications

- Most liquids including coating liquids, aerated liquids, and slurries

Mechanical

Housing / Enclosure

Table 3. Housing / Enclosure Specification

Housing Code	A-2	A-9	S-2	S-9
Housing Material	Al Alloy ASTM B85 A360.0		316C12 Stainless Steel	
Rotational	No		No	
Housing Paint	Polyurethane Paint		Not Applicable	
LED Window	None		None	
Conduit Entry	M20	³ / ₄ -in. NPT	M20	³ / ₄ -in. NPT
Ingress Protection	IP66/67 to EN60529, NEMA 4X		IP66/67 to EN60529, NEMA 4X	

Process connections

- Threaded, hygienic, and flanged process connections.
See Table 1 on page 4 for a complete list.

Extended Lengths

- The maximum extended length is 157.5 in. (4000 mm) except for ECTFE/PFA copolymer coating and hand-polished process connection options which have a maximum length of 59.1 in. (1500 mm) and 39.4 in. (1000 mm) respectively

Table 4. Minimum extended lengths

Process Connection	Minimum Extended Length
³ / ₄ -in. Threaded	3.8 in. (95 mm)
1-in. Threaded	3.7 in. (94 mm)
Flanged	3.5 in. (89 mm)
Tri-Clamp	4.1 in. (105 mm)

Process connection materials

- 316/316L Stainless Steel (1.4401/1.4404 dual certified)
- Alloy C (UNS N10002) and Alloy C-276 (UNS N10276)
– available for flanged, and BSPT and NPT threaded process connections (³/₄-in. and 1-in. BSPT (R), and ³/₄-in. and 1-in. NPT)
- ECTFE/PFA co-polymer coated 316/316L Stainless Steel (1.4401/1.4404 dual certified) – only available for a flanged 2130
- Hand-polished to better than 0.4 µm option for hygienic connections
- Gasket material for ³/₄-in. and 1-in. BSPP (G) is non-asbestos BS7531 Grade X carbon fiber with rubber binder

Dimensional drawings

- See “Dimensional Drawings” on page 13

Performance

Hysteresis (water)

- 0.1 in. (2.5 mm)

Switching point (water)

- 0.5 in. (13 mm) from tip of fork (if vertical installation) or from edge of fork (if horizontal installation) – this will vary with different liquid densities

Functional

Maximum operating pressure

- The final rating depends on the selected process connection
- Threaded connection: see Figure 1 for operating pressures.
Note: Clamp glands 02120-2000-0001 and 02120-2000-0002 (page 7) limit the maximum pressure to 18.85 psig (1,3 bar g)
- Hygienic connection: 435 psig (30 bar g)
- Flanged connection:
See Figure 1 or Table 5 (whichever gives the lowest pressure)

Figure 1. Process pressure

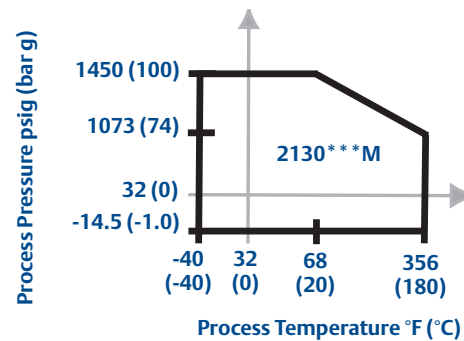
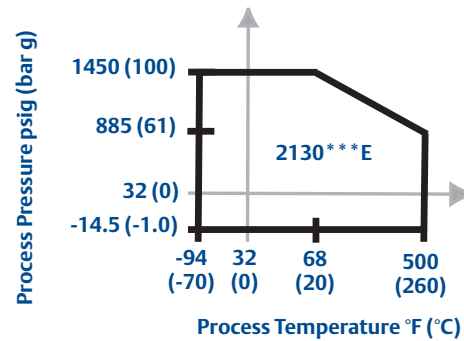


Table 5. Maximum flange pressure rating

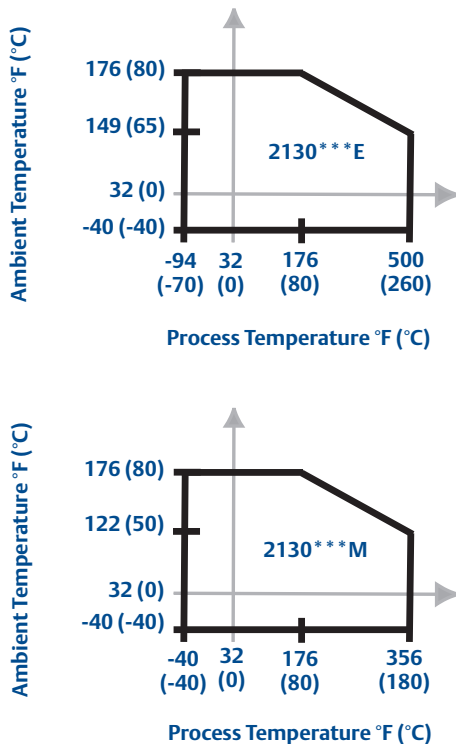
Standard	Class/Rating	SST Flanges
ASME B16.5	Class 150	275 psig ⁽¹⁾
ASME B16.5	Class 300	720 psig ⁽¹⁾
ASME B16.5	Class 600	1,440 psig ⁽¹⁾
EN1092-1	PN 10	10 barg ⁽²⁾
EN1092-1	PN 16	16 barg ⁽²⁾
EN1092-1	PN 25	25 barg ⁽²⁾
EN1092-1	PN 40	40 barg ⁽²⁾
EN1092-1	PN 63	63 barg ⁽²⁾
EN1092-1	PN 100	100 barg ⁽²⁾

(1) At 100 °F (38 °C), the pressure rating decreases with an increasing process temperature.
 (2) At 122 °F (50 °C), the pressure rating decreases with an increasing process temperature.

Minimum and maximum operating temperatures

- See Figure 2 for operating temperatures
- Clamp glands 02120-2000-0001 and 02120-2000-0002 (page 7) limit the maximum temperature to 257 °F (125 °C)
- The ambient temperature for a 8/16 mA cassette is limited to 158 °F (70 °C) in dust applications

Figure 2. Operating temperatures



Liquid density requirement

- Minimum standard density is 37.5 lb/ft³ (600 kg/m³)
- Minimum density is 31.2 lb/ft³ (500 kg/m³) when ordered with the Low Density Range option

Electrical connections

Liquid viscosity range

- 0.2 to 10000 cP (centiPoise) when operating in Normal mode
- 0.2 to 1000 cP (centiPoise) when operating in Self-check mode

Solids content and coating

- The maximum recommended diameter of solid particles in the liquid is 0.2 in. (5 mm) when used in normal mode only
- For coating products, avoid bridging of forks

Switching delay

- There is a user-selectable 0.3, 1, 3, 10, 30 seconds delay for dry-to-wet and wet-to-dry switching

CIP (Clean In Place) cleaning

- The 2130 withstands steam cleaning routines

Electrical

Switching mode

- User-selectable switching mode (Dry = on or Wet = on)

Protection

- Polarity insensitive – Direct Load and Relay electronics
- Over-current protection – Direct Load and PNP/PLC electronics
- Short-circuit protection – Direct Load and PNP/PLC electronics
- Load-missing protection – Direct Load and PNP/PLC electronics
- Surge protection (to IEC61326) – Available on all versions of the 2130

Terminal connection (wire diameter)

- Minimum 26 AWG and maximum 14 AWG (0.13 to 2.5 mm²). Note national regulations.

Conduit plugs/cable gland

- Conduit entries for explosion-proof areas are shipped with one Exd plug (loose in bag) and two dust caps fitted. Use suitably rated cable glands. Unused conduit entries must be sealed with a suitably rated blanking plug. See Table 3 on page 8 for conduit/cable entry options

Grounding

- The Rosemount 2130 must always be grounded either through the terminals or using the provided external ground connection

Operating modes

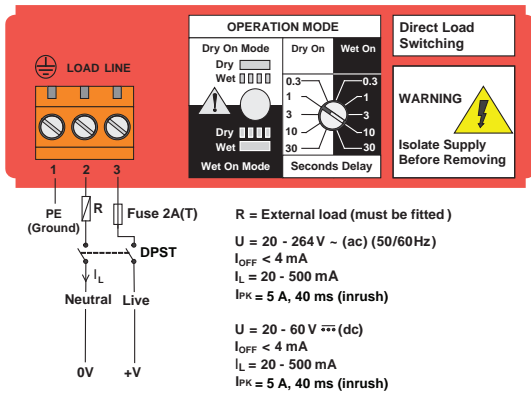
Table 6. Operating modes

Fault Conditions Detected	Normal Mode	Self-Check Mode
PCB Control Circuit Corruption	Yes	Yes
External Damage to Fork	No	Yes
Internal Damage to Sensor	No	Yes
Excessive Corrosion	No	Yes
Over-temperature	No	Yes

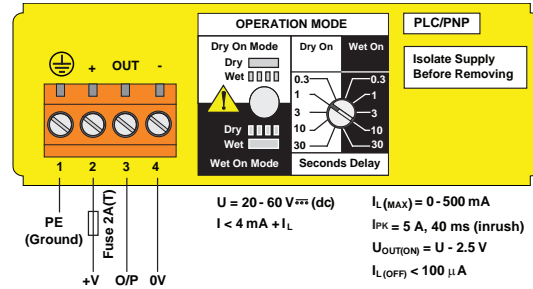
Safety integrity level (option codes QS and QT)

- The Rosemount 2130 FMEDA is certified for SIL2.
- For more information, go to: <http://www.emersonprocess.com/rosemount/safety/>

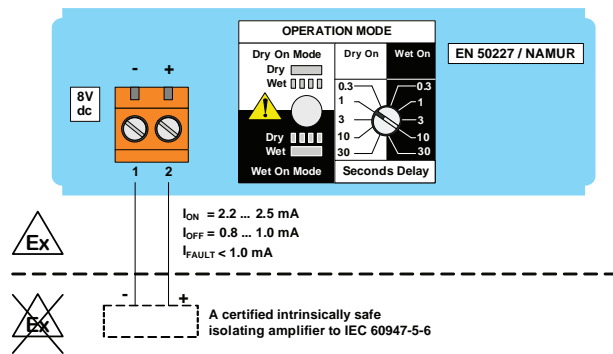
■ Direct load switching (mains two-wire) cassette



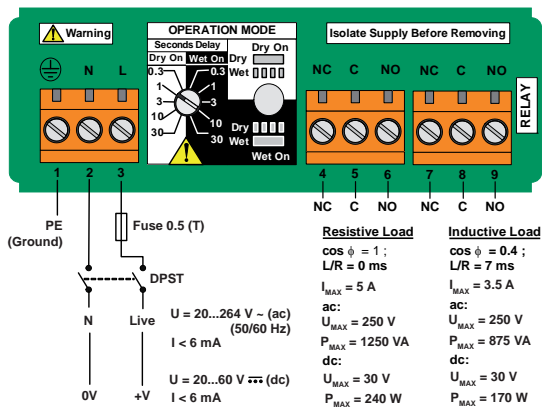
■ Solid state PNP output for direct interface to a PLC



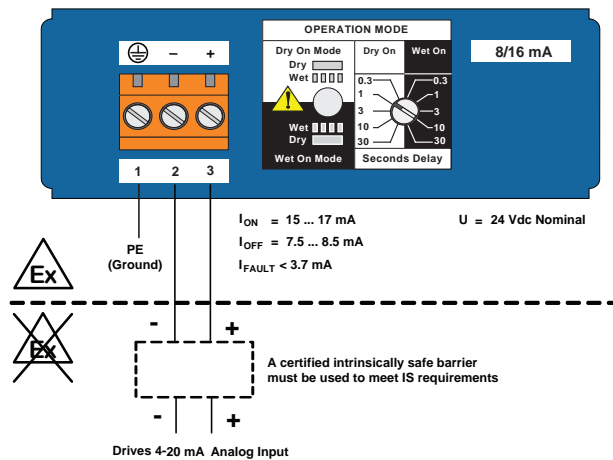
■ NAMUR cassette (light blue)



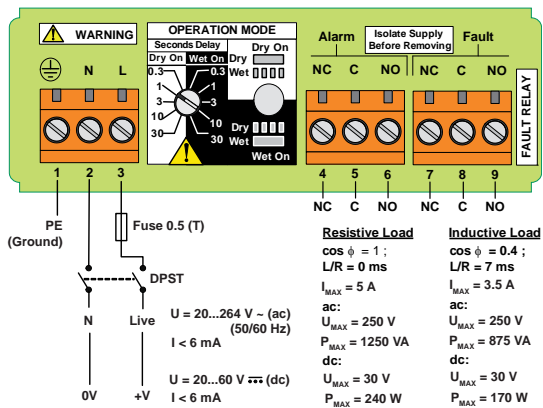
■ DPCO relay cassette (dark green)



■ 8/16 mA cassette (dark blue)



■ Fault and Alarm relays (2 x SPCO) cassette (light green)



Product Certifications

European directive information

The EC declaration of conformity for all applicable European directives for this product can be found on the Rosemount website at www.rosemount.com.

ATEX Directive (94/9/EC)

Complies with the ATEX Directive.

Pressure Equipment Directive (PED) (97/23/EC)

The Rosemount 2130 is outside the scope of PED Directive.

L.V. Directive

EN61010-1 Pollution degree 2, Category II (264V max),
Pollution degree 2, Category III (150V max)

Electro Magnetic Compatibility (EMC) Directive

EN61326 Emissions to Class B.
Immunity to industrial location requirements.
NAMUR NE21.

CE-mark

Complies with applicable directives (EMC, ATEX, LVD).

NAMUR approval

NAMUR NE95 type test report is available upon request.
Complies with NAMUR NE21.

Overfill approval

Certificate number: Z-65.11-519.
TÜV-tested and approved for overfill protection according to the German DIBt/WHG regulations.

This option is not selectable in the ordering information table.
If required, add “**R2259**” to the end of the model code.
For example, 2130 LA 2 E S 9 NN B A 0000 1 NA Q8 **R2259**.

Marine approvals

ABS American Bureau of Shipping
GL Germanischer Lloyd (*excludes Alarm and Fault relays*)

Drinking water approval

Mobrey Ltd. (Slough, United Kingdom) confirms that the wetted parts of the Rosemount 2130 vibrating fork level switch are suitable and approved for drinking water usage.

The wetted parts of the vibrating fork level switches executed in stainless steel (option code S) and Alloy C/Alloy C-276 (option code H). These materials are toxicological and microbiological classified as safe and in accordance with DIN 50930-6.

Ordinary location certification for FM

G5 Project ID: 3021776
The switch has been examined and tested to determine that the design meets basic electrical, mechanical, and fire protection requirements by FM, a nationally recognized testing laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

Ordinary location certification for CSA

G6 Certificate Number: 06 CSA 1805769
The switch has been examined and tested to determine that the design meets basic electrical, mechanical, and fire protection requirements by CSA, a nationally recognized testing laboratory as accredited by the Standards Council of Canada (SCC).

Single Seal

Canadian Registration Number

CRN 0F04227.2C

NOTE

The requirements of CRN are met when a Rosemount 2130 CSA-approved (G6, E6, or I6 codes) vibrating fork level switch is configured with 316/316L stainless steel (1.4401/1.4404) wetted parts and either NPT threaded or 2-in. to 8-in. ASME B16.5 flanged process connections.

Hazardous locations certifications

North American approvals

Factory Mutual (FM) explosion-proof approval

E5 Project ID: 3012658
Explosion-proof for Class I, Div. 1, Groups A, B, C, and D
Temperature Class: T6 (T_{amb} -50 to +75 °C)
Enclosure: Type 4X

Factory Mutual (FM)**intrinsically safe approval and non-incendive approvals**

- 15 Project ID: 3011456
 Intrinsically Safe for Class I, Div. 1, Groups A, B, C, and D
 Class I, Zone 0, AEx ia IIC
 Non-incendive for Class I, Div. 2, Groups A, B, C, and D
 Class I, Zone 2, IIC
 Temperature Code: T5 (T_{amb} –40 to 80 °C, T_{proc} < 80 °C)
 Control Drawing: 71097/1154 (*with NAMUR electronics*)
 Control Drawing: 71097/1314 (*with 8/16 mA electronics*)

NOTE

A certified isolating amplifier or barrier must be used for intrinsic safety.

Canadian approvals**Canadian Standards Association (CSA) explosion-proof**

- E6 Project ID: 1786345
 Explosion-proof for Class I, Div. 1, Groups A, B, C, and D
 Temperature Class: T6 (T_{amb} –50 to +75 °C)
 Enclosure: Type 4X
Single Seal


Canadian Standards Association (CSA)**intrinsically safe and non-incendive approvals**

- 16 Certificate Number: 06 CSA 1786345
 Intrinsically Safe for Class I, Div. 1, Groups A, B, C, and D
 Class 1, Zone 0, Ex ia IIC
 Non-incendive for Class I, Div. 2, Groups A, B, C, and D
 Temperature Code: T5 (T_{amb} –50 to +80 °C, T_{proc} < 80 °C)
 Control Drawing: 71097/1179 (*with NAMUR electronics*)
 Control Drawing: 71097/1315 (*with 8/16 mA electronics*)
Single Seal


NOTE

A certified isolating amplifier or barrier must be used for intrinsic safety.

European approvals**ATEX flameproof and dust proof approval**

- E1 Certificate: Sira 05ATEX1129X
 Flameproof and dust proof:
 ATEX Marking  II 1/2 G D
 Ex d IIC T6...T2 Ga/Gb
 Ex tb IIIC T85 °C...T265 °C Db

ATEX intrinsically safe approval

- I1 Certificate: Sira 05ATEX2130X
 Intrinsic Safety for gas and dust atmospheres:
 ATEX Marking  II 1 G D
 Ex ia IIC T5...T2 Ga
 Ex ia IIIC T85 °C...T265 °C Da

NOTE

A certified isolating amplifier or barrier must be used for intrinsic safety.

International approvals**INMETRO flameproof and dust proof approval**

- E2 Certificate Number: TÜV 12.1285 X
 Flameproof and dust proof:
 Ex d IIC T6 to T2 Ga/Gb, Ex tb IIIC T85 °C to T265 °C Db

INMETRO intrinsically safe approval

- I2 Certificate Number: TÜV 12.1391 X
 Intrinsically Safe for gas and dust atmospheres:
 Ex ia IIC T* Ga, Ex ia IIIC T* Da (* See table in the certificate)
 Ta* (* See table in the certificate)

NOTE

A certified isolating amplifier or barrier must be used for intrinsic safety.

National Supervision and Inspection Centre for Explosion Protection and Safety Instrumentation (NEPSI) flameproof and dust proof approval

- E3 Certificate Number: GYJ101373
 Flameproof and dust proof:
 Ex d IIC T6 to T2
 DIP A21 T_A (T85°C to 265°C) IP6X

National Supervision and Inspection Centre for Explosion Protection and Safety Instrumentation (NEPSI) intrinsically safe approval

- I3 Certificate Number: GYJ101372X (*NAMUR electronics only*)
 Intrinsic Safety:
 Ex ia IIC T5 to T2

NOTE

A certified isolating amplifier or barrier must be used for intrinsic safety.

International Electrotechnical Commission (IEC) flameproof and dust proof approval

- E7 Certificate: IECEx SIR 06.0051X
 Flameproof and dust proof:
 Ex d IIC T6...T2 Ga/Gb
 Ex tb IIIC T85 °C...T265 °C Db

International Electrotechnical Commission (IEC) intrinsically safe approval

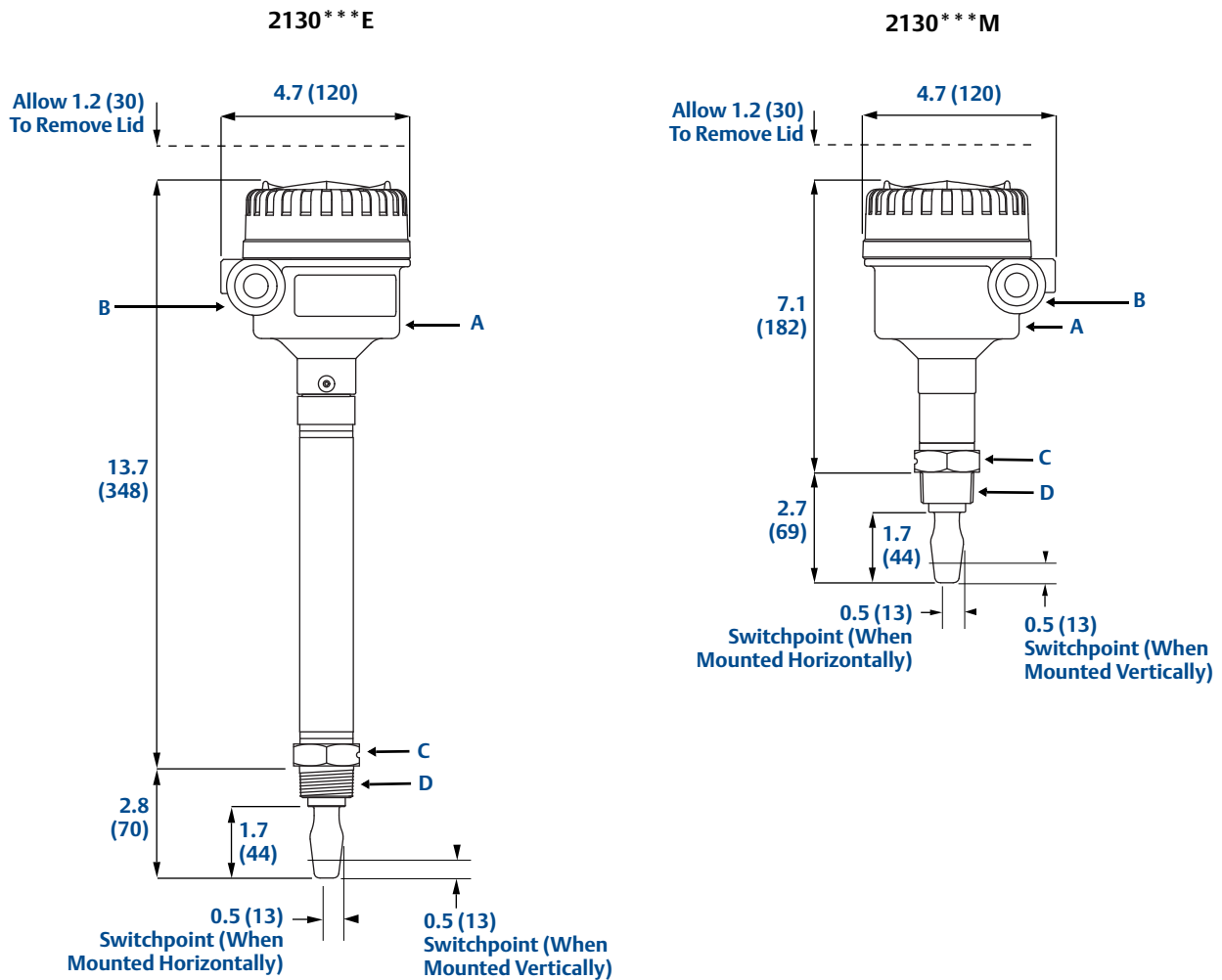
- I7 Certificate: IECEx SIR 06.0070X
 Intrinsically Safe for gas and dust atmospheres:
 Ex ia IIC T5...T2 Ga
 Ex ia IIIC T85 °C...T265 °C Da

Dimensional Drawings

Thread mounting (standard length) page 13
 Thread mounting (extended length) page 14
 Flange mounting (standard length) page 15
 Flange mounting (extended length) page 16

Thread mounting (standard length)

Note: Dimensions are in inches (millimeters)

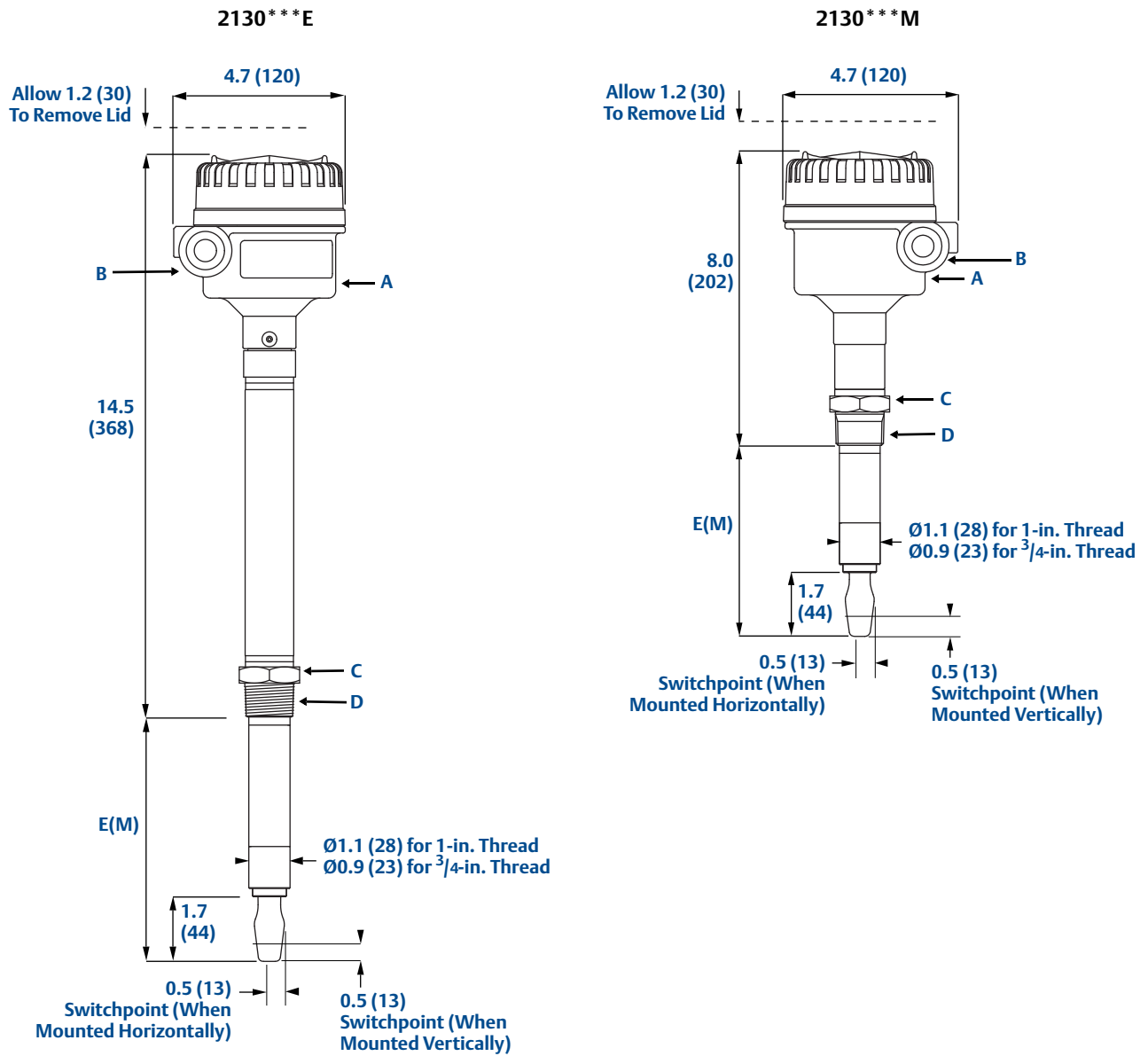


NOTE: FOR HYGIENIC 2130 DIMENSIONS, SEE TYPE 1 DRAWING DOWNLOADS ON WEB SITE

- A. Aluminum or SST Housing
- B. Cable Entry M20x1.5 or 3/4-in. NPT
- C. 1.575 (40) A/F Hexagon
- D. 3/4-in. or 1-in. Thread

Thread mounting (extended length)

Note: Dimensions are in inches (millimeters)



NOTE: FOR HYGIENIC 2130 DIMENSIONS, SEE TYPE 1 DRAWING DOWNLOADS ON WEB SITE

A. Aluminum or SST Housing B. Cable Entry M20x1.5 or 3/4-in. NPT C. 1.575 (40) A/F Hexagon D. 3/4-in. or 1-in. Thread

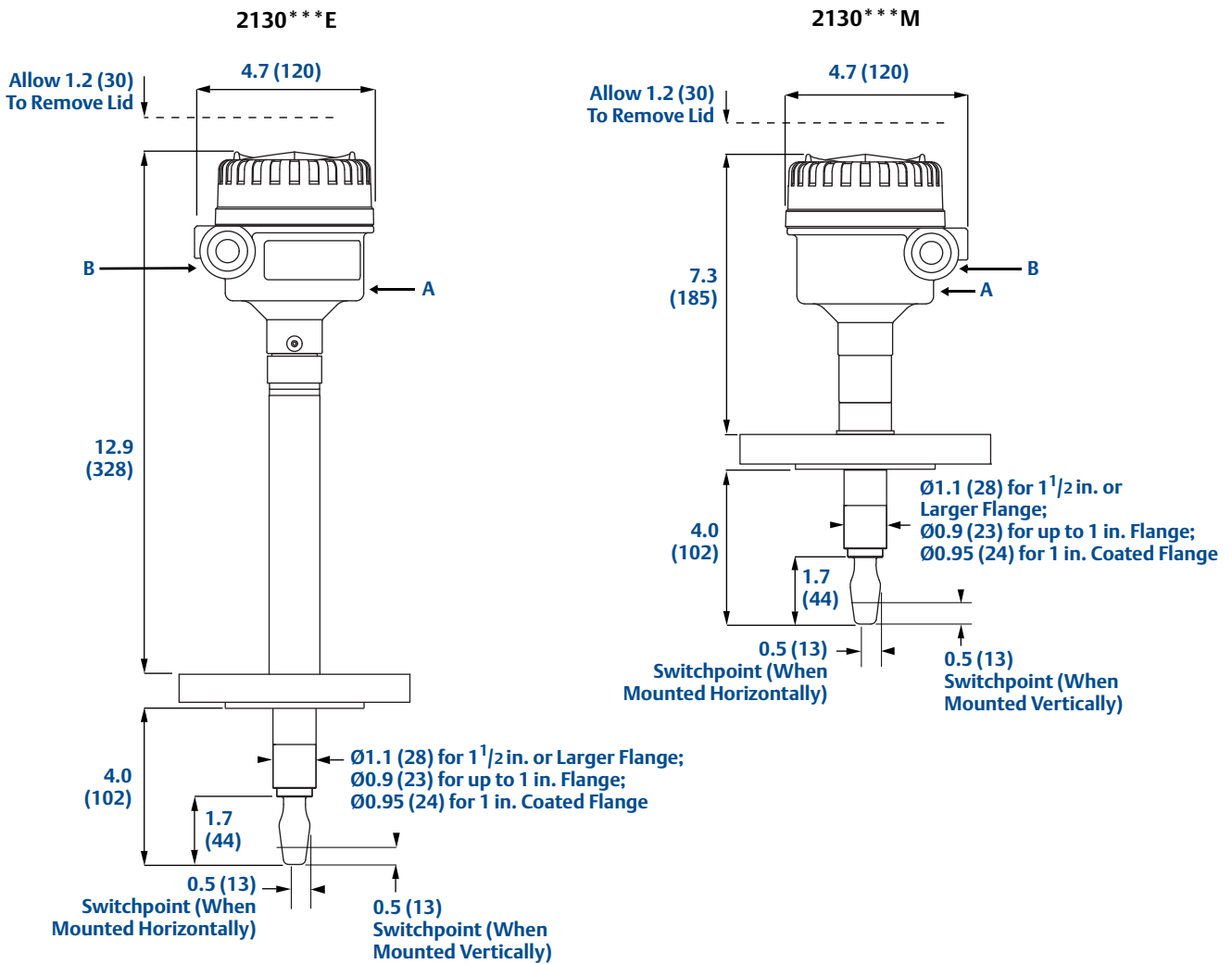
Table 7. Fork length for threaded 2130

Process Connection	Standard Length Fork Length Code A	Minimum Length Fork Length Code E (M)	Maximum Length Fork Length Code E (M) ⁽¹⁾
3/4-in. Thread	1.7 in. (44 mm)	3.75 in. (95 mm)	157.5 in. (4000 mm)
1-in. Thread	1.7 in. (44 mm)	3.74 in. (94 mm)	157.5 in. (4000 mm)

(1) Maximum extended length of fork with hand-polished option is 39.4 in. (1000 mm).

Flange mounting (standard length)

Note: Dimensions are in inches (millimeters)



A. Aluminum or SST Housing

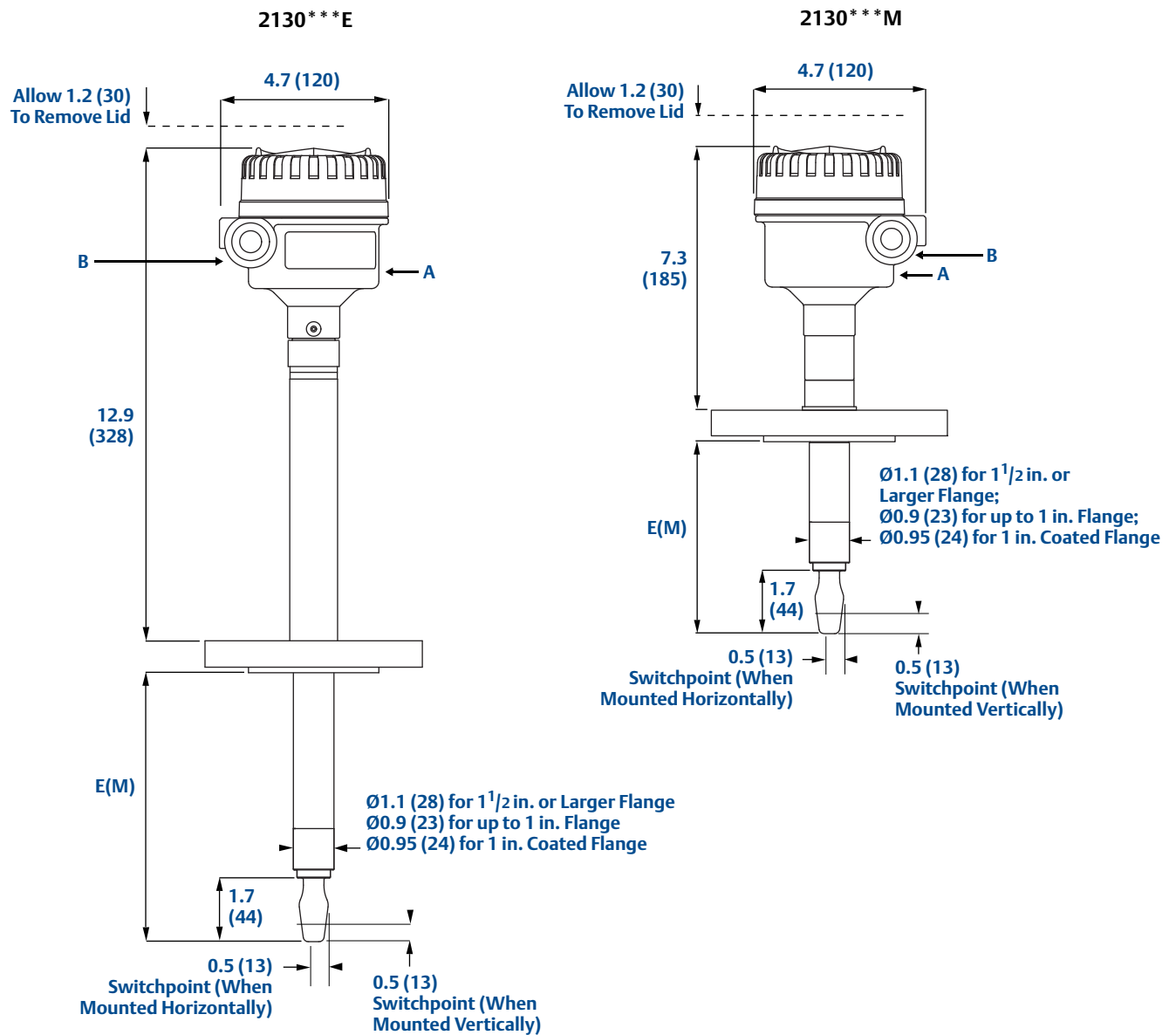
B. Cable Entry M20x1.5 or ¾-in. NPT

C. 1.575 (40) A/F Hexagon

D. ¾-in. or 1-in. Thread

Flange mounting (extended length)

Note: Dimensions are in inches (millimeters)



- A. Aluminum or SST Housing
- B. Cable Entry M20x1.5 or 3/4-in. NPT

Table 8. Fork length for flanged 2130

Material	Standard Length Fork Length Code H	Minimum Length Fork Length Code E(M)	Maximum Length Fork Length Code E(M) ⁽¹⁾
Stainless Steel	4.0-in. (102 mm)	3.5 in. (89 mm)	157.5 in. (4000 mm)
ECTFE/PFA Copolymer Coated	4.0-in. (102 mm)	3.5 in. (89 mm)	59.1 in. (1500 mm)

(1) Maximum extended length of fork with hand-polished option is 39.4 in. (1000 mm).

Emerson Process Management

Rosemount Inc.
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (USA) 1 800 999 9307
T (International) +1 952 906 8888
F +1 952 906 8889
www.rosemount.com

Emerson Process Management

Neuhofstrasse 19a
CH 6341 Baar
Switzerland
T +41 (0) 41 768 61 11
F +41 (0) 41 76 1 87 40
www.rosemount.com

Emerson Process Management

Asia Pacific Pte Ltd
1 Pandan Crescent
Singapore 128461
T +65 6777 8211
F +65 6777 0947
Service Support Hotline: +65 6770 8711
Email: Enquiries@AP.EmersonProcess.com
www.rosemount.com

Emerson Process Management

Latin America
1300 Concord Terrace, Suite 400
Sunrise Florida 33323 USA
T + 1 954 846 5030
www.rosemount.com

Standard Terms and Conditions of Sale can be found at www.rosemount.com/terms_of_sale

The Emerson logo is a trade mark and service mark of Emerson Electric Co.
Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc.
PlantWeb is a registered trademark of one of the Emerson Process Management group of companies.
HART and WirelessHART are registered trademarks of the HART Communication Foundation
All other marks are the property of their respective owners.
© 2014 Rosemount Inc. All rights reserved.