IOM

LP-100 & LP-200 Pulse Point™ Installation & Operation Manual

CAUTION
It is essential that all instructions in this manual be followed precisely to ensure proper operation of the equipment.

SAFETY INFORMATION

Before installing the Pulse Point™ level switch, please read these instructions and be completely familiar with the requirements and functions of the sensor.

DO NOT dispose of the carton or packing material until the unit has been inspected for damage. If the unit is received damaged, notify the carrier or the factory for instructions. Failure to do so may void your warranty.

The Pulse Point™ sensor is a precision device. Very high voltage is present on the fork terminals. Always remove power before servicing.

All wiring must conform to current National Electrical Code (NEC) requirements or local electrical codes.

If any questions or problems arise during the installation of this equipment, please contact the Bindicator® Applications Department at (800) 778.9242 or (864) 574.8960.

LP-100 & LP-200 Pulse Point™ Installation & Operation Manual

CONTENTS

CHAPTER 1. PRODUCT DESCRIPTION

FUNCTION

The Pulse Point™ is an electronic, vibratory level control designed for use in powders and granular solids. The Pulse Point™ uses a vibrating tuning fork to sense the presence of material.

The tuning fork contains two piezoelectric crystal assemblies: one “transmit” and one “receive” piezoelectric crystal converts electrical signals to mechanical movement, and vice versa. High voltage pulses applied to the transmit crystal cause the tines of the fork to vibrate. This vibration is mechanically coupled to the receive crystal which produces a small electrical signal (1V pulses). The receive crystal will produce low voltage pulses as long as the fork is vibrating.

If the fork stops vibrating, as it does when in contact with material in the vessel, the receive pulses stop. The electronics recognize this loss of signal and cause the output relay to change state.

A block diagram of the Pulse Point™ circuit is shown in Figure 1.1. The power supply converts 120VAC or 240VAC primary power to the various DC voltages required. The pulse shaper and control amplifier produce the high voltage pulses required by the transmit crystal. The low voltage pulses from the receive crystal are fed back to the control amplifier to help sustain vibration of the fork. The receive
signal is also applied to the relay comparator through the time delay circuit and the fail-safe select jumpers. The relay comparator senses when the fork has stopped vibrating and causes the relay to change state.

The test circuit simulates a loss of receive signal, thus effectively exercising all portions of the Pulse Point™ circuit.

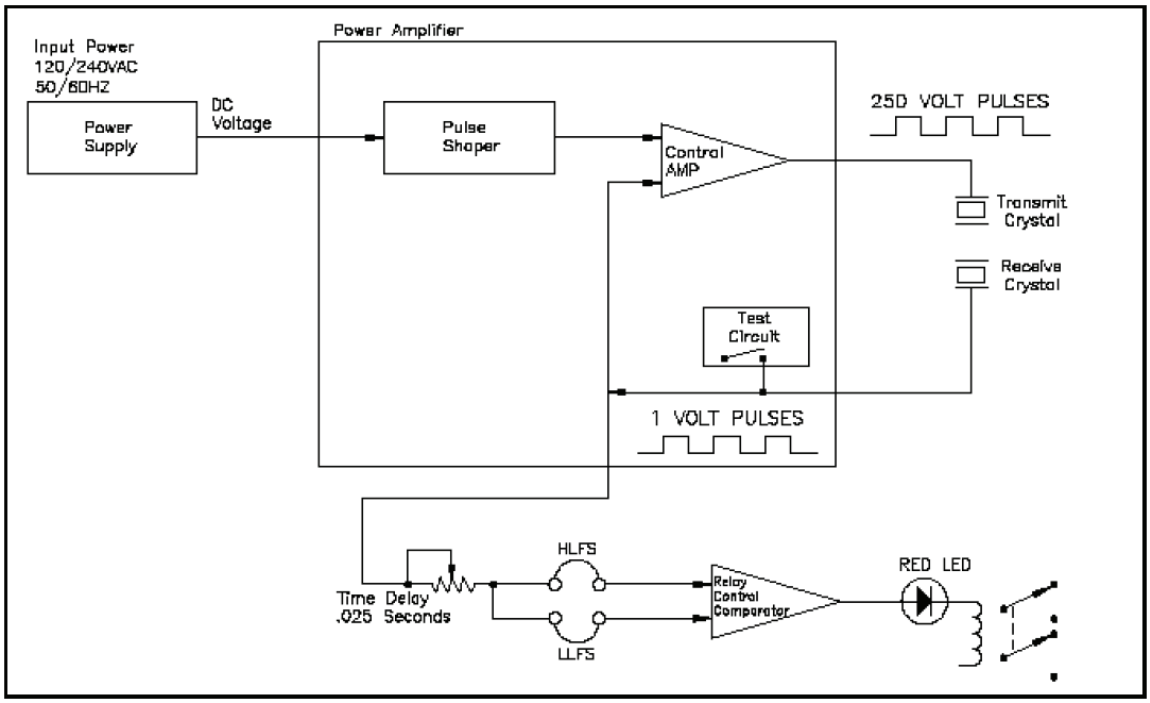


Figure 1.1 - Block Diagram of the Pulse Point™ Circuit.

APPLICATIONS

Unlike radio frequency and capacitance technology sensors, the Pulse Point™ senses material using a mechanical principle and is not affected by the dielectric constant of the material. This makes it an ideal sensor in plastics, dust, shavings, and low density powders and food. The Pulse Point™ can easily sense material as light as 2 lb/ft^3 (32kg/m^3). It can be applied in any free-flowing dry material up to 9/16” in. (14.3mm) in particle size.

FEATURES

- Various models, mounting configurations, and fork coatings are available to suit almost any application
- No calibration required
- Selectable fail-safe operation (HIGH or LOW level)
- Adjustable time delay
- External self test feature
- External LEDs show operating status or alarm
- Test fob for instrument status

The Pulse Point™ LP-100 Series are integral units which have the electronics and tuning fork in the same enclosure. The fork may be pipe extended up to a 15 ft. (4.572m) insertion length.

The Pulse Point™ LP-200 Series are remote units which have the electronics and tuning fork in separated enclosures. The fork may be pipe extended up to 15 ft. (4.572m). The maximum distance between the fork and electronics is 100 ft. (30.48m) with low temperature cable and 50 ft. (15.24m) with high temperature cable.

The Pulse Point™ Explosion Proof may have a pipe extension up to 10 ft.

TECHNICAL SPECIFICATIONS

Power Requirements	120VAC or 240VAC or 100VAC, 50/60Hz
Power Consumption	5VA
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 at 125VAC or 28VDC
Pressure Rating	150psi (10.5kg/cm^2) with 1.5 in. NPT; 5psi (0.35kg/cm^2) with mounting plate
Time Delay	Field programmable: ON, OFF, or both; Adjustable (0s - 25s)
Fail-Safe	Field selectable HIGH/LOW level
Enclosure Material	Polyester coated aluminum or 304 stainless steel
Enclosure Rating	General purpose, NEMA 4X; Explosionproof model rated NEMA 4X, Class I, Groups C and D, Class II, Groups E, F, and G, and Class III
Tuning Fork	316 stainless steel standard; 316 stainless steel with Teflon coating; 316 stainless steel liquid/solid interface
Conduit Entry	¾" NPT
Process Mounting	1½" or 1¼" NPT; Extended forks can be mounted directly through 1½" or 1¼" NPT coupling
Mounting Plate Material	Mild steel, 304 stainless steel
Extended Pipe Material	Galvanized or 316 stainless steel
Maximum Pipe Extension	15 ft. (4.572m)
Status Indicator	External green LED for power, external red LED for alarm
Minimum Material Density	2 lb./$ft.^3$ (32kg/m^3)

DIMENSIONS

Figures 1.5 and 1.6 illustrate the dimensions of the standard 1½ in. and 1¼ in. LP-100 and LP-200 units. See the Appendix for additional dimensions.

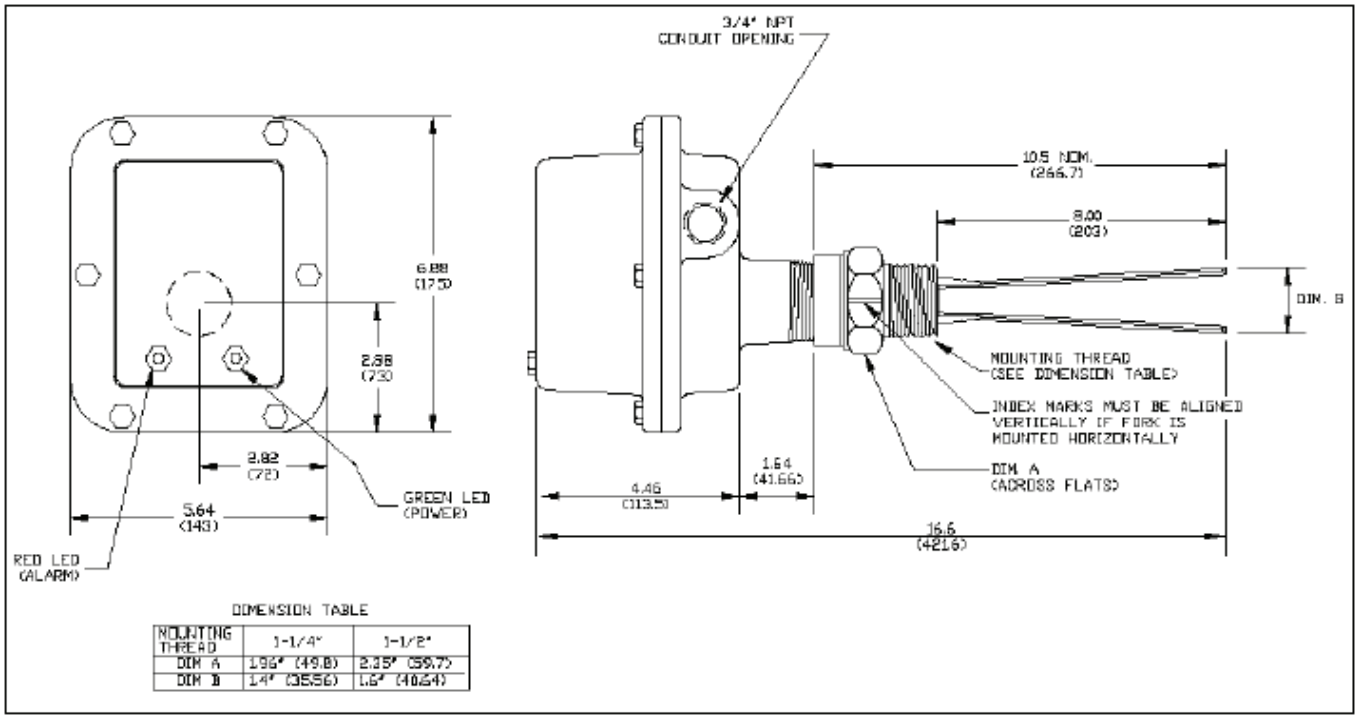


Figure 1.5 - Pulse Point™ LP-100 Series Dimensions.

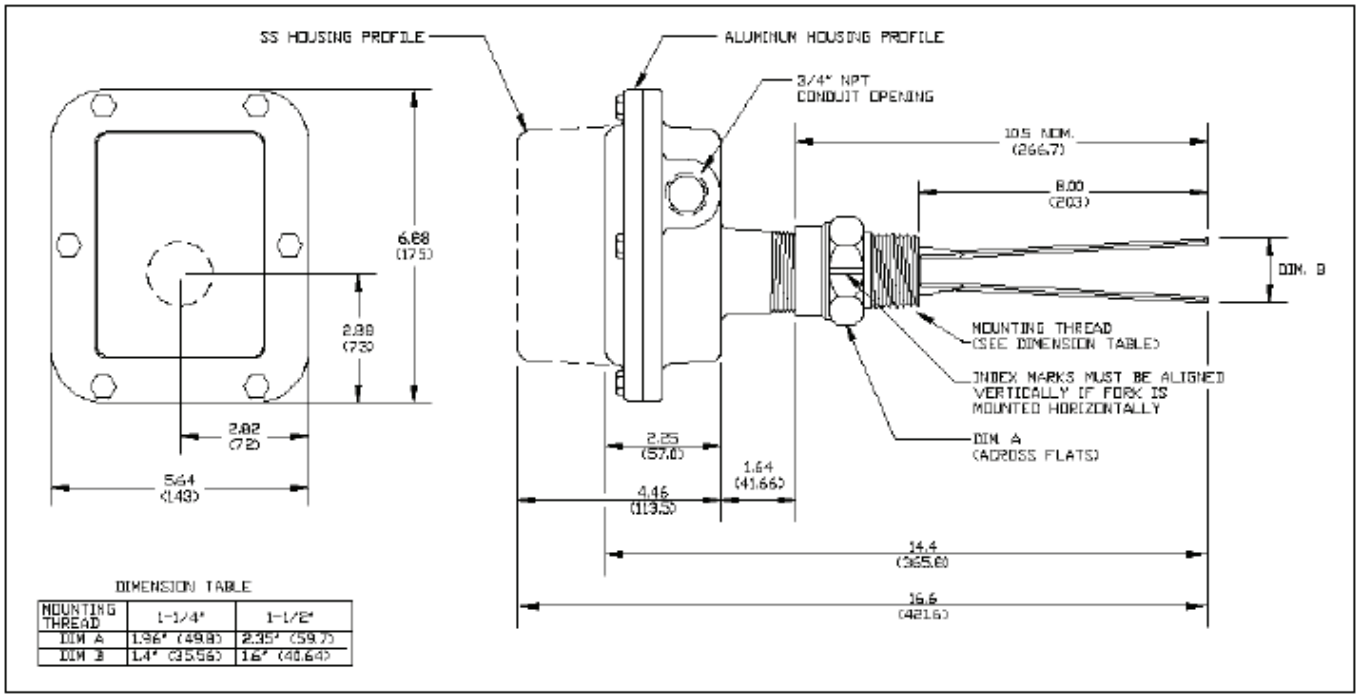


Figure 1.6 - Pulse Point™ LP-200 Series Dimensions.

CHAPTER 2. HANDLING AND STORAGE

INSPECTION AND HANDLING

Each package should be inspected upon receipt for damage that may have occurred due to mishandling during shipping. If damage is discovered, notify the shipping carrier immediately. DO NOT dispose of the carton or packing materials. If you have any problems or questions, consult Bindicator® Customer Care at (800) 778.9242 or (864) 574.8060.

STORAGE

If the Pulse Point™ sensor is not scheduled for immediate installation following delivery, the following steps should be observed:

1. Following inspection, repackage the unit into its original packaging.
2. Select a clean, dry site for storage. This site should be free of vibration, shock, and impact hazards.
3. If storage will be extended longer than 30 days, the unit must be stored in a non-condensing atmosphere less than 100% humidity.

DO NOT store a non-powered unit outdoors for a prolonged period.

CHAPTER 3. MECHANICAL INSTALLATION

GUIDELINES

The following precautions should be observed when installing and operating the Pulse Point™.

- The tuning fork assembly is a precision device. Handle it carefully!
- Remove power from the unit before making any adjustments.
- DO NOT allow moisture to enter the electronics enclosure. Conduit should slope downward from the Pulse Point™ housing. Install drip loops. Seal conduit with a silicone rubber product.
- All wiring must conform to the current National Electrical Code (NEC) or local electrical codes.

WARNING!
High voltage is present on the terminals.

MOUNTING

The Pulse Point™ fork must be located at the position where level indication is desired. The fork may be mounted through the top or side wall of the vessel. To ensure reliable operation, observe the following guidelines when choosing the mounting location. See Technical Specifications in Chapter 1 for mounting types.

Avoid locations where high levels of vibration are present.

The fork assembly must be horizontal or pointing downward. DO NOT mount the fork pointing upward.

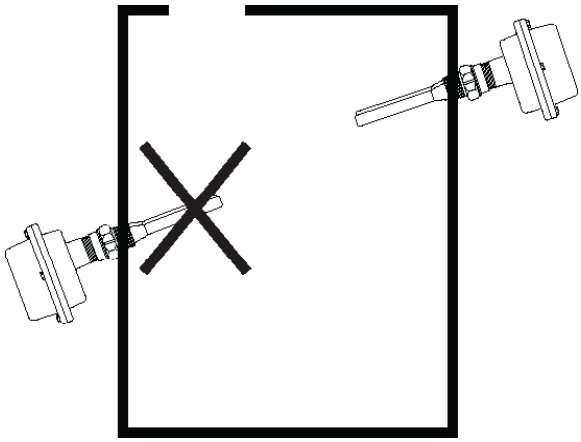


Figure 3.1 - Mounting Orientation.

The maximum allowable downward force on the fork assembly is 88 lb. (39.93kg). See Figure 3.2.

Calculate the maximum solids head height above a horizontally mounted fork as follows:

$$Maximum\ Height\ of\ Material\ \left(in\ \ ft.\right) = \frac{2{,}200}{Bulk\ Density\ \left(lb./\ ft.^3\right)}$$

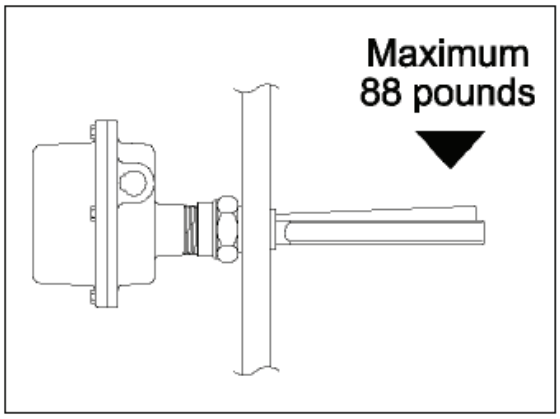


Figure 3.2 - Maximum Downward Force.

DO NOT mount the fork directly in the flow of material. If necessary, use a baffle to protect the fork from falling material. The baffle should be placed 6 in. to 8 in. (15.24cm to 20.32cm) above the fork so that material will not become packed between the fork and the baffle.

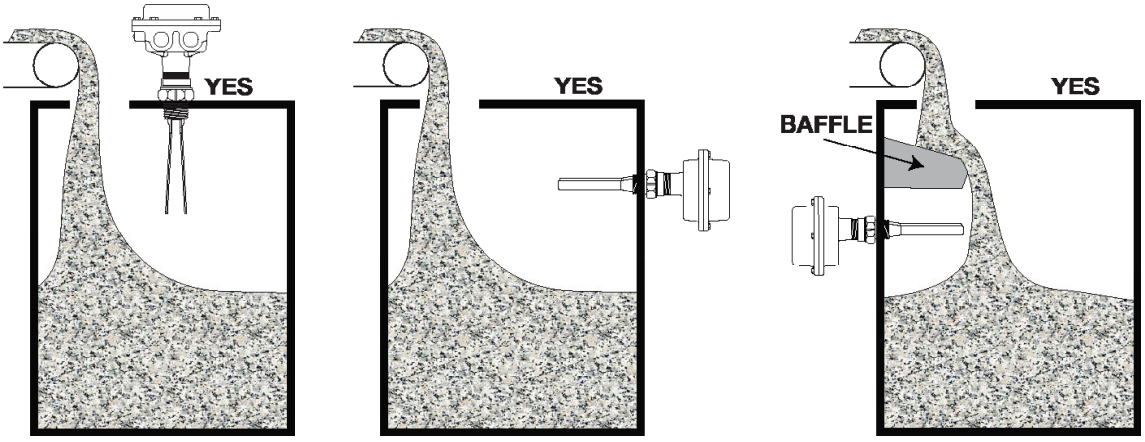


Figure 3.3 - Mounting in Relation to Flow of Material.

If the fork is mounted horizontally, it must be positioned so that the material will not accumulate on top of or between the tines. There is an index mark on the mounting nut to assist in proper positioning of the fork. See below.

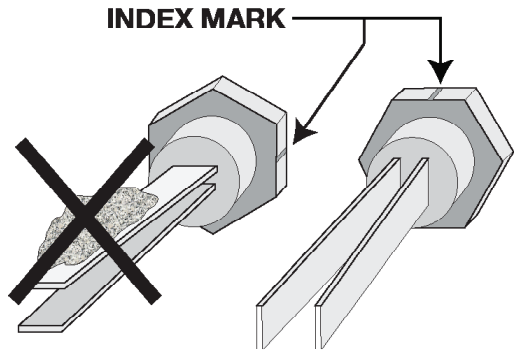


Figure 3.4 - Index Mark.

CHAPTER 4. ELECTRICAL INSTALLATION

GUIDELINES

Electrical connections to the Pulse Point™ are shown in Drawing LVP1E0004 (for LP-100 units) and in Drawing LVP1E0005 (for LP-200 units). Please see the Appendix for these drawings.

CONNECTION INFORMATION/WIRING DIAGRAM

All wiring must be completed in accordance with the current National Electrical Code (NEC) and all local electrical codes.

The markings at TB-1 on the circuit board indicate the status of the relay contacts only when the unit is powered and it is set to operate in the non-alarm condition. These markings do not reflect the true state of the relay contact output but TB-1 markings show the state of the relay contact output when the unit is powered and the unit is in an unalarmed state.

When the unit is powered and there is no alarm, C1 is connected to NC1. If power is removed or there is an alarm condition, then C1 disconnects from NC1 and connects to NO1. This is similar for C2, NC2 and, NO2.

Before applying power to the unit, make sure the Power Select Jumper (S-1) is in the proper position (120VAC or 240VAC), depending on the primary power source. See Figure 4.1 below.

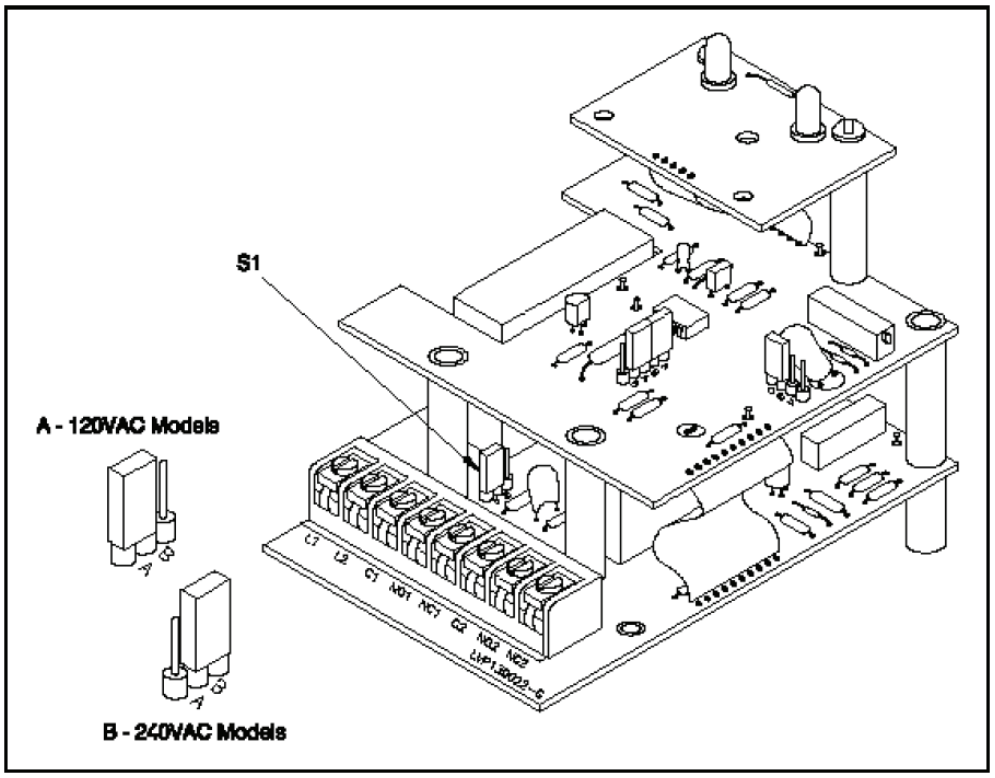


Figure 4.1 - Jumper S-1 Positioning.

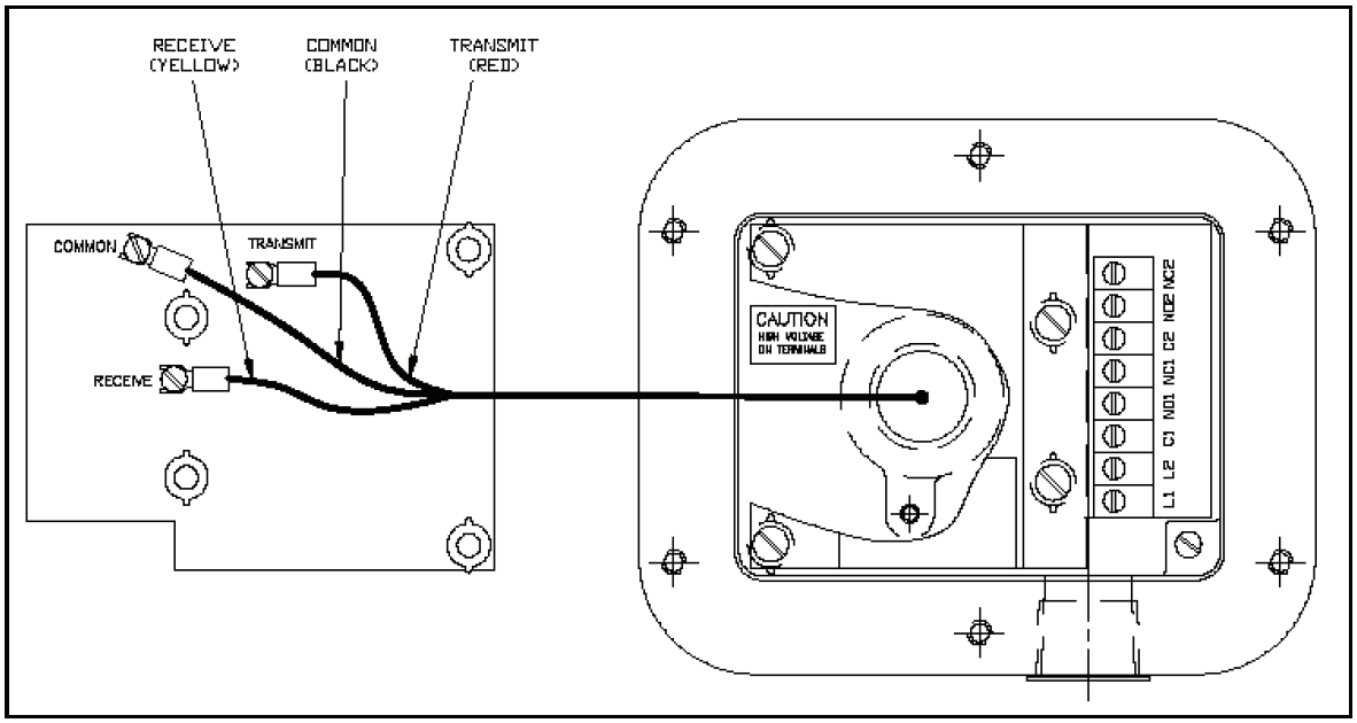


Figure 4.2 - Hook-Up Sensing Unit to Integral Electronics.

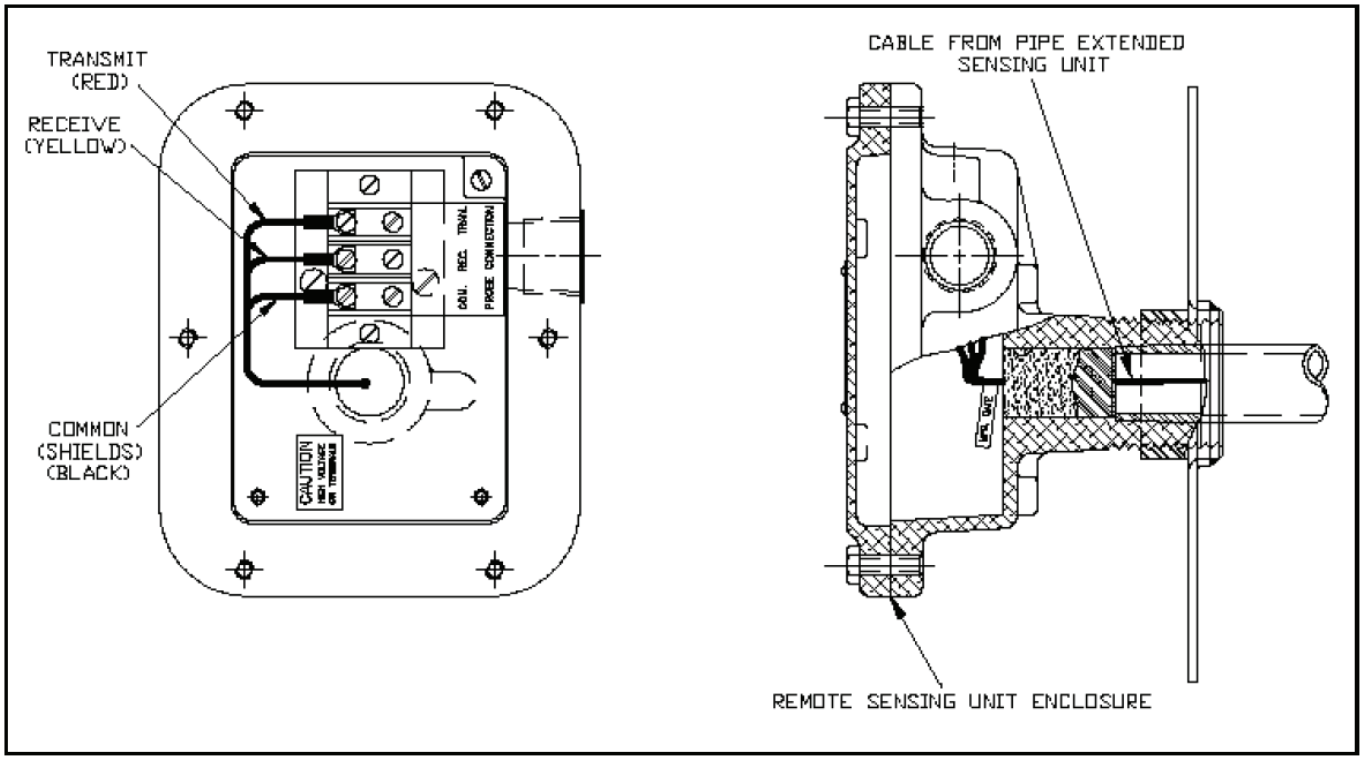


Figure 4.3 - Hook-Up Sensing Unit to Remote Electronics.

CHAPTER 5. SET-UP AND PROGRAMMING

OPERATION

The Pulse Point™ does not require calibration. When power is applied to the unit, the tines of the fork will begin to vibrate if the fork is not impeded by contact with material or some other object. The green LED will be lit whenever power is applied to the unit. The status of the red LED will be determined by the selected fail-safe mode and whether or not the fork is allowed to vibrate.

SET-UP/USER OPTIONS

The Pulse Point™ allows the user to control several operating characteristics to suit individual applications.

FAIL-SAFE SELECTION

The output relay of the Pulse Point™ is energized when the unit is operating in non-alarm state. This is known as "fail-safe" operation. The Pulse Point™ will give an alarm indication in the event of power failure. Fail-safe operation may be selected for HIGH level (HLFS) or LOW level (LLFS) applications by placing jumpers S-102 as shown in Figure 5.1. The chart below shows the various operating conditions which will exist in each of the fail-safe modes.

FORK STATUS	FAIL-SAFE MODE	RELAY STATUS	RED LED
Vibrating	HLFS	Energized	OFF
Not Vibrating	HLFS	Not Energized	ON
Vibrating	LLFS	Not Energized	ON
Not Vibrating	LLFS	Energized	OFF

Note

Both fail-safe jumpers must be in either position "A" or position "B".

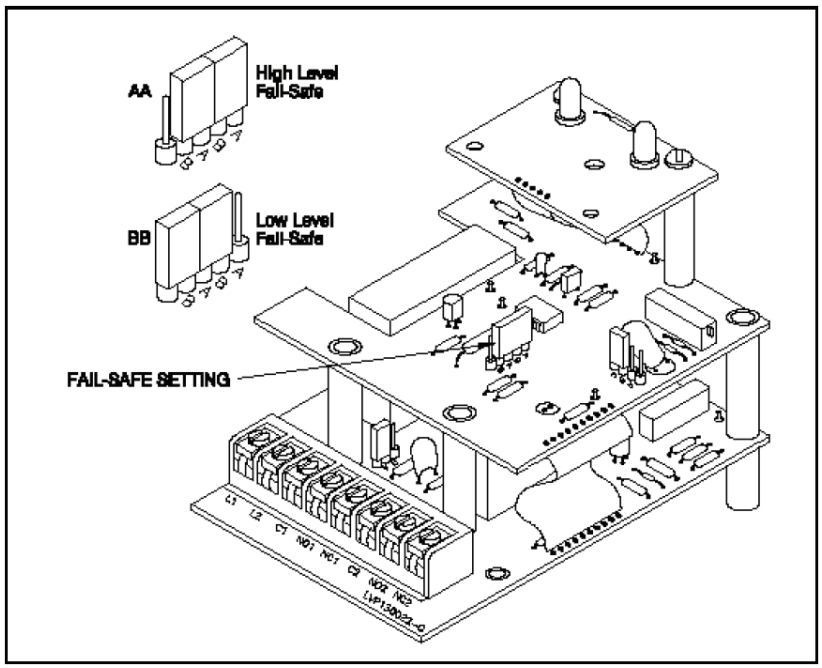


Figure 5.1 - Fail-Safe Set-Up.

TIME DELAY SELECTION

"Time Delay" is the interval between the change of fork status (vibrating or not vibrating) and change of output relay status (alarmed or not alarmed).

There are three modes of time delay operation as selected by jumper S-101 (See Figure 5.2)
"A" Delay between start of fork vibration and relay change.
"B" Delay between stoppage of fork vibration and relay change.
"C" Delay between both start and stoppage of fork vibration and relay change.
Potentiometer R111 adjusts the time delay interval. The minimum time delay is zero seconds (R111 fully counter-clockwise), while the maximum time delay is 25 seconds (R111 fully clockwise).

Note
Pulse Point™ units are shipped from the factory with jumper S-101 in position "C" and potentiometer R111 adjusted for zero time delay.

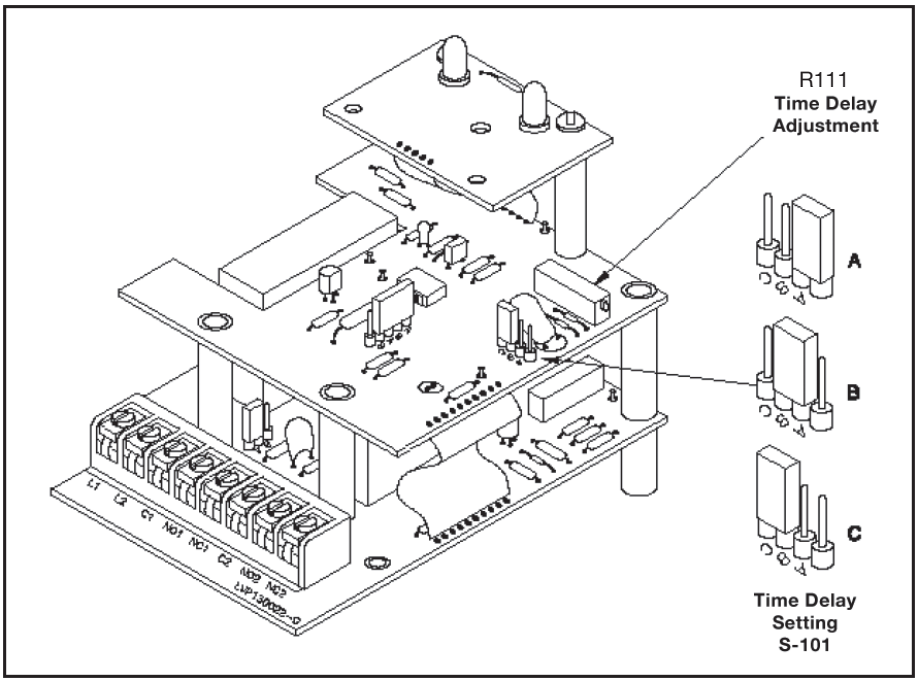


Figure 5.2 - Time Delay Set-Up.

EXTERNAL SELF TEST FEATURE

The external self test feature allows the operator to test the Pulse Point™ unit without having to remove the enclosure cover. A magnetic fob is held close to the electronics closure. This causes the circuit to duplicate a "buried fork" condition. The external self test feature operates only when the fork is not covered with material.

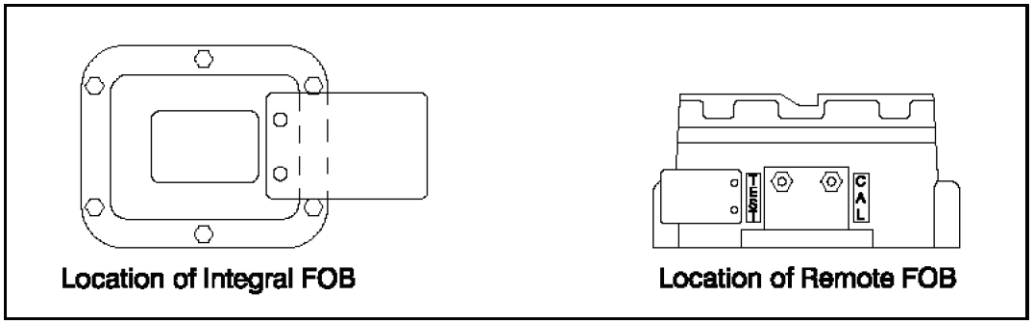


Figure 5.3 - External Self Test Set-Up.

CHAPTER 6. MAINTENANCE/PARTS LIST

PREVENTATIVE MAINTENANCE

No scheduled preventative maintenance is required for the Pulse Point™ units when properly applied and installed.

SPARE/REPLACEMENT PARTS

PRODUCT CODE	DESCRIPTION
Electronics	
LVP110000	LP-100 Standard Electronic Unit (120VAC)
LVP110001	LP-100 Standard Electronic Unit (240VAC)
LVP110013	LP-200 Standard Electronic Unit (120VAC)
LVP110014	LP-200 Standard Electronic Unit (240VAC)
LVP110021	LP-100 Liquid/Solid Interface Electronics (120VAC)
LVP110022	LP-100 Liquid/Solid Interface Electronics (240VAC)
LVP110025	LP-200 Liquid/Solid Interface Electronics (120VAC)
LVP110026	LP-100 Liquid/Solid Interface Electronics (240VAC)
Tuning Forks	
LVP130314	1½ in. Mounting, 316 Stainless Steel Tuning Fork
LVP130315	1½ in. Mounting, 316 Stainless Steel Tuning Fork, Teflon® Coated
LVP130323	1½ in. Mounting, 316 Stainless Steel Tuning Fork, High Temperature Extended
LVP130324	1½ in. Mounting, 316 Stainless Steel Tuning Fork, High Temperature Extended, Teflon® Coated
LVP110115	1½ in. Mounting, 316 Stainless Steel Tuning Fork, High Temperature Extended, Liquid/Solid Interface
LVP130312	1¼ in. Mounting, 316 Stainless Steel Tuning Fork
LVP130317	1¼ in. Mounting, 316 Stainless Steel Tuning Fork, Teflon® Coated
LVP130313	1¼ in. Mounting, 316 Stainless Steel Tuning Fork, High Temperature Extended
LVP130319	1½ in. Mounting, 316 Stainless Steel Tuning Fork, High Temperature Extended, Teflon® Coated
LUB042934	Adjustable Connector for Extended Units
Fobs	
LVP130054	LP-100 External Self Test Function Fob
LVP130055	LP-200 External Self Test Function Fob
Mounting Plates	
LVP110059	1½ in. NPT Mild Steel Mounting Plate
LVP110060	1½ in. NPT 304 Stainless Steel Mounting Plate
LVP110130	1¼ in. NPT Mild Steel Mounting Plate
LVP110071	1¼ in. NPT 304 Stainless Steel Mounting Plate

Flanges

LUB042612	2 in. with 1¼ in. NPT Tapped Female, 316 Stainless Steel
LUB042901	2 in. with 1¼ in. NPT Tapped Female, Carbon Steel
LUB042615	2 in. with 1½ in. NPT, 304 Stainless Steel
LUB042761	3 in. with 1¼ in. NPT Tapped Female, 316 Stainless Steel
LUB042603	3 in. with 1¼ in. NPT Tapped Female, Carbon Steel
LUB042740	3 in. with 1½ in. NPT, 316 Stainless Steel
LUB042940	3 in. with 1½ in. NPT, 304 Stainless Steel
LUB042733	3 in. with 1½ in. NPT, Carbon Steel
LUB042855	4 in. with 1¼ in. NPT Tapped Female, 304 Stainless Steel
LUB042910	4 in. with 1¼ in. NPT Tapped Female, Carbon Steel

CHAPTER 7. TROUBLESHOOTING

The following section may be used as a troubleshooting guide in the unlikely event that problems are found with the operation of the Pulse Point™ unit.

PROBLEM The green LED is not lit.

SOLUTION There is no primary power to the unit. Verify proper voltage at L1/L2.

PROBLEM The fork vibrates, but the unit will not alarm.

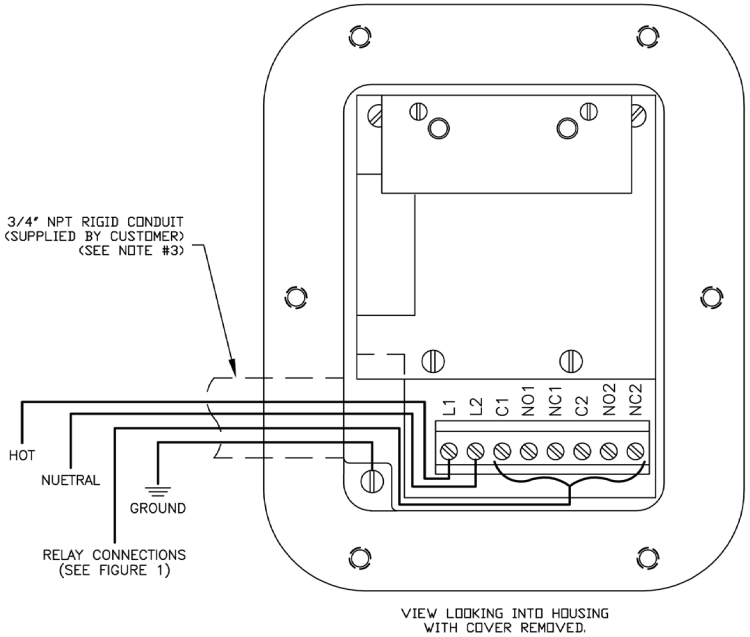
SOLUTION Make sure the problem is not just a long time delay. Test by turning R111 fully counter-clockwise to set the time delay to zero. Verify proper setting of fail-safe jumper S-102. See Chapter 5, Set-Up/User Options.

Contact Bindicator® Customer Care if additional assistance is required. Please be prepared to provide the model number, date of purchase, application information (type of material, mounting configuration, etc.), and description of the problem.

If further assistance is required, a Bindicator® Applications Engineer will review the problem. Equipment shipped back to the manufacturing facility without proper authorization will be refused and returned at the shipper's expense.

APPENDIX

DRAWING NUMBER	DRAWING DESCRIPTION
LVP1E0004	Customer Hookup Pulse Point LP-100
LVP1E0005	Customer Hookup Pulse Point LP-200
LVP180022	LP-100 1¼ in. Galvanized Steel Extended Dimensions (Type A and 1)
LVP180023	LP-100 1½ in. and 1¼ in. Dimensions
LVP180024	LP-100 1¼ in. Stainless Steel Extended Dimensions (Type B and 3)
LVP180025	LP-100 1½ in. Galvanized Steel Extended Dimensions (Type A)
LVP180029	LP-200 1½ in. and 1¼ in. Dimensions
LVP180030	LP-100 1½ in. Galvanized Steel Extended Dimensions (Type 1)
LVP180031	LP-100 1½ in. Stainless Steel Extended Dimensions (Type 3)
LVP180032	LP-100 1½ in. Stainless Steel Extended Dimensions (Type B)
LVP180033	LP-200 1¼ in. Galvanized Steel Extended Dimensions (Type A and 1)
LVP180034	LP-200 1½ in. Galvanized Steel Extended Dimensions (Type 1)
LVP180035	LP-200 1½ in. Galvanized Steel Extended Dimensions (Type A)
LVP180036	LP-200 1¼ in. Stainless Steel Extended Dimensions (Type B and 3)
LVP180037	LP-200 1½ in. Stainless Steel Extended Dimensions (Type 3)
LVP180038	LP-200 1½ in. Stainless Steel Extended Dimensions (Type B)



VIEW LOOKING INTO HOUSING
WITH COVER REMOVED.

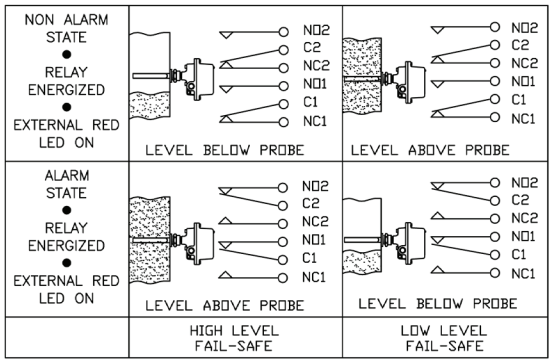


FIGURE 1
RELAY CONNECTIONS

NOTE: 1) FIELD WIRING SHALL BE ACCORDING TO LOCAL STANDARDS.
2) POWER TO UNITS, 18 AWG MINIMUM RECOMMENDED.
3) ON EXPLOSION PROOF UNITS, EXPLOSION PROOF SEAL FITTING MUST BE INSTALLED WITHIN 18" OF CONDUIT OPENING.
4) CAUTION: HIGH VOLTAGE ON PROBE TERMINALS LOCATED ON BOTTOM OF ELECTRONIC MODULE.

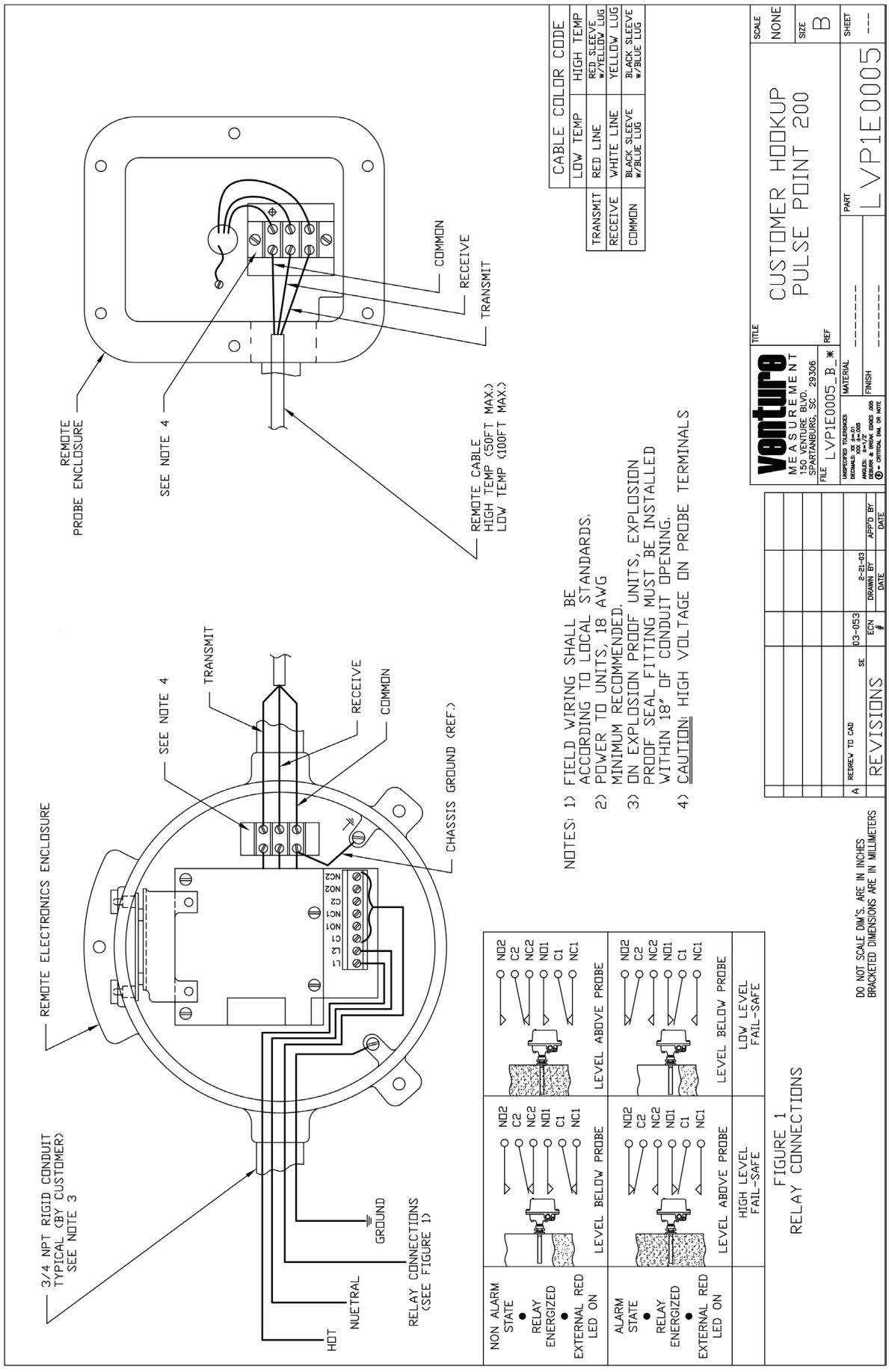
FACTORY MUTUAL
Certified Product
No Modifications Permitted
Without Reference to
FACTORY MUTUAL

DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS

A	REDREW TO CAD SE	03-053	SE 2-21-03	JD 5-6-03
	REVISIONS	ECN #	DRAWN BY DATE	APP'D BY DATE

venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306

TITLE: CUSTOMER HOOKUP PULSE POINT 100
FILE: LVP1E0004_B_*
REF:
SCALE: NONE
SIZE: B
UNSPECIFIED TOLERENCES
DECIMALS: XX ±=.01
XXX ±=.005
ANGLES: ±=1/2°
DEBURR & BREAK EDGES .005
Ⓒ = CRITICAL DIM. OR NOTE
MATERIAL: _____
FINISH: _____
PART: LVP1E0004
SHEET: ---


REMOTE ELECTRONICS ENCLOSURE
3/4 NPT RIGID CONDUIT TYPICAL (BY CUSTOMER) SEE NOTE 3
SEE NOTE 4
TRANSMIT
RECEIVE
COMMON
CHASSIS GROUND (REF.)
GROUND
HOT
NUETRAL
RELAY CONNECTIONS (SEE FIGURE 1)
REMOTE PROBE ENCLOSURE
SEE NOTE 4
COMMON
RECEIVE
TRANSMIT
REMOTE CABLE HIGH TEMP (50FT MAX.) LOW TEMP (100FT MAX.)
NOTES: 1) FIELD WIRING SHALL BE ACCORDING TO LOCAL STANDARDS.
2) POWER TO UNITS, 18 AWG MINIMUM RECOMMENDED.
3) ON EXPLOSION PROOF UNITS, EXPLOSION PROOF SEAL FITTING MUST BE INSTALLED WITHIN 18" OF CONDUIT OPENING.
4) CAUTION: HIGH VOLTAGE ON PROBE TERMINALS
NO2 C2 NC2 NO1 C1 NC1
NON ALARM STATE • RELAY ENERGIZED • EXTERNAL RED LED ON
LEVEL BELOW PROBE
LEVEL ABOVE PROBE
ALARM STATE • RELAY ENERGIZED • EXTERNAL RED LED ON
LEVEL ABOVE PROBE
LEVEL BELOW PROBE
HIGH LEVEL FAIL-SAFE
LOW LEVEL FAIL-SAFE
FIGURE 1
RELAY CONNECTIONS
CABLE COLOR CODE
LOW TEMP
HIGH TEMP
TRANSMIT
RED LINE
RED SLEEVE W/YELLOW LUG
RECEIVE
WHITE LINE
YELLOW LUG
COMMON
BLACK SLEEVE W/BLUE LUG
BLACK SLEEVE W/BLUE LUG
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
REVISIONS
A REDREW TO CAD SE 03-053 2-21-03
ECN # DRAWN BY DATE APP'D BY DATE
venture MEASUREMENT
150 VENTURE BLVD. SPARTANBURG, SC 29306
FILE LVP1E0005_B_*
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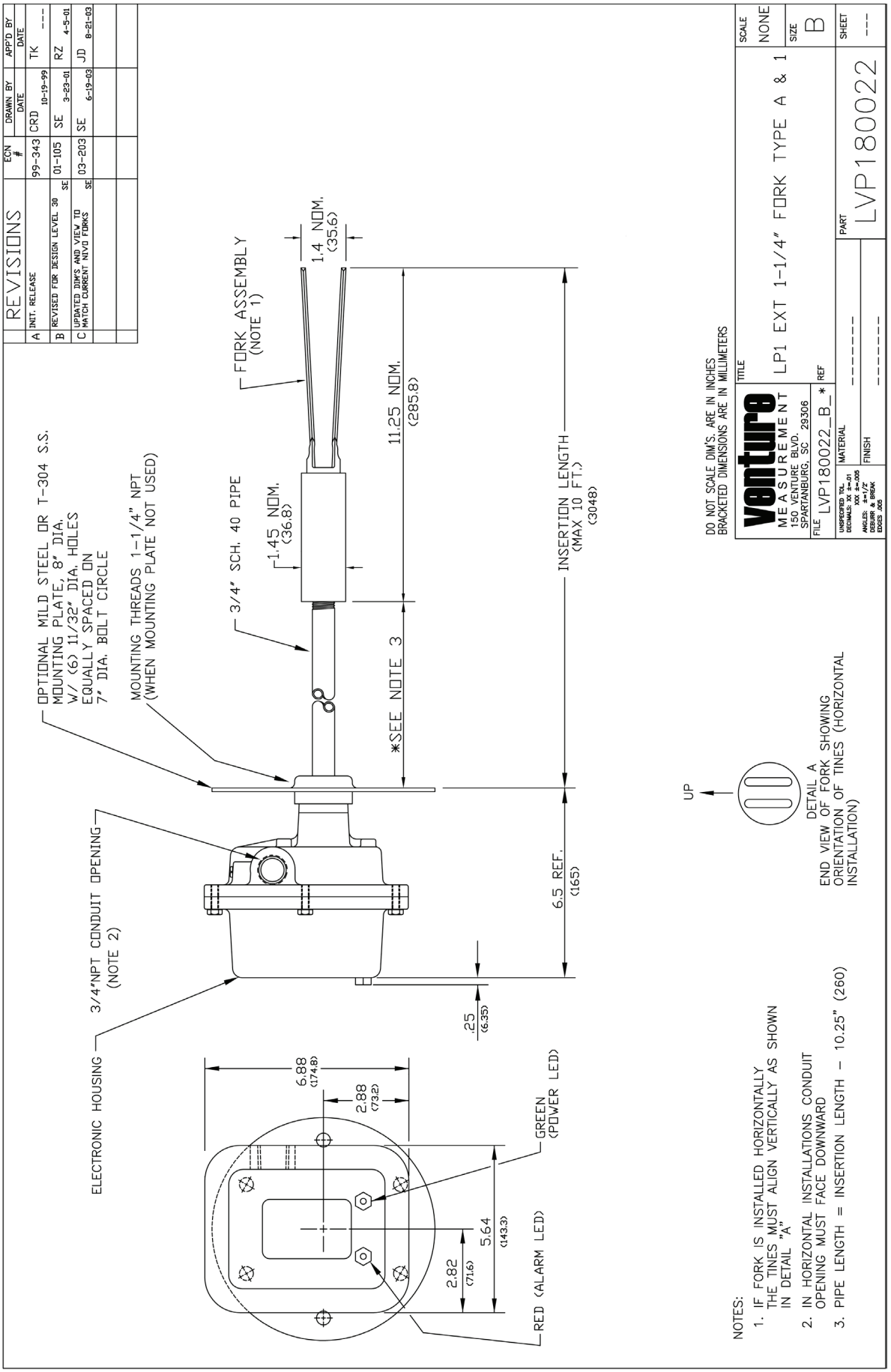
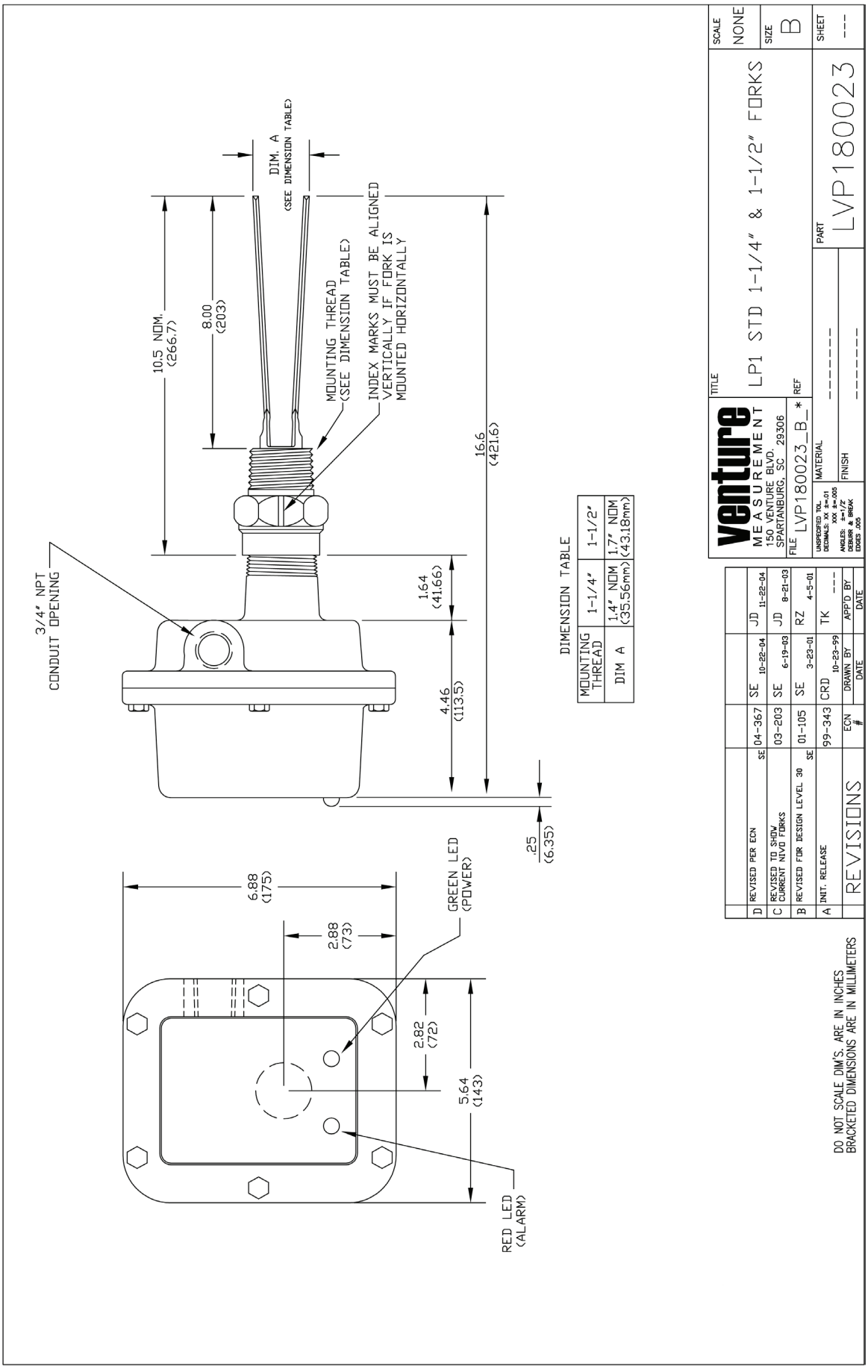
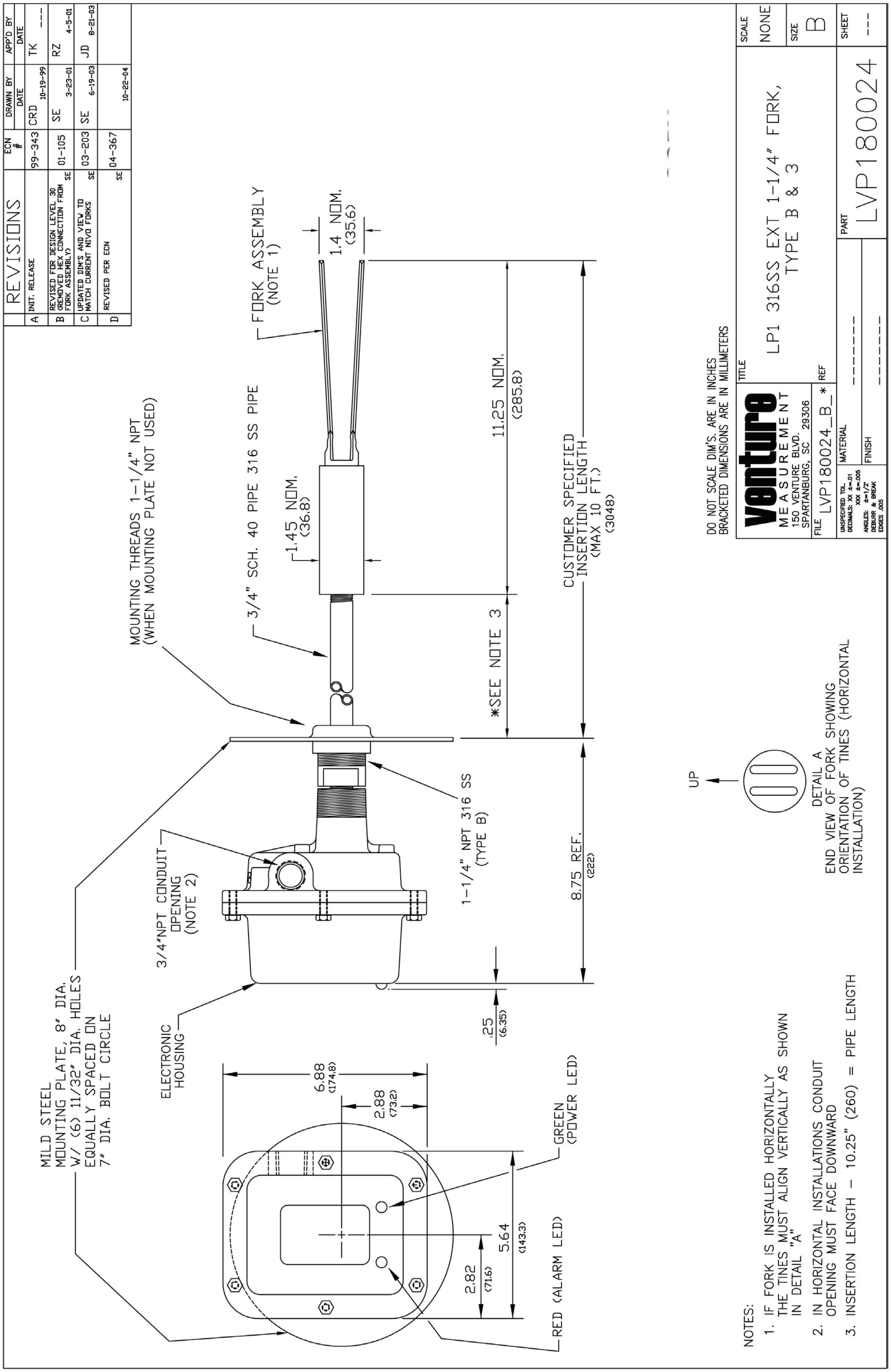
FINISH
PART
LVP1E0005
SCALE NONE
SIZE B
SHEET ---

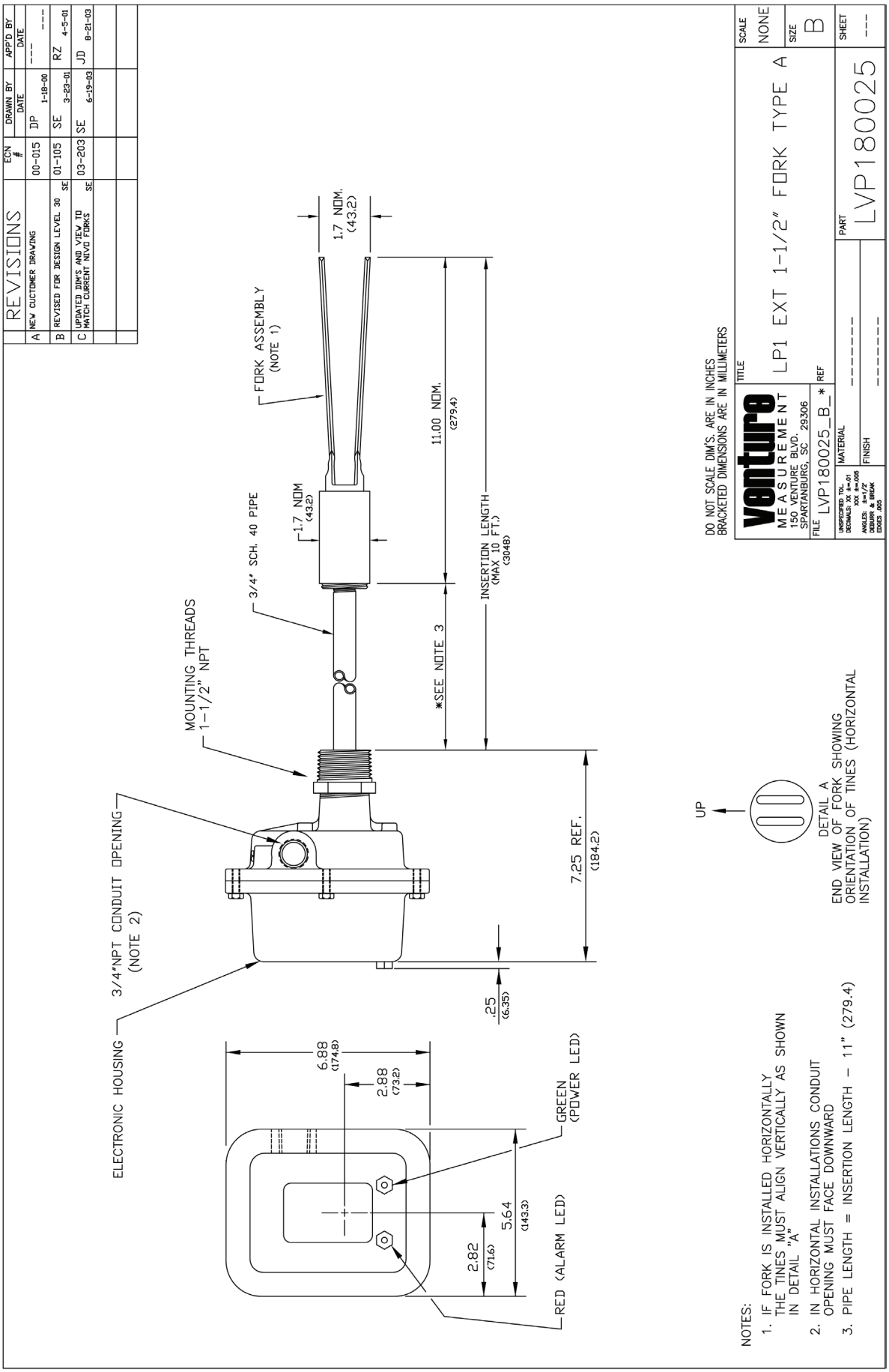

REVISIONS
A INIT. RELEASE 99-343 CRD 10-19-99 TK ---
B REVISED FOR DESIGN LEVEL 30 SE 01-105 SE 3-23-01 RZ 4-5-01
C UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
OPTIONAL MILD STEEL OR T-304 S.S. MOUNTING PLATE, 8" DIA. W/ (6) 11/32" DIA. HOLES EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
MOUNTING THREADS 1-1/4" NPT (WHEN MOUNTING PLATE NOT USED)
3/4" SCH. 40 PIPE
FORK ASSEMBLY (NOTE 1)
1.45 NOM. (36.8)
1.4 NOM. (35.6)
11.25 NOM. (285.8)
*SEE NOTE 3
INSERTION LENGTH (MAX 10 FT.) (3048)
6.5 REF. (165)
.25 (6.35)
ELECTRONIC HOUSING
3/4"NPT CONDUIT OPENING (NOTE 2)
6.88 (174.8)
2.88 (73.2)
GREEN (POWER LED)
RED (ALARM LED)
2.82 (71.6)
5.64 (143.3)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
DO NOT SCALE DIM'S. ARE IN INCHES BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD. SPARTANBURG, SC 29306
TITLE LP1 EXT 1-1/4" FORK TYPE A & 1
FILE LVP180022_B_* REF
SCALE NONE
SIZE B
SHEET ---
PART LVP180022
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)

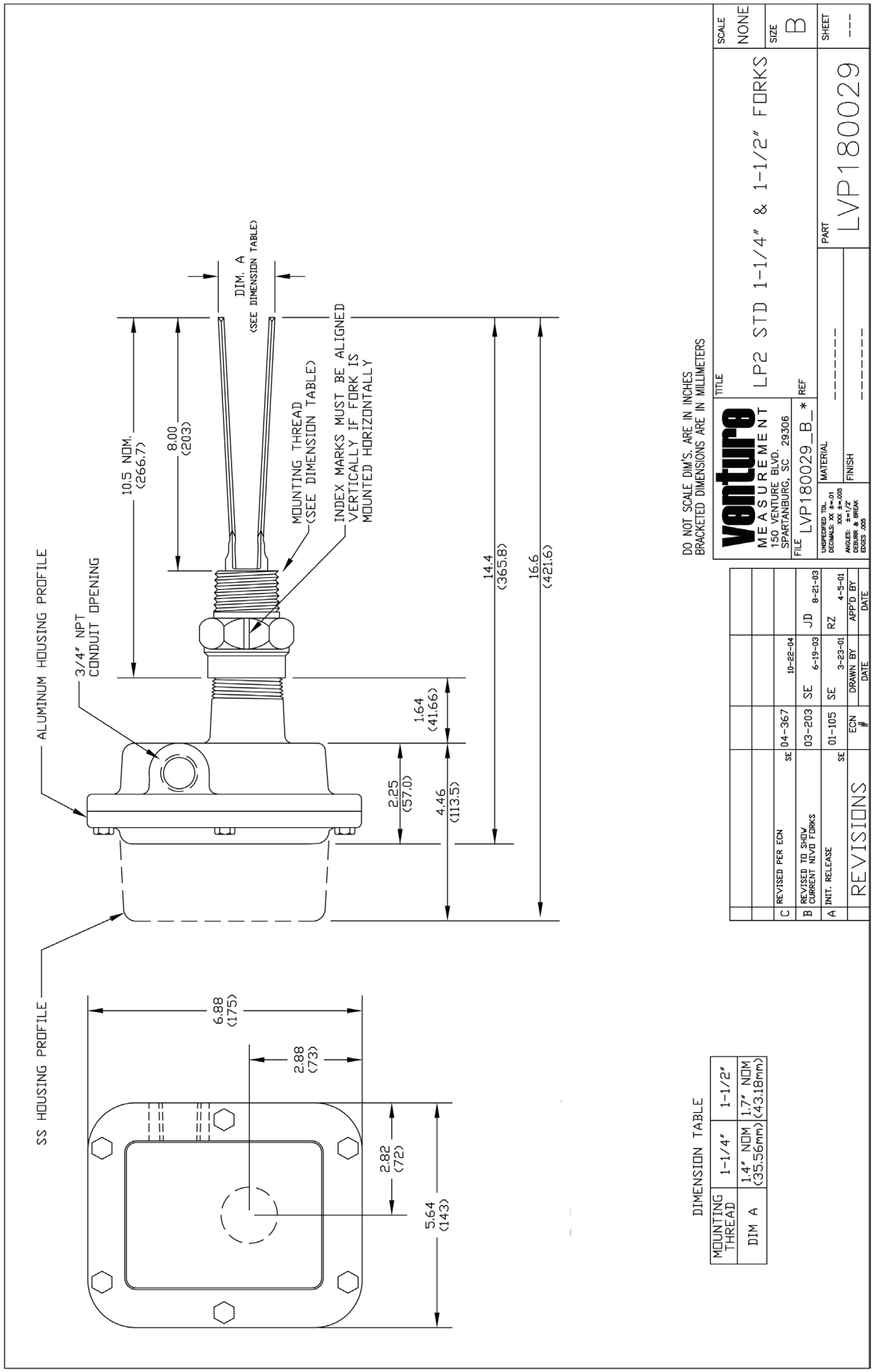

DIM. A
(SEE DIMENSION TABLE)
MOUNTING THREAD
(SEE DIMENSION TABLE)
INDEX MARKS MUST BE ALIGNED
VERTICALLY IF FORK IS
MOUNTED HORIZONTALLY
10.5 NOM.
(266.7)
8.00
(203)
16.6
(421.6)
3/4" NPT
CONDUIT OPENING
1.64
(41.66)
4.46
(113.5)
.25
(6.35)
DIMENSION TABLE
MOUNTING THREAD | 1-1/4" | 1-1/2"
DIM A | 1.4" NOM (35.56mm) | 1.7" NOM (43.18mm)
6.88
(175)
2.88
(73)
GREEN LED
(POWER)
2.82
(72)
5.64
(143)
RED LED
(ALARM)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
REVISIONS
D REVISED PER ECN SE 04-367 SE 10-22-04 JD 11-22-04
C REVISED TO SHOW CURRENT NIVO FORKS 03-203 SE 6-19-03 JD 8-21-03
B REVISED FOR DESIGN LEVEL 30 SE 01-105 SE 3-23-01 RZ 4-5-01
A INIT. RELEASE 99-343 CRD 10-23-99 TK ---
ECN # DRAWN BY APP'D BY
DATE DATE
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
TITLE
LP1 STD 1-1/4" & 1-1/2" FORKS
FILE LVP180023_B_*
REF
UNSPECIFIED TOL.
DECIMALS: XX ±-.01
XXX ±-.005
ANGLES: ±-1/2°
DEBURR & BREAK
EDGES .005
MATERIAL

FINISH

PART
LVP180023
SCALE
NONE
SIZE
B
SHEET


REVISIONS
ECN #
DRAWN BY DATE
APP'D BY DATE
A INIT. RELEASE 99-343 CRD 10-19-99 TK ---
B REVISED FOR DESIGN LEVEL 30 (REMOVED HEX CONNECTION FROM FORK ASSEMBLY) SE 01-105 SE 3-23-01 RZ 4-5-01
C UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
D REVISED PER ECN SE 04-367 10-22-04
FORK ASSEMBLY (NOTE 1)
1.4 NOM. (35.6)
3/4" SCH. 40 PIPE 316 SS PIPE
1.45 NOM. (36.8)
11.25 NOM. (285.8)
MOUNTING THREADS 1-1/4" NPT (WHEN MOUNTING PLATE NOT USED)
*SEE NOTE 3
CUSTOMER SPECIFIED INSERTION LENGTH (MAX 10 FT.) (3048)
1-1/4" NPT 316 SS (TYPE B)
3/4"NPT CONDUIT OPENING (NOTE 2)
8.75 REF. (222)
ELECTRONIC HOUSING
.25 (6.35)
MILD STEEL MOUNTING PLATE, 8" DIA. W/ (6) 11/32" DIA. HOLES EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
6.88 (174.8)
2.88 (73.2)
GREEN (POWER LED)
5.64 (143.3)
2.82 (71.6)
RED (ALARM LED)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD. SPARTANBURG, SC 29306
TITLE
LP1 316SS EXT 1-1/4" FORK, TYPE B & 3
SCALE NONE
SIZE B
FILE LVP180024_B_*
REF -------
MATERIAL
FINISH
PART LVP180024
SHEET ---

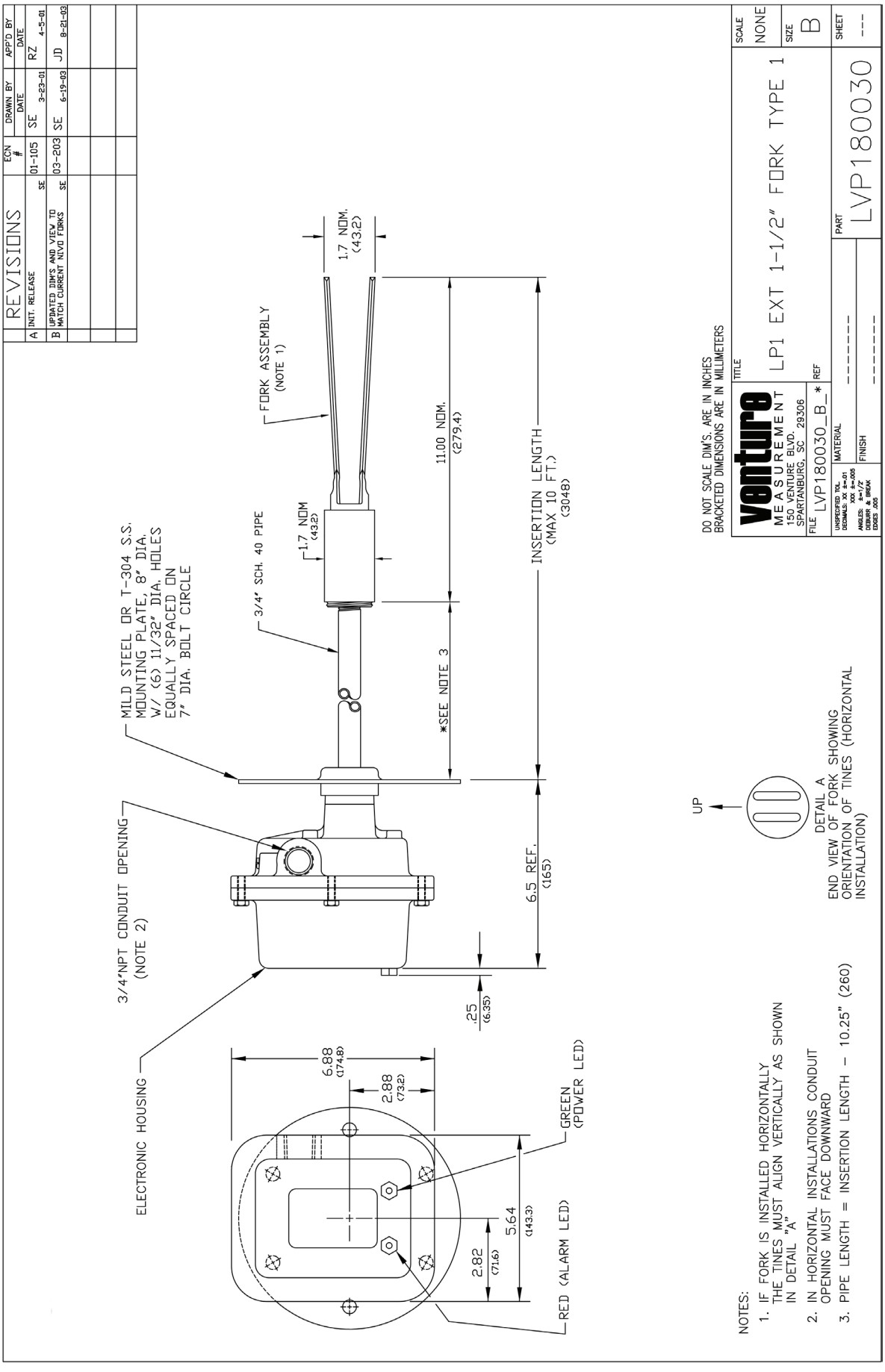

REVISIONS
A NEW CUSTOMER DRAWING 00-015 DP 1-18-00 --- ---
B REVISED FOR DESIGN LEVEL 30 SE 01-105 SE 3-23-01 RZ 4-5-01
C UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
FORK ASSEMBLY (NOTE 1)
1.7 NOM. (43.2)
11.00 NOM. (279.4)
INSERTION LENGTH (MAX 10 FT.) (3048)
*SEE NOTE 3
3/4" SCH. 40 PIPE
1.7 NOM (43.2)
MOUNTING THREADS 1-1/2" NPT
3/4"NPT CONDUIT OPENING (NOTE 2)
ELECTRONIC HOUSING
7.25 REF. (184.2)
.25 (6.35)
6.88 (174.8)
2.88 (73.2)
GREEN (POWER LED)
RED (ALARM LED)
2.82 (71.6)
5.64 (143.3)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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. PIPE LENGTH = INSERTION LENGTH - 11" (279.4)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
FILE LVP180025_B_*
REF
TITLE
LP1 EXT 1-1/2" FORK TYPE A
SCALE NONE
SIZE B
SHEET ---
UNSPECIFIED TOL. DECIMALS: XX ±=.01 XXX ±=.005
ANGLES: ±=1°
DEBURR & BREAK EDGES .005
MATERIAL ---
FINISH ---
PART LVP180025

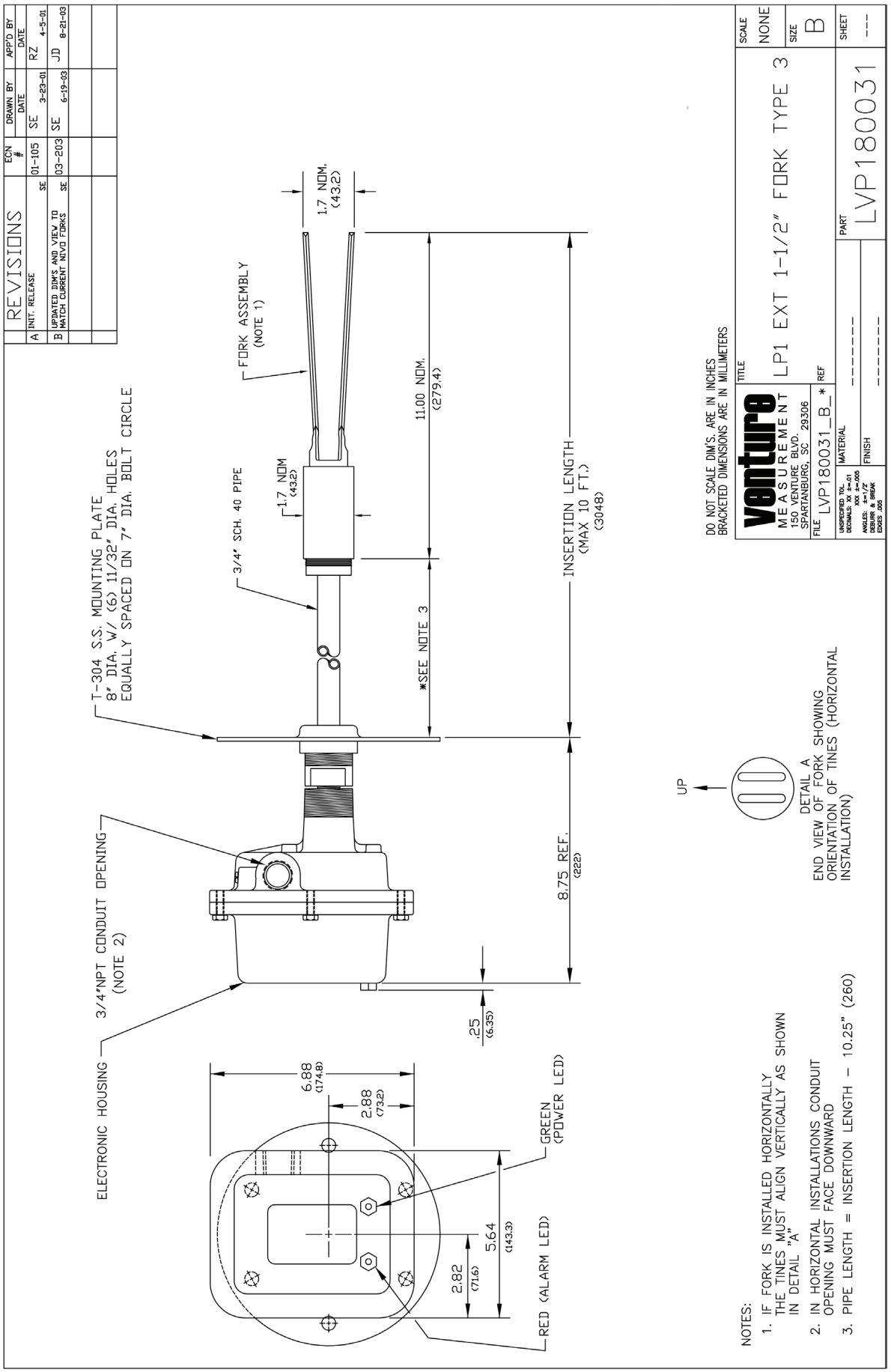

ALUMINUM HOUSING PROFILE
3/4" NPT
CONDUIT OPENING
10.5 NOM.
(266.7)
8.00
(203)
DIM. A
(SEE DIMENSION TABLE)
MOUNTING THREAD
(SEE DIMENSION TABLE)
INDEX MARKS MUST BE ALIGNED
VERTICALLY IF FORK IS
MOUNTED HORIZONTALLY
1.64
(41.66)
2.25
(57.0)
4.46
(113.5)
14.4
(365.8)
16.6
(421.6)
SS HOUSING PROFILE
6.88
(175)
2.88
(73)
2.82
(72)
5.64
(143)
DIMENSION TABLE
MOUNTING THREAD
DIM A
1-1/4"
1.4" NOM
(35.56mm)
1-1/2"
1.7" NOM
(43.18mm)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
TITLE
LP2 STD 1-1/4" & 1-1/2" FORKS
FILE LVP180029_B_*
REF
UNSPECIFIED TOL.
DECIMALS: XX ±=.01
XXX ±=.005
ANGLES: ±=1/2°
DEBURR & BREAK
EDGES .005
MATERIAL

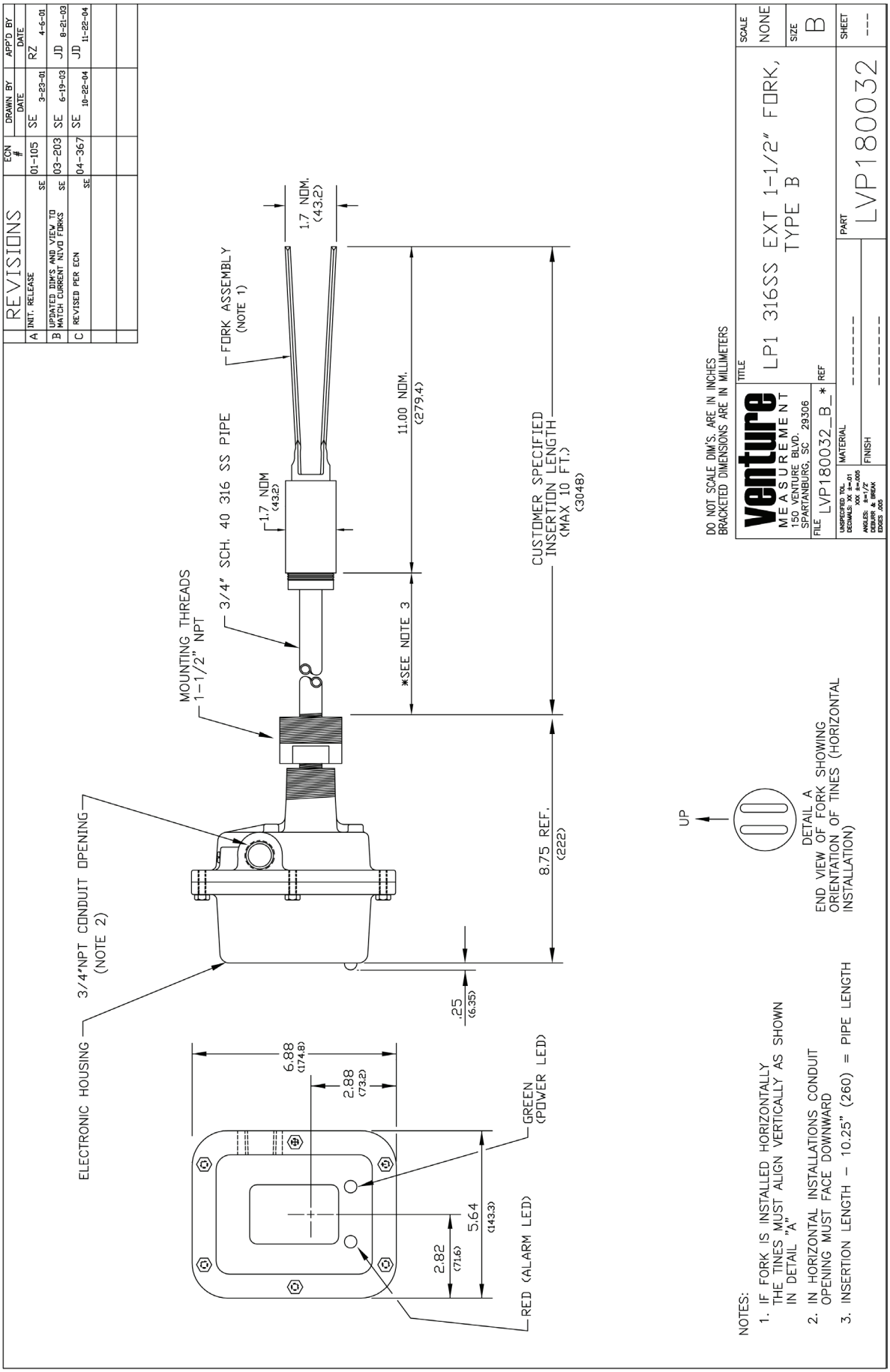
FINISH

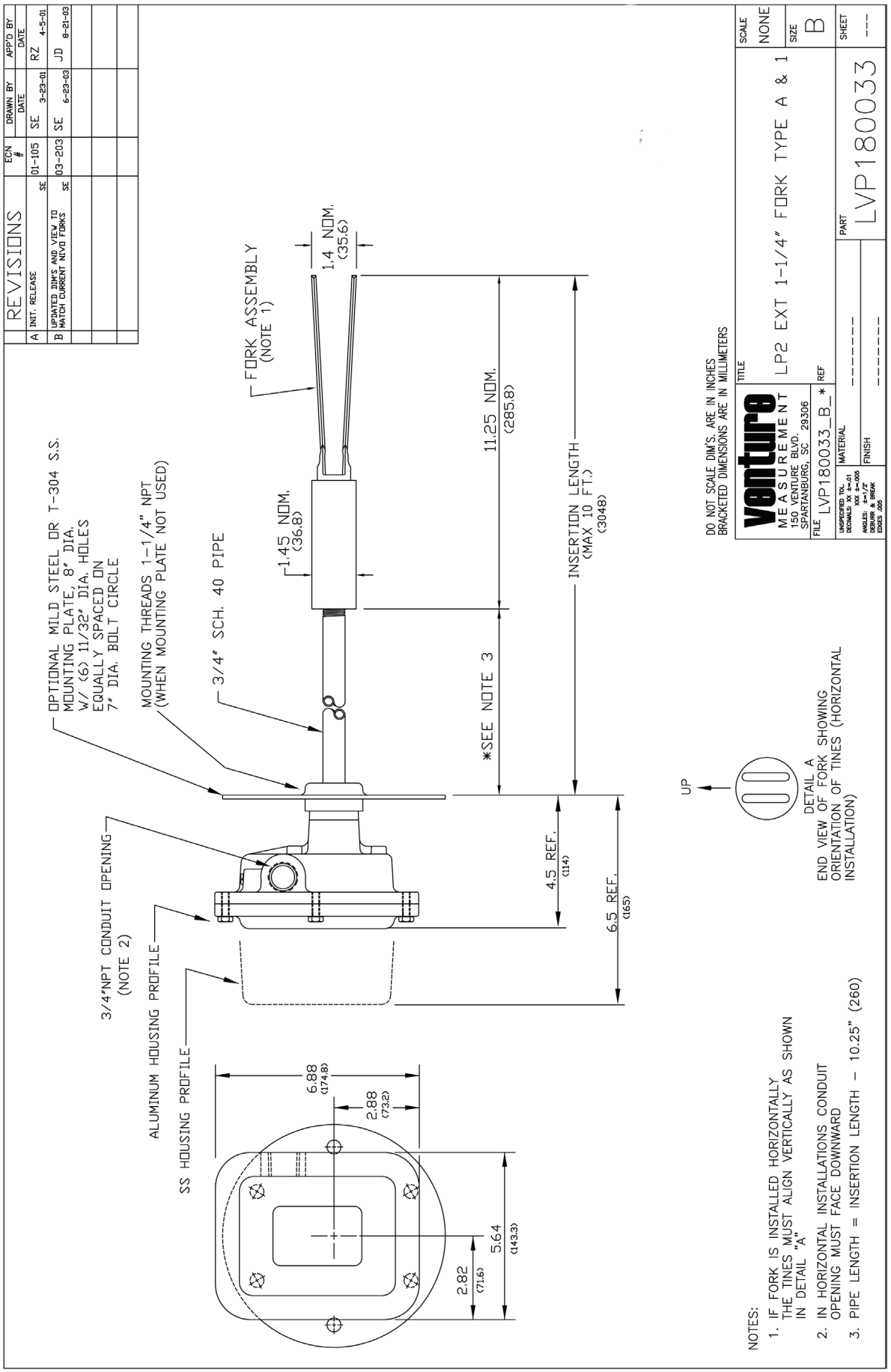
PART
LVP180029
SCALE
NONE
SIZE
B
SHEET

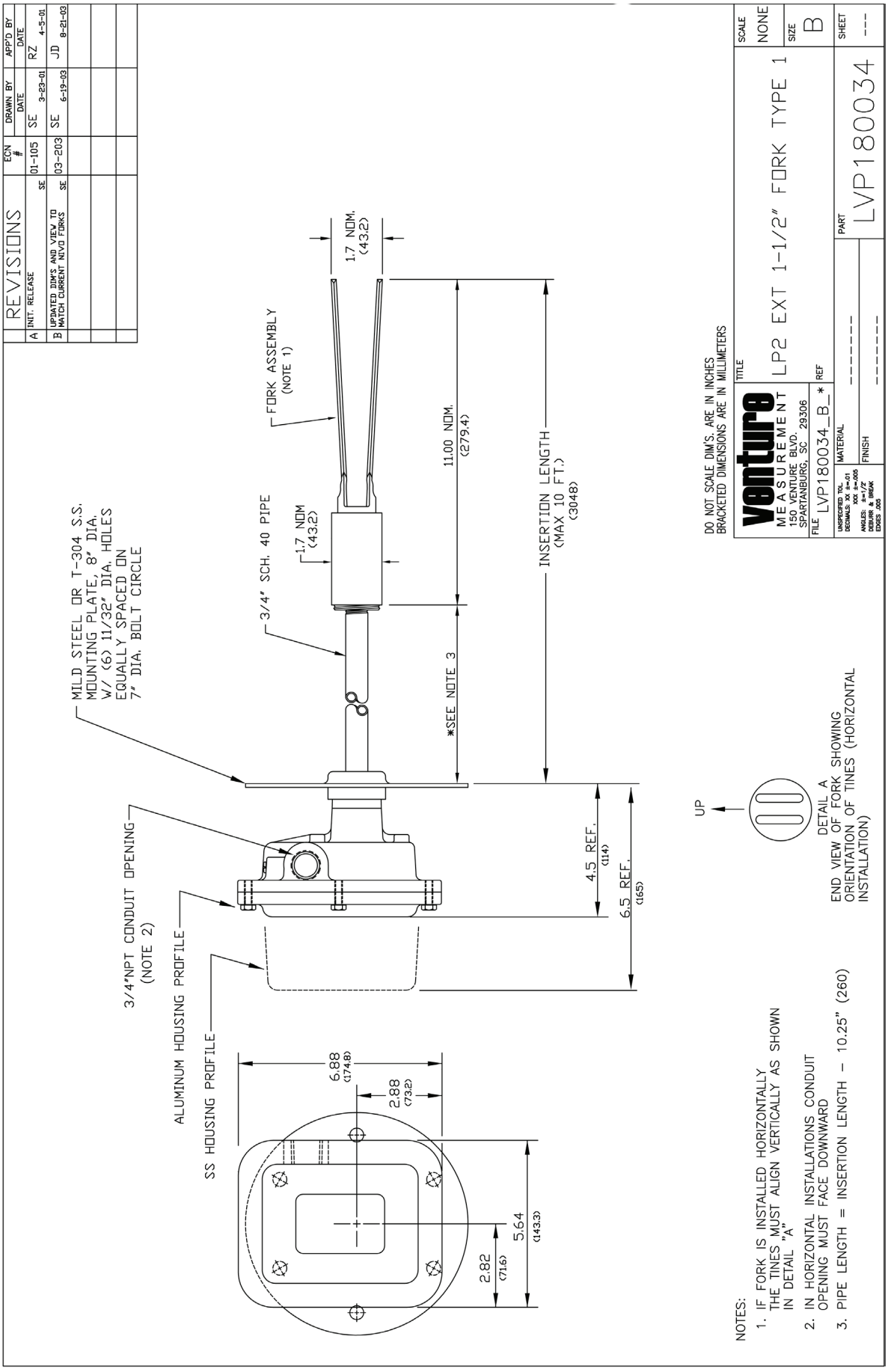
REVISIONS
A INIT. RELEASE SE 01-105 SE 3-23-01 RZ 4-5-01
B REVISED TO SHOW CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
C REVISED PER ECN SE 04-367 10-22-04
ECN # | DRAWN BY | DATE | APP'D BY | DATE

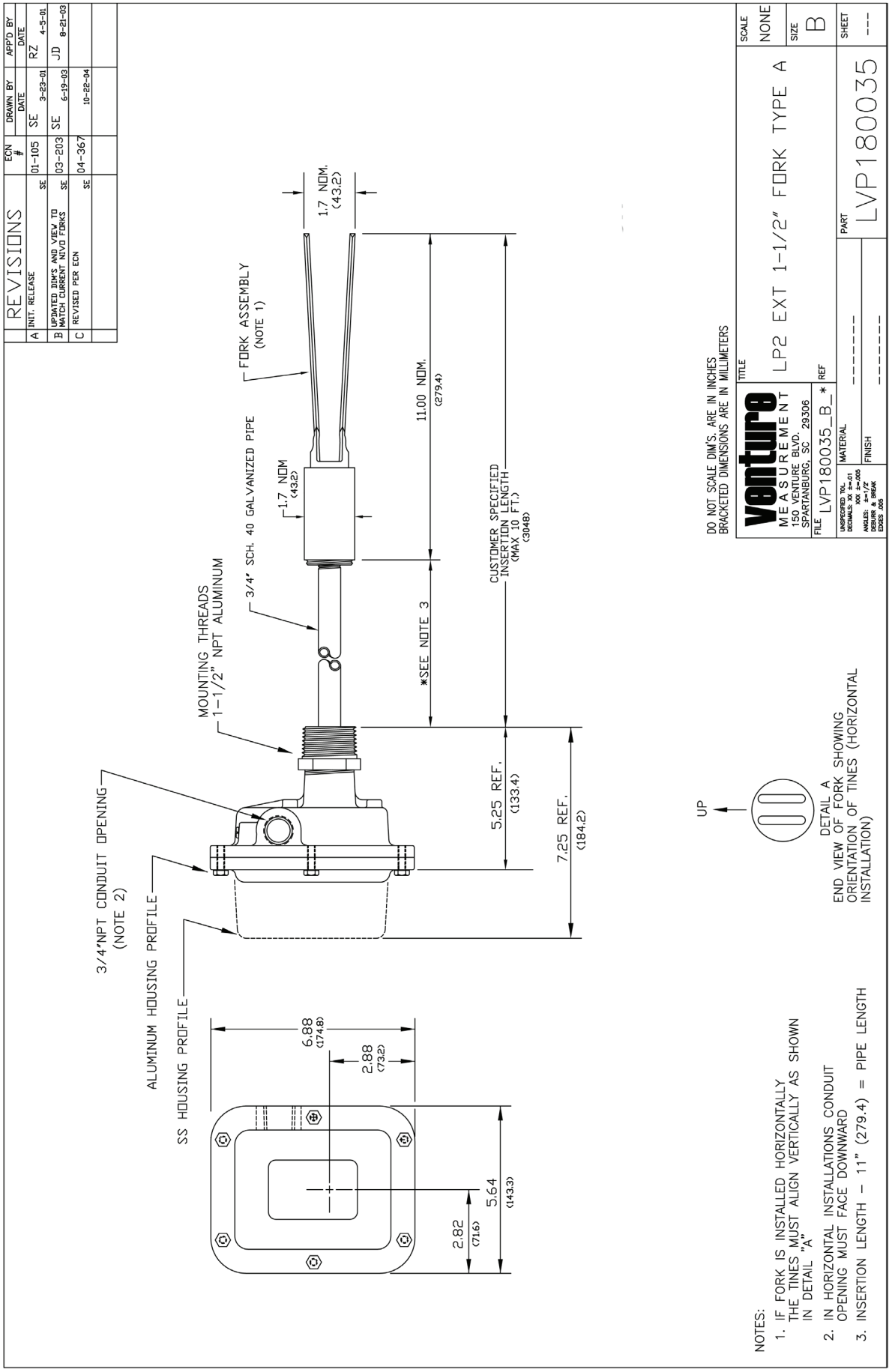

REVISIONS
A INT. RELEASE SE 01-105 SE 3-23-01 RZ 4-5-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
MILD STEEL OR T-304 S.S. MOUNTING PLATE, 8" DIA. W/ (6) 11/32" DIA. HOLES EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
3/4"NPT CONDUIT OPENING (NOTE 2)
ELECTRONIC HOUSING
3/4" SCH. 40 PIPE
FORK ASSEMBLY (NOTE 1)
1.7 NOM (43.2)
1.7 NOM. (43.2)
11.00 NOM. (279.4)
*SEE NOTE 3
INSERTION LENGTH (MAX 10 FT.) (3048)
6.5 REF. (165)
.25 (6.35)
6.88 (174.8)
2.88 (73.2)
GREEN (POWER LED)
RED (ALARM LED)
2.82 (71.6)
5.64 (143.3)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
TITLE
LP1 EXT 1-1/2" FORK TYPE 1
FILE LVP180030_B_*
REF
UNSPECIFIED TOL.
DECIMALS: XX ±-.01
XXX ±-.005
ANGLES: ±-1/2°
DEBURR & BREAK EDGES .005
MATERIAL
FINISH
PART
LVP180030
SCALE NONE
SIZE B
SHEET ---

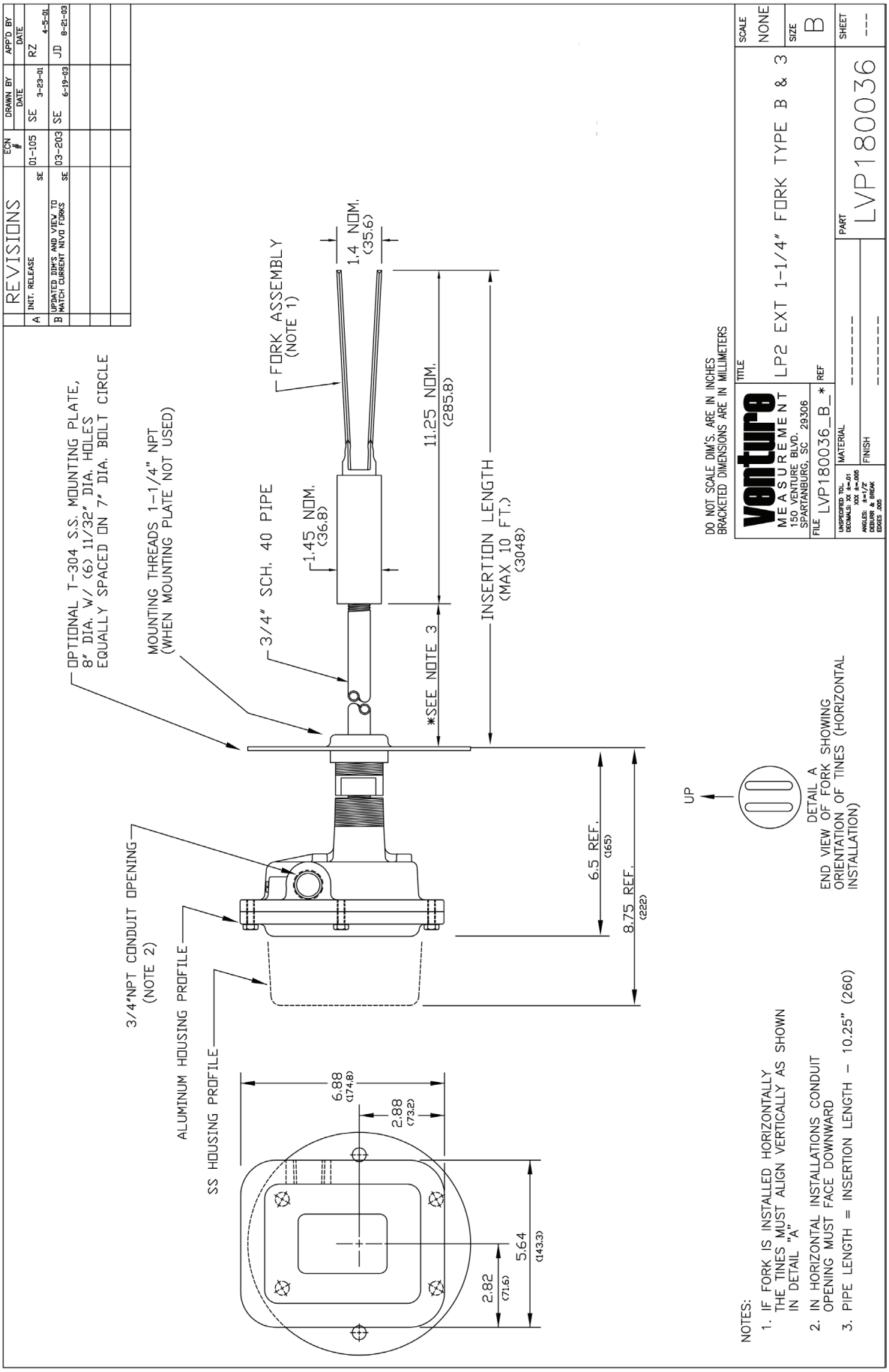

REVISIONS
A INIT. RELEASE SE 01-105 SE 3-23-01 RZ 4-5-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
T-304 S.S. MOUNTING PLATE
8" DIA. W/ (6) 11/32" DIA. HOLES
EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
FORK ASSEMBLY
(NOTE 1)
1.7 NOM.
(43.2)
3/4" SCH. 40 PIPE
1.7 NOM
(43.2)
11.00 NOM.
(279.4)
*SEE NOTE 3
INSERTION LENGTH
(MAX 10 FT.)
(3048)
8.75 REF.
(222)
.25
(6.35)
3/4"NPT CONDUIT OPENING
(NOTE 2)
ELECTRONIC HOUSING
6.88
(174.8)
2.88
(73.2)
GREEN
(POWER LED)
5.64
(143.3)
2.82
(71.6)
RED (ALARM LED)
UP
DETAIL A
END VIEW OF FORK SHOWING
ORIENTATION OF TINES (HORIZONTAL
INSTALLATION)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
TITLE
LP1 EXT 1-1/2" FORK TYPE 3
FILE LVP180031_B_*
REF
UNSPECIFIED TOL. DECIMALS: XX ±=.01 XXX ±=.005
ANGLES: ±=1/2°
DEBURR & BREAK EDGES .005
MATERIAL ---------
FINISH ---------
PART
LVP180031
SCALE NONE
SIZE B
SHEET ---

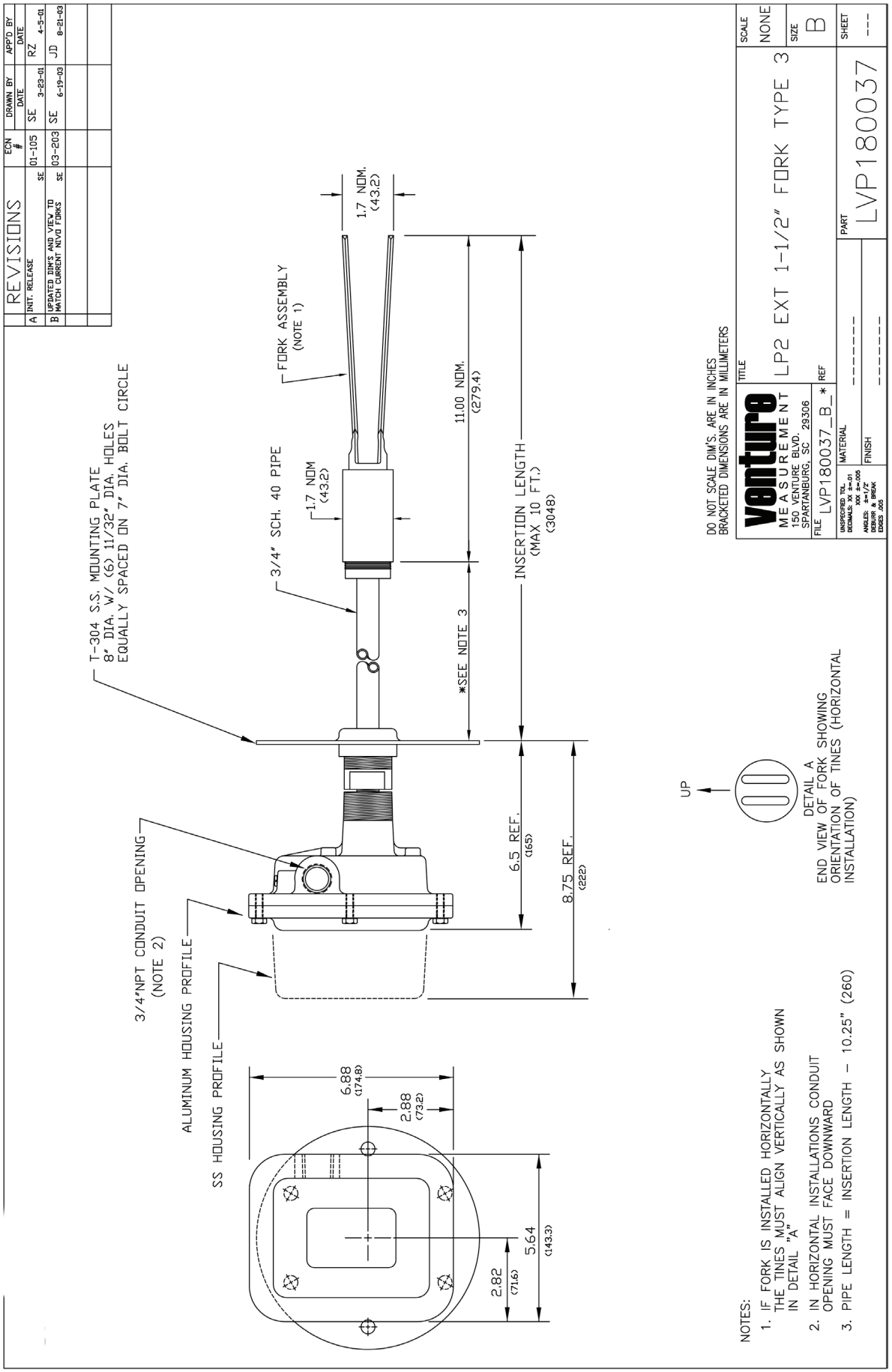

REVISIONS
A INIT. RELEASE SE 01-105 SE 3-23-01 RZ 4-6-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
C REVISED PER ECN SE 04-367 SE 10-22-04 JD 11-22-04
FORK ASSEMBLY (NOTE 1)
1.7 NOM. (43.2)
1.7 NOM (43.2)
3/4" SCH. 40 316 SS PIPE
MOUNTING THREADS 1-1/2" NPT
11.00 NOM. (279.4)
*SEE NOTE 3
CUSTOMER SPECIFIED INSERTION LENGTH (MAX 10 FT.) (3048)
8.75 REF. (222)
.25 (6.35)
ELECTRONIC HOUSING
3/4"NPT CONDUIT OPENING (NOTE 2)
6.88 (174.8)
2.88 (73.2)
GREEN (POWER LED)
RED (ALARM LED)
2.82 (71.6)
5.64 (143.3)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
FILE LVP180032_B_*
REF
TITLE
LP1 316SS EXT 1-1/2" FORK, TYPE B
UNSPECIFIED TOL. DECIMALS: XX ±=.01 XXX ±=.005 ANGLES: ±=1° DEBURR & BREAK EDGES .005
MATERIAL
FINISH
PART
LVP180032
SCALE NONE
SIZE B
SHEET ---

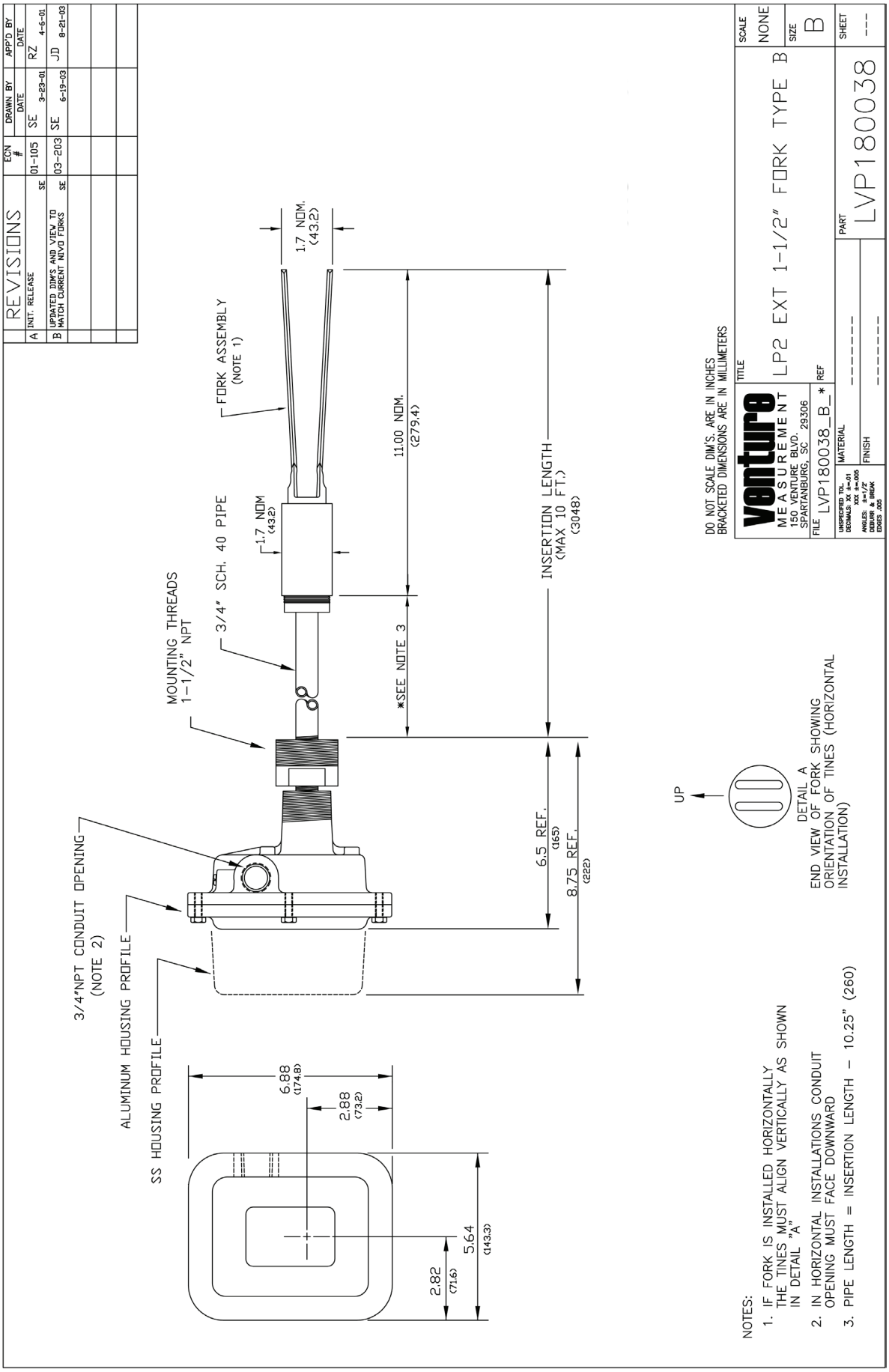

REVISIONS
A INIT. RELEASE SE ECN # 01-105 DRAWN BY SE DATE 3-23-01 APP'D BY RZ DATE 4-5-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-23-03 JD 8-21-03
OPTIONAL MILD STEEL OR T-304 S.S. MOUNTING PLATE, 8" DIA. W/ (6) 11/32" DIA. HOLES EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
MOUNTING THREADS 1-1/4" NPT (WHEN MOUNTING PLATE NOT USED)
3/4" SCH. 40 PIPE
FORK ASSEMBLY (NOTE 1)
1.4 NOM. (35.6)
1.45 NOM. (36.8)
11.25 NOM. (285.8)
*SEE NOTE 3
INSERTION LENGTH (MAX 10 FT.) (3048)
4.5 REF. (114)
6.5 REF. (165)
3/4"NPT CONDUIT OPENING (NOTE 2)
ALUMINUM HOUSING PROFILE
SS HOUSING PROFILE
6.88 (174.8)
2.88 (73.2)
5.64 (143.3)
2.82 (71.6)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
TITLE LP2 EXT 1-1/4" FORK TYPE A & 1
FILE LVP180033_B_* REF
UNSPECIFIED TOL. DECIMALS: XX ±=.01 XXX ±=.005
ANGLES: ±=1/2° DEBURR & BREAK EDGES .005
MATERIAL --------
FINISH --------
PART LVP180033
SCALE NONE
SIZE B
SHEET ---


REVISIONS
A INIT. RELEASE SE 01-105 SE 3-23-01 RZ 4-5-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
MILD STEEL OR T-304 S.S. MOUNTING PLATE, 8" DIA. W/ (6) 11/32" DIA. HOLES EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
3/4" SCH. 40 PIPE
FORK ASSEMBLY (NOTE 1)
1.7 NOM. (43.2)
1.7 NOM (43.2)
11.00 NOM. (279.4)
*SEE NOTE 3
INSERTION LENGTH (MAX 10 FT.) (3048)
3/4"NPT CONDUIT OPENING (NOTE 2)
ALUMINUM HOUSING PROFILE
SS HOUSING PROFILE
4.5 REF. (114)
6.5 REF. (165)
6.88 (174.8)
2.88 (73.2)
5.64 (143.3)
2.82 (71.6)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)
DO NOT SCALE DIM'S. ARE IN INCHES BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT 150 VENTURE BLVD. SPARTANBURG, SC 29306
TITLE LP2 EXT 1-1/2" FORK TYPE 1
FILE LVP180034_B_* REF
UNSPECIFIED TOL. DECIMALS: XX ±=.01 XXX ±=.005 ANGLES: ±=1° DEBURR & BREAK EDGES .005
MATERIAL ---------
FINISH ---------
PART LVP180034
SCALE NONE
SIZE B
SHEET ---


REVISIONS
A INIT. RELEASE SE ECN # 01-105 DRAWN BY SE DATE 3-23-01 APP'D BY RZ DATE 4-5-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
C REVISED PER ECN SE 04-367 10-22-04
MOUNTING THREADS 1-1/2" NPT ALUMINUM
3/4" SCH. 40 GALVANIZED PIPE
FORK ASSEMBLY (NOTE 1)
1.7 NOM. (43.2)
1.7 NOM. (43.2)
11.00 NOM. (279.4)
*SEE NOTE 3
CUSTOMER SPECIFIED INSERTION LENGTH (MAX 10 FT.) (3048)
5.25 REF. (133.4)
7.25 REF. (184.2)
3/4"NPT CONDUIT OPENING (NOTE 2)
ALUMINUM HOUSING PROFILE
SS HOUSING PROFILE
6.88 (174.8)
2.88 (73.2)
5.64 (143.3)
2.82 (71.6)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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
DO NOT SCALE DIM'S. ARE IN INCHES BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD. SPARTANBURG, SC 29306
FILE LVP180035_B_* REF
TITLE LP2 EXT 1-1/2" FORK TYPE A
UNSPECIFIED TOL. DECIMALS: XX ±=.01 XXX ±=.005 ANGLES: ±=1/2° DEBUR & BREAK EDGES .005
MATERIAL --------
FINISH --------
PART LVP180035
SCALE NONE
SIZE B
SHEET ---


REVISIONS
A INIT. RELEASE SE 01-105 SE 3-23-01 RZ 4-5-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
OPTIONAL T-304 S.S. MOUNTING PLATE, 8" DIA. w/ (6) 11/32" DIA. HOLES EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
MOUNTING THREADS 1-1/4" NPT (WHEN MOUNTING PLATE NOT USED)
FORK ASSEMBLY (NOTE 1)
1.4 NOM. (35.6)
3/4" SCH. 40 PIPE
1.45 NOM. (36.8)
11.25 NOM. (285.8)
*SEE NOTE 3
INSERTION LENGTH (MAX 10 FT.) (3048)
3/4"NPT CONDUIT OPENING (NOTE 2)
ALUMINUM HOUSING PROFILE
SS HOUSING PROFILE
6.5 REF. (165)
8.75 REF. (222)
6.88 (174.8)
2.88 (73.2)
2.82 (71.6)
5.64 (143.3)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)
DO NOT SCALE DIM'S. ARE IN INCHES BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT 150 VENTURE BLVD. SPARTANBURG, SC 29306
TITLE LP2 EXT 1-1/4" FORK TYPE B & 3
FILE LVP180036_B_* REF
UNSPECIFIED TOL: DECIMALS: XX ±=.01 XXX ±=.005 ANGLES: ±=1.0° DEBURR & BREAK EDGES .005
MATERIAL --------
FINISH --------
PART LVP180036
SCALE NONE
SIZE B
SHEET ---


REVISIONS
A INIT. RELEASE SE 01-105 SE 3-23-01 RZ 4-5-01
B UPDATED DIMS AND VIEW TO MATCH CURRENT NO/O FORKS SE 03-203 SE 6-19-03 JD 8-21-03
T-304 S.S. MOUNTING PLATE
8" DIA. W/ (6) 11/32" DIA. HOLES
EQUALLY SPACED ON 7" DIA. BOLT CIRCLE
FORK ASSEMBLY
(NOTE 1)
3/4" SCH. 40 PIPE
1.7 NOM.
(43.2)
1.7 NOM.
(43.2)
11.00 NOM.
(279.4)
*SEE NOTE 3
INSERTION LENGTH
(MAX 10 FT.)
(3048)
6.5 REF.
(165)
8.75 REF.
(222)
3/4"NPT CONDUIT OPENING
(NOTE 2)
ALUMINUM HOUSING PROFILE
SS HOUSING PROFILE
6.88
(174.8)
2.88
(73.2)
5.64
(143.3)
2.82
(71.6)
UP
DETAIL A
END VIEW OF FORK SHOWING
ORIENTATION OF TINES (HORIZONTAL
INSTALLATION)
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
TITLE
LP2 EXT 1-1/2" FORK TYPE 3
FILE LVP180037_B_*
REF
SCALE NONE
SIZE B
SHEET ---
PART LVP180037
MATERIAL ---------
FINISH ---------
UNSPECIFIED TOL.
DECIMALS: XX ±=.01
XXX ±=.005
ANGLES: ±=1/2°
DEBURR & BREAK
EDGES .005


REVISIONS
A INIT. RELEASE SE 01-105 SE 3-23-01 RZ 4-6-01
B UPDATED DIM'S AND VIEW TO MATCH CURRENT NIVO FORKS SE 03-203 SE 6-19-03 JD 8-21-03
1.7 NOM. (43.2)
FORK ASSEMBLY (NOTE 1)
11.00 NOM. (279.4)
1.7 NOM (43.2)
3/4" SCH. 40 PIPE
MOUNTING THREADS 1-1/2" NPT
*SEE NOTE 3
INSERTION LENGTH (MAX 10 FT.) (3048)
6.5 REF. (165)
8.75 REF. (222)
3/4"NPT CONDUIT OPENING (NOTE 2)
ALUMINUM HOUSING PROFILE
SS HOUSING PROFILE
6.88 (174.8)
2.88 (73.2)
2.82 (71.6)
5.64 (143.3)
UP
DETAIL A
END VIEW OF FORK SHOWING ORIENTATION OF TINES (HORIZONTAL INSTALLATION)
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. PIPE LENGTH = INSERTION LENGTH - 10.25" (260)
DO NOT SCALE DIM'S. ARE IN INCHES
BRACKETED DIMENSIONS ARE IN MILLIMETERS
venture MEASUREMENT
150 VENTURE BLVD.
SPARTANBURG, SC 29306
TITLE
LP2 EXT 1-1/2" FORK TYPE B
FILE LVP180038_B_*
REF
UNSPECIFIED TOL.
DECIMALS: XX ±=.01
XXX ±=.005
ANGLES: ±=1°
DEBURR & BREAK
EDGES .005
MATERIAL
FINISH
PART
LVP180038
SCALE NONE
SIZE B
SHEET ---

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150 Venture Boulevard
Spartanburg, SC 29306
Tel: (800) 778-9242
Fax: (864) 574-8063
sales@bindicator.com
www.bindicator.com

venture
MEASUREMENT

LVP180004 Rev C*