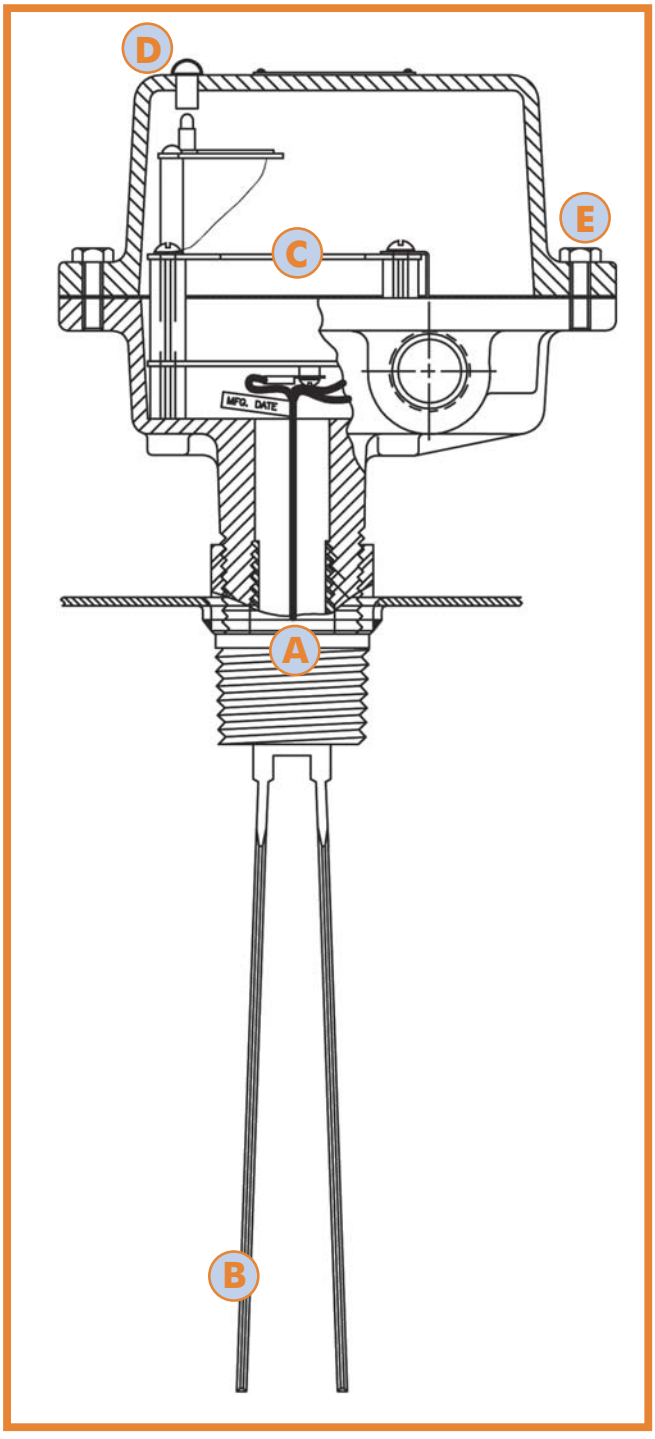
genuine BINDICATOR®

Pulse Point™

Level Control

PULSE POINT™ LEVEL CONTROL

The Pulse Point™ is an electronic vibratory level control especially effective in lightweight powders and granular solids. Because the Pulse Point™ senses material using a mechanical principle, the dielectric constant of the material is irrelevant.



Features

- No calibration required
- 1 1/4" or 1 1/2" NPT top or side mount
- Dual-tine, self-cleaning action
- Field selectable fail-safe operation
- Adjustable time delay
- Senses densities as low as 2lbs/ft^3 (32 kg/m^3)
- Dual tines prevent rat holing
- Lexan Light Guide (D) does not crack, leak and is impervious to sunlight
- Captive Screws (E)

How the Pulse Point™ Works

- The Pulse Point™ uses a vibrating "tuning fork" to sense the presence of material.
- Piezoelectric crystals (A) in the base of the fork create and sense movement of the tines (B). The electronics (C) and transmit crystal drive the oscillation, and when in air, the tines vibrate at about 100 Hz.
- When material contacts the fork tip, the oscillation diminishes because the fork is now dampened by material contact.
- The receive crystal senses this difference and changes the state of the output relay.

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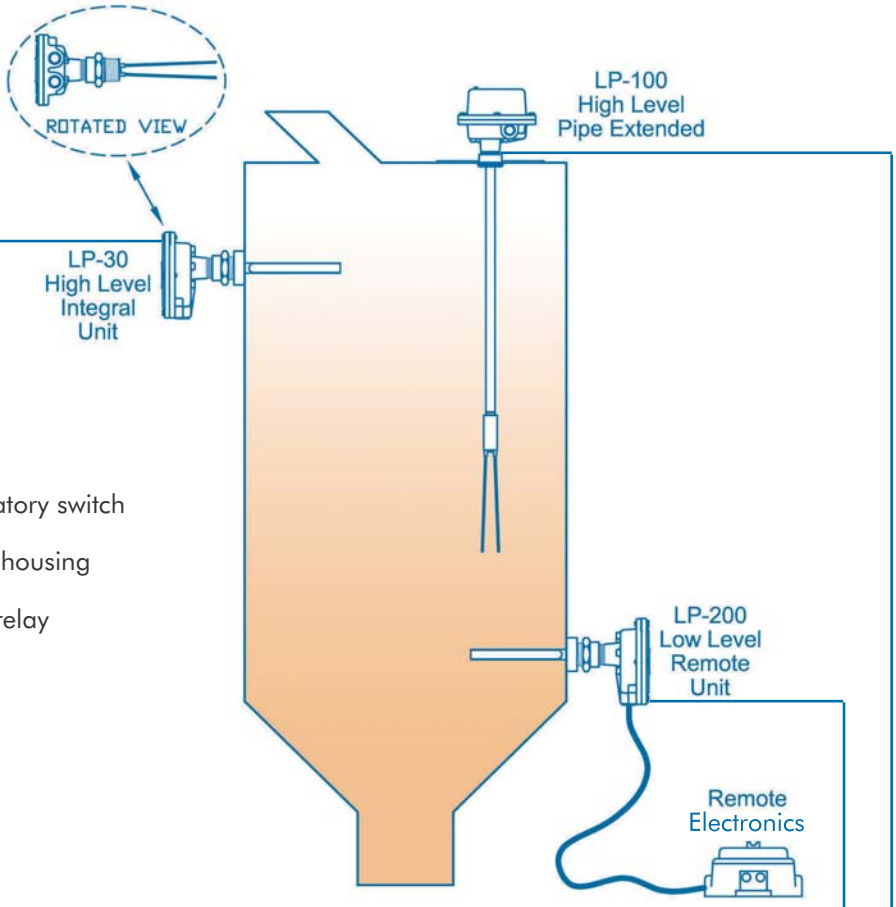

LP - 30

- Low cost vibratory switch
- Dual conduit housing
- SPDT output relay

LP - 100

- External function test using fob
- External LED operation and alarm lights
- DPDT output relay

LP - 200

- Remote version of LP-100
- High temperature applications up to 248°F (120°C)
- High vibration or difficult access conditions

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The LP-100 Pulse Point™ is a self-contained level switch. Electronics and sensing fork are integrally mounted. External function test using a fob means tank entry or removal of unit is not necessary to test for proper function. External green LED indicates proper fork operation while red LED indicates material presence at probe.

Specifications

LP-100

Power Requirements	120 VAC or 240 VAC, 50/60 Hz
Power Consumption	5 VA
Operating Temperature	Electronics: -40° F to 175° F (-40° C to 80° C) Tuning Fork: -55° F to 248° F (-48° C to 120° C)
Output	5A DPDT @ 125 VAC or 28 VDC
Pressure Rating	150 psi (10.5 kg/cm^2) with 1½" NPT 5 psi (0.35 kg/cm^2) with mounting plate
Time Delay	Field programmable: ON, OFF or both Adjustable (0-25 sec)
Fail Safe	Field selectable high/low level
Enclosure Material	Polyester coated aluminum or 304 SS
Enclosure Rating	General Purpose NEMA 4X, Explosion proof NEMA 9
Tuning Fork	316 SS standard; 316 SS with Teflon coating; 316 SS liquid/solid interface
Conduit Entry	¾" NPT
Mounting	1½" or 1¼" NPT Extended forks can be mounted directly through 1½" or 1¼" NPT coupling Mild Steel or 304 SS Mounting Plate
Extended Pipe Material	Galvanized or 316 SS
Maximum Pipe Extension	10ft (3m)
Status Indicator	External Green LED: power External Red LED: alarm
Minimum Material Density	2 lbs/ft^3 (32 kg/m^3)

Note: Function Test not available on stainless steel enclosure

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Dimensions

Ordering Information

LP1 - __ - __ - __ - __ - __ - **30** - __ - __ **(Maximum - 120") (3048mm)**

Type (Specify insertion length in inches if applicable)
0 = No Pipe Extension (Standard NPT Mounting)
A = Galvanized ¾" Pipe Extension
B = 316 SS ¾" Pipe Extension
1 = Mild Steel Mounting Plate & Galvanized 3/4" Pipe Extension
3 = 304 SS Mounting Plate & 316 SS 3/4" Pipe Extension

Mounting Configuration
A = 1½" NPT Mounting
C = 1½" Pipe Extended (High Temperature Cable)
D = 1¼" Pipe Extended (Only Available With Type 1 Tuning Fork & High Temp Cable)
E = 1¼" NPT Mounting (Only Available With Type 1 Tuning Fork & High Temp Cable)

Enclosure Rating
G = General Purpose - NEMA 4X
D = Dust Ignition Proof - NEMA 9 CSA Approved (See Note 2)

Voltage
1 = 120VAC
2 = 240VAC

Enclosure Material
A = Aluminum, Polyester Coated
S = 304 SS (Function Test Not Available With SS Enclosure)

Tuning Fork
1 = 316 SS
3 = 316 SS - Teflon Coating
5 = Liquid/Solid Interface - 316 SS

Pulse Point™ LP-100 Integral Unit

Note 1: For direct replacement of Roto-Bin-Dicator control, order the 1¼ " Pulse Point mounting configuration.
Note 2: Approvals for LP-100 & LP-200 are as follows:

- CSA on all 1½ " & 1¼" configurations of LP-100 & LP-200 for general purpose.
- CSA on all 1½" configurations of LP-100 & LP-200 for Dust Ignition Proof (Class II Groups E, F, G).
- Pipe extended models are not included in the FM approval.
- Dust ignition proof on aluminum enclosure only - NOT available with stainless steel enclosure.

Note 3: For mounting types 1 through 8, which were furnished on older units, consult factory for cross reference.

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The LP-200 Pulse Point™ has remote electronics for high temperature, high vibration or difficult access conditions. The LP-200 offers external function test and external status indication at ground level.

Specifications

LP-200

Power Requirements	120 VAC or 240 VAC, 50/60 Hz
Power Consumption	5 VA
Operating Temperature	Electronics: -40° F to 175° F (-40° C to 80° C) Tuning Fork: -55° F to 248° F (-48° C to 120° C)
Output	5A DPDT @ 125 VAC or 28 VDC
Pressure Rating	150 psi (10.5 kg/cm^2) with 1½" NPT 5 psi (0.35kg/cm^2) with mounting plate
Time Delay	Field programmable: ON, OFF or both; Adjustable (0-25 sec)
Fail Safe	Field selectable high/low level
Enclosure Material	Polyester coated aluminum or 304 SS
Enclosure Rating	General Purpose NEMA 4X, Explosion proof NEMA 9
Tuning Fork	316 SS standard; 316 SS with Teflon coating; 316 SS liquid/solid interface
Conduit Entry	¾" NPT
Mounting	1½" or 1¼" NPT Extended forks can be mounted directly through 1½" or 1¼" NPT coupling Mild Steel or 304 SS Mounting Plate
Extended Pipe Material	Galvanized or 316 SS
Maximum Pipe Extension	10ft (3m)
Status Indicator	External Green LED: power External Red LED: alarm
Minimum Material Density	2 lbs/ft^3 (32 kg/m^3)

Note: Function Test not available on stainless steel enclosure

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Ordering Information

LP-200 Remote Electronics

LP2 - __ - __ - 20 - __

Electronic Types
0= Standard
1= Liquid/Solid Interface

Voltage
1 = 120VAC
2 = 240VAC

Enclosure Type (See Note 2)
G = General Purpose NEMA 4X
X = Explosionproof NEMA 7/9 - FM & CSA Approved (See Note 2 pg. 5)

Pulse Point™ LP-200 Electronics

LP-200 Remote Sensing Tuning Fork

LP2 - __ - __ - __ - __ - __ - **30** - __ - __ **(Maximum - 120") (3048mm)**

Type (Specify insertion length in inches if applicable)
0 = No Pipe Extension (Standard NPT Mounting)
A = Galvanized 3/4" Pipe Extension
B = 316 SS 3/4" Pipe Extension
1 = Mild Steel Mounting Plate & Galvanized 3/4" Pipe Extension
3 = 304 SS Mounting Plate & 316 SS 3/4" Pipe Extension

Mounting Configuration
A = 1-1/2" NPT Mounting
C = 1-1/2" Pipe Extended (High Temperature Cable)
D = 1-1/4" Pipe Extended (Only Available With Type 1 Tuning Fork & High Temp Cable)
E = 1-1/4" NPT Mounting (Only Available With Type 1 Tuning Fork & High Temp Cable)

Enclosure Rating
G = General Purpose - NEMA 4X
D = Dust Ignition Proof - NEMA 9 CSA Approved (See Note 2 pg. 5)

Enclosure Material
A = Aluminum, Polyester Coated
S = 304 SS (Function Test Not Available With SS Enclosure)

Tuning Fork
1 = 316 SS
3 = 316 SS - Teflon Coating
5 = Liquid/Solid Interface - 316 SS

Pulse Point™ LP-200

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The LP-30 Pulse Point™ is a low cost, self-contained level switch. Dual conduit housing allows for ease of installation and the separation of input wiring and alarm wiring.

Specifications

LP-30

Power Requirements	120 VAC or 240 VAC or 100 VAC, 50/60 Hz
Power Consumption	5 VA
Operating Temperature	Electronics: -40° F to 175° F (-40° C to 80° C) Tuning Fork: -55° F to 248° F (-48° C to 120° C)
Output	6A SPDT @ 240 VAC or 28 VDC
Pressure Rating	150 psi (10.5 kg/cm²) with 1½" NPT 5 psi (0.35kg/cm²) with mounting plate
Time Delay	Field programmable: ON, OFF or both; Adjustable (0-25 sec)
Fail Safe	Field selectable high/low level
Enclosure Material	Polyester coated aluminum or 304 SS
Enclosure Rating	General Purpose NEMA 4X
Tuning Fork	316 SS standard; 316 SS with Teflon coating
Conduit Entry	Dual ¾" NPT
Mounting	1½" or 1¼" NPT Extended forks can be mounted directly through 1½" or 1¼" NPT coupling Mild Steel or 304 SS Mounting Plate
Extended Pipe Material	Galvanized or 316 SS
Maximum Pipe Extension	10ft (3m)
Status Indicator	None
Minimum Material Density	2 lbs/ft³ (32 kg/m³)

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Ordering Information

LP3 - ___ - A - ___ - G - ___ - 10 - ___ - __ (Maximum - 120") (3048mm)

Type (Specify insertion length in inches if applicable*)
0 = No Pipe Extension (Standard NPT Mounting)
A = Galvanized 3/4" Pipe Extension
B = 316 SS 3/4" Pipe Extension
1 = Mild Steel Mounting Plate & Galvanized ¾ " Pipe Extension
3 = 304 SS Mounting Plate & 316 SS ¾ " Pipe Extension

Mounting Configuration
A = 1½" Mounting
B = 1½" Pipe Extended
C = 1¼" Mounting
D = 1¼" Pipe Extended

Enclosure Rating
G = General Purpose, NEMA 4X

Voltage
1 = 120 VAC
2 = 240 VAC
3 = 100 VAC (Consult Factory)

Enclosure Material
A = Aluminum, Polyester Coated

Tuning Fork
1 = 316 Stainless Steel
3 = Teflon Coated

Pulse Point™ LP-30

Note: For direct replacement of a rotary type control, order the 1¼" Pulse Point mounting configuration.

* See pipe extension drawing

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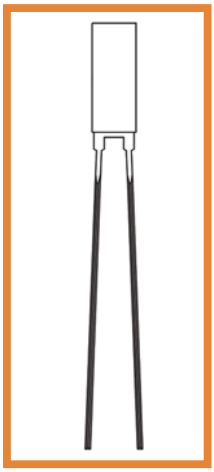
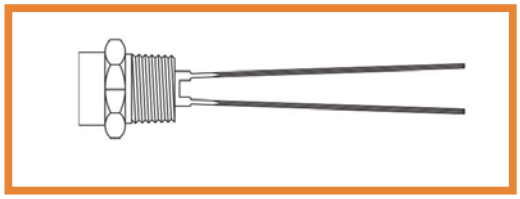


Forks

Dual tine, self-cleaning action of the Pulse Point tuning fork prevents rat holing.

- 316 Stainless Steel for general purpose applications
- Teflon® coated for corrosive or sticky applications
- Liquid/solid interface - 316 SS for bulk solid materials submerged in liquid (LP-100 and LP-200 only)



Pipe Extensions

Pipe extensions allow the tuning forks to be side mounted to keep the forks out of the flow stream or vertically extended into silos when side mounting is not an option.

- High level alarm
- Liquid/solid interface
- 316 SS ¾" pipe
- Galvanized ¾" pipe
- No need for flange or mounting plate
- 1½" forks pass through 1½" coupling, will not pass through 1½" pipe
- 1¼" forks pass through 1¼" coupling, will not pass through 1¼" pipe

Time Delay

Adjustable time delay allows the Pulse Point to delay status indication when material contacts the fork, when material frees the fork, or both.

Agency Approvals

CSA lists various LP-100 and LP-200 models for Nonhazardous locations, Explosion Proof, Class I, Groups C,D and Dust Ignition Proof, Class II, Groups E,F,G.

Factory Mutual lists various LP-100 and LP-200 models for Explosion Proof, Class I, Div 1, Groups C,D and Dust Ignition Proof, Class II, Div 1, Groups E,F,G. Pipe extended models are not included. Factory Mutual lists the LP-30 for Class II.

FM APPROVED

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Mounting

Pulse Point™ level controls can be used as a direct replacement for any rotary, tilt-switch or capacitance level switch

- Bin-Top
- Bin-Side
- Threaded
- Flanged
- Roto-Bin™ mounted
- Pipe Extended
- No special flanges or couplings necessary with 1¼" NPT top or side mount

Applications

The Pulse Point™ products are designed for use in dry materials that are heavily aerated such as:

- Plastic
- Sawdust
- Insulation
- Reground plastic film
- Carbon black
- Light fibers
- Tobacco
- Paper shavings
- Dry cereals
- Cement
- Sand
- Clay
- Grain
- Flour

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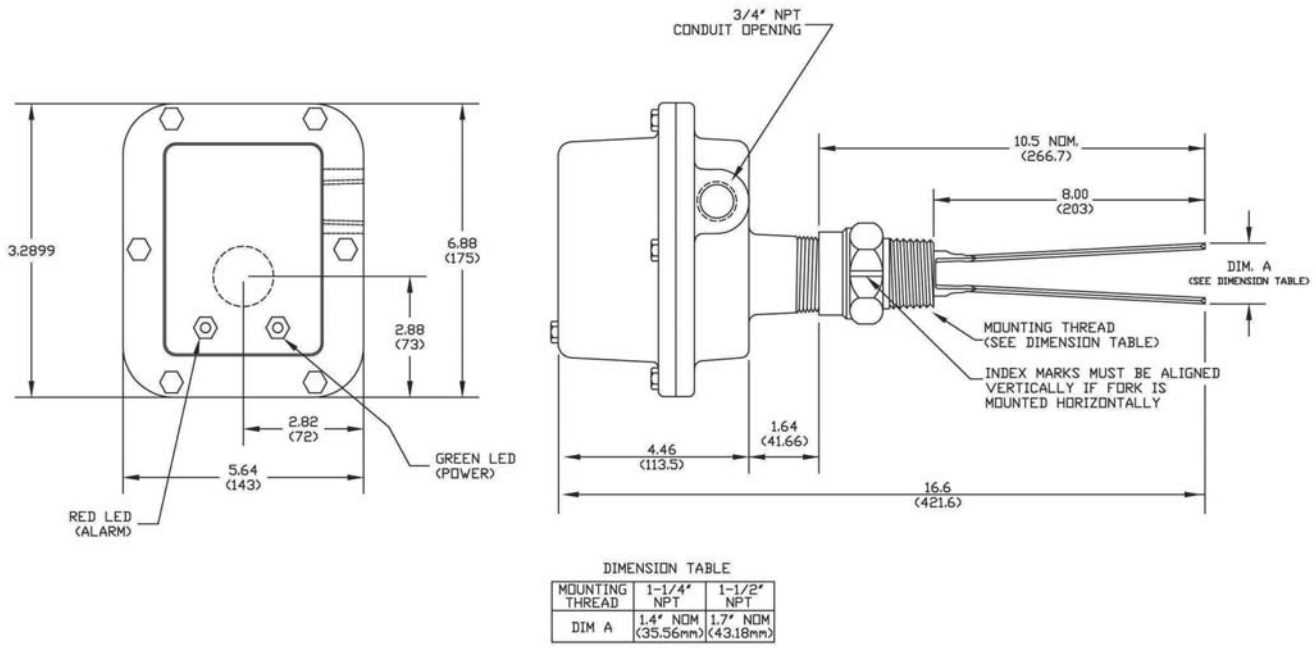
Dimensions

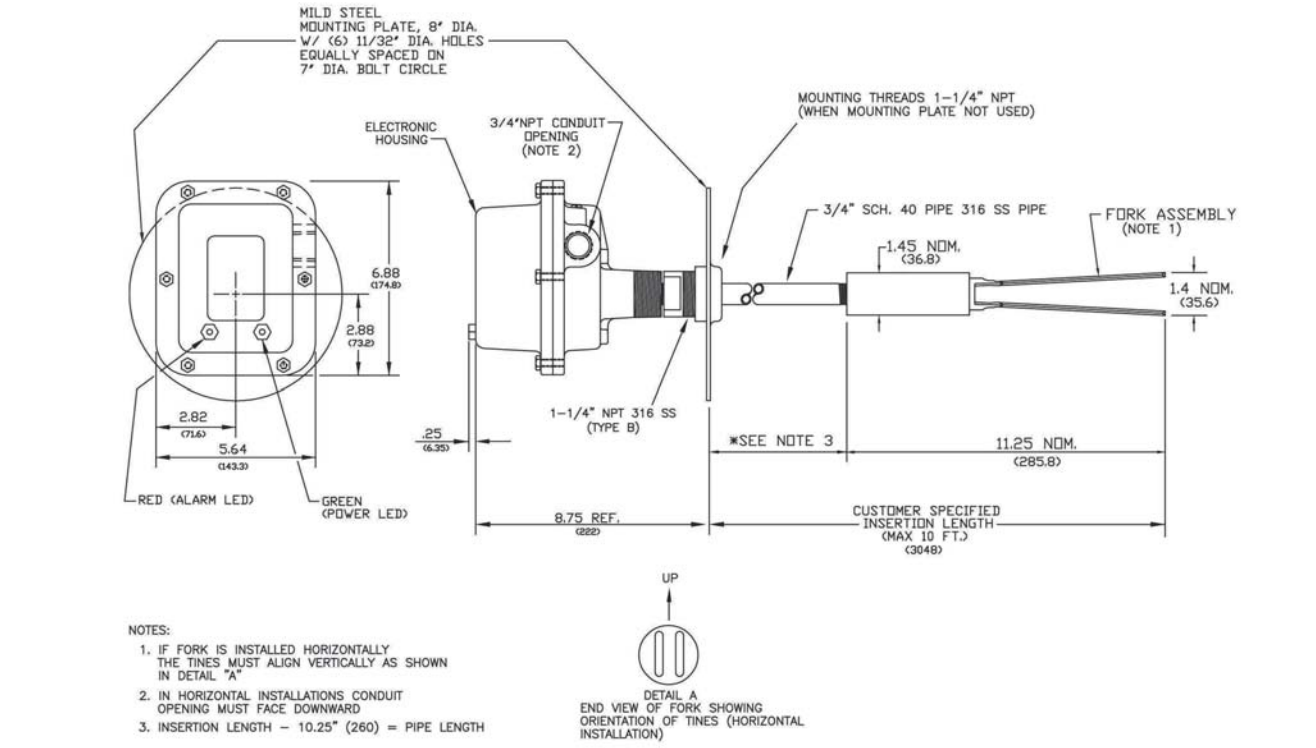
Standard LP-100, 1¼" NPT & 1½" NPT Forks, also available in LP-200 and LP 30



DIMENSION TABLE

MOUNTING THREAD	1-1/4" NPT	1-1/2" NPT
DIM A	1.4" NOM (35.56mm)	1.7" NOM (43.18mm)

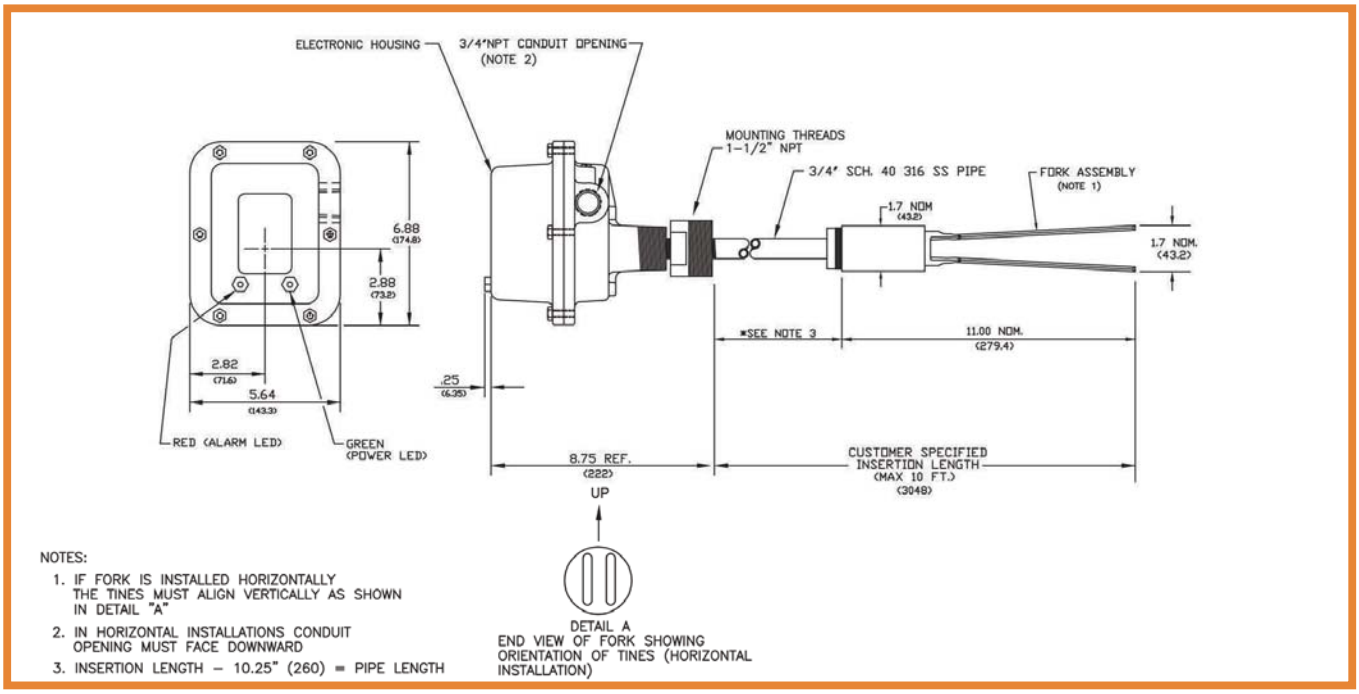
LP-100 with 1¼" NPT, 316 Stainless Steel Extension, (Type B and 3)



NOTES:

1. IF FORK IS INSTALLED HORIZONTALLY THE TINES MUST ALIGN VERTICALLY AS SHOWN IN DETAIL "A"
2. IN HORIZONTAL INSTALLATIONS CONDUIT OPENING MUST FACE DOWNWARD
3. INSERTION LENGTH – 10.25" (260) = PIPE LENGTH

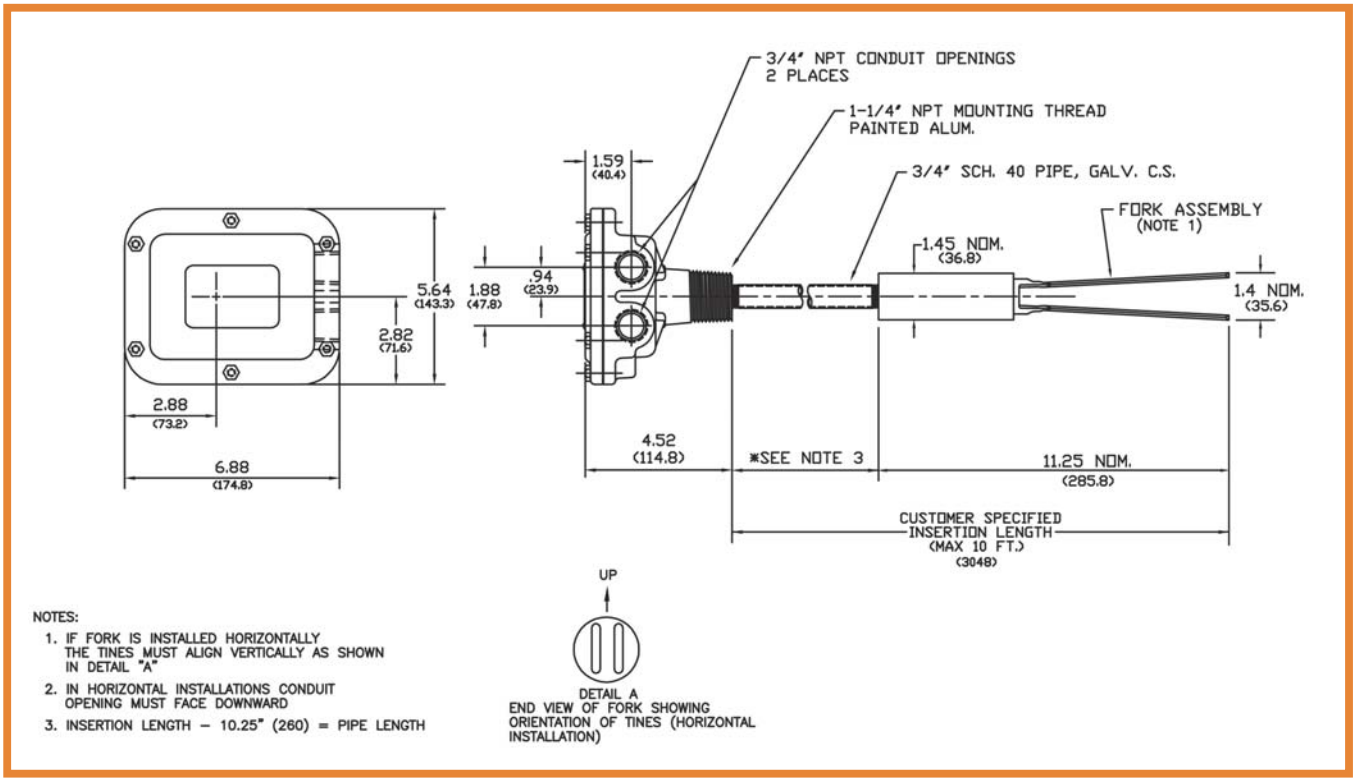
LP-100 with 1½" NPT, 316 Stainless Steel Extension (Type B)



NOTES:

1. IF FORK IS INSTALLED HORIZONTALLY THE TINES MUST ALIGN VERTICALLY AS SHOWN IN DETAIL "A"
2. IN HORIZONTAL INSTALLATIONS CONDUIT OPENING MUST FACE DOWNWARD
3. INSERTION LENGTH – 10.25" (260) = PIPE LENGTH

LP-30, 1¼" NPT Galvanized Pipe Extension (Type A)



NOTES:

1. IF FORK IS INSTALLED HORIZONTALLY THE TINES MUST ALIGN VERTICALLY AS SHOWN IN DETAIL "A"
2. IN HORIZONTAL INSTALLATIONS CONDUIT OPENING MUST FACE DOWNWARD
3. INSERTION LENGTH – 10.25" (260) = PIPE LENGTH

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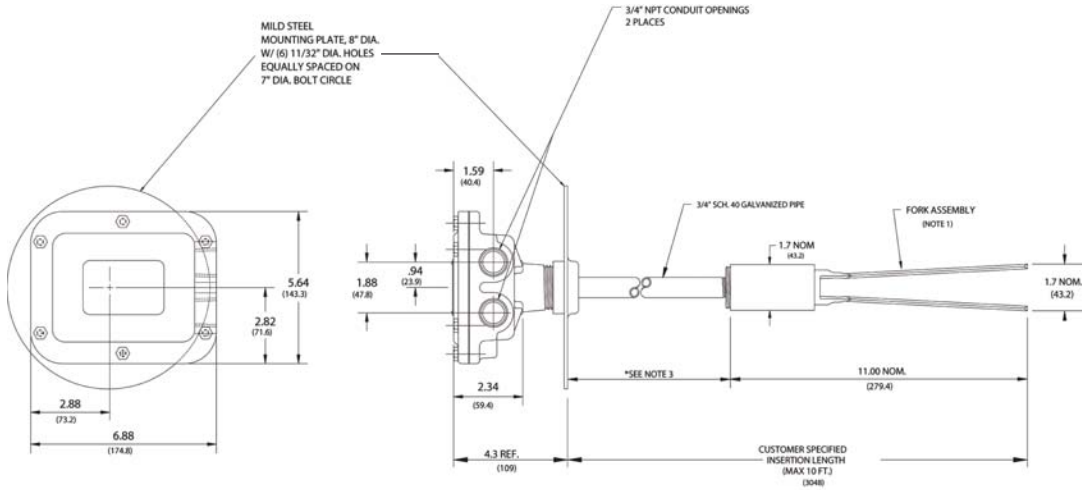
LP-30, 1½" NPT Galvanized Pipe Extension (Type 1 c/w Mtg. Plate)

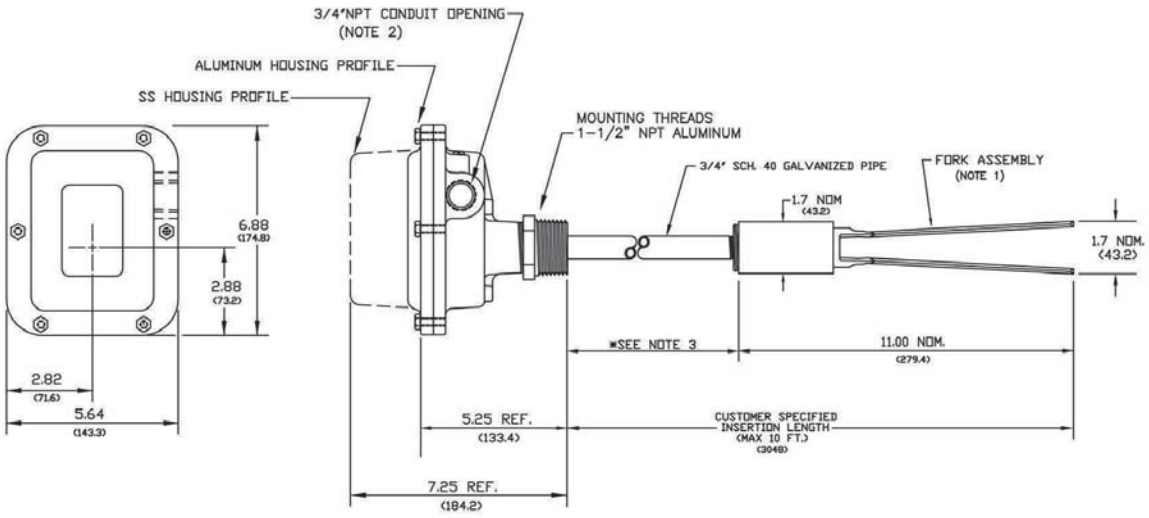


NOTES:

1. IF FORK IS INSTALLED HORIZONTALLY THE TINES MUST ALIGN VERTICALLY AS SHOWN IN DETAIL "A"
2. IN HORIZONTAL INSTALLATIONS CONDUIT OPENING MUST FACE DOWNWARD
3. INSERTION LENGTH - 10.25" (260) = PIPE LENGTH

DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)

LP-200, 1½" NPT Galvanized Pipe Extension (Type A)



NOTES:

1. IF FORK IS INSTALLED HORIZONTALLY THE TINES MUST ALIGN VERTICALLY AS SHOWN IN DETAIL "A"
2. IN HORIZONTAL INSTALLATIONS CONDUIT OPENING MUST FACE DOWNWARD
3. INSERTION LENGTH – 11" (279.4) = PIPE LENGTH

DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)

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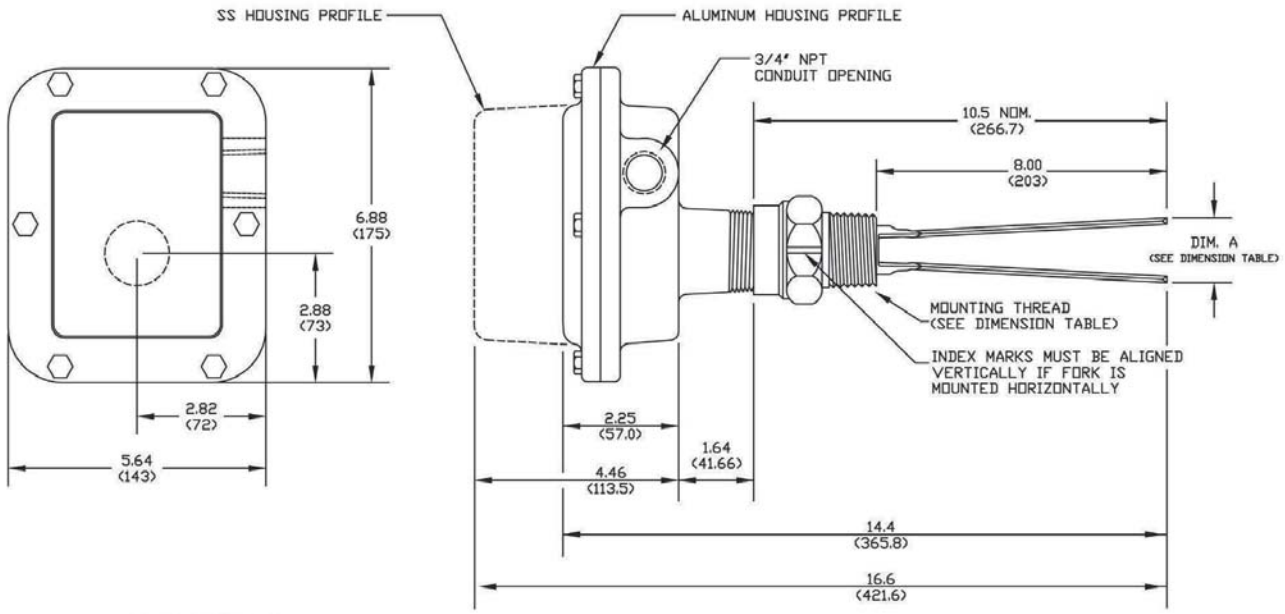
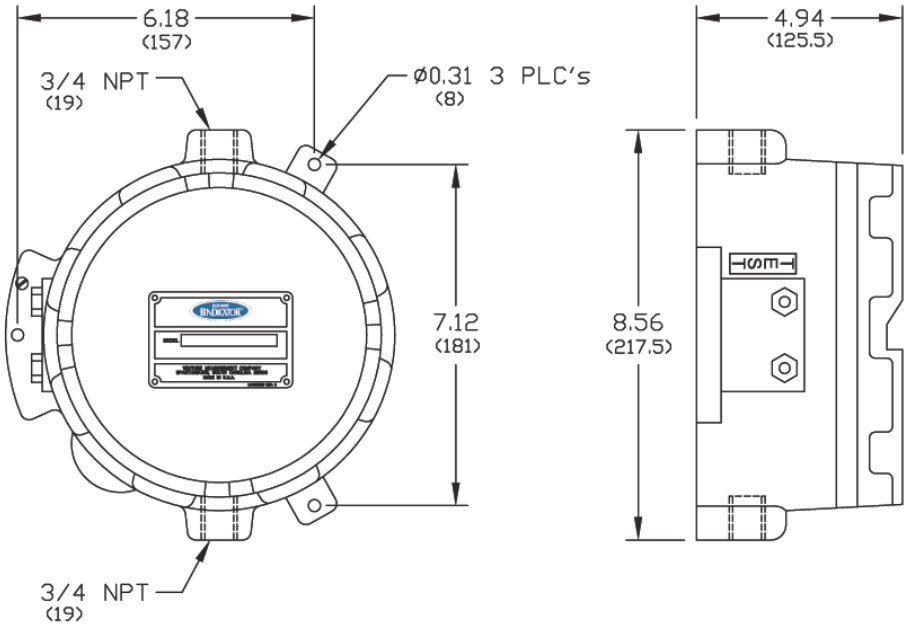
LP-200, 1¼" NPT and 1½" NPT Forks



DIMENSION TABLE

MOUNTING THREAD	1-1/4" NPT	1-1/2" NPT
DIM A	1.4" NOM (35.56mm)	1.7" NOM (43.18mm)

Remote Electronics LP-200



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