



Technology Solutions

# TEK-LCD 7801A

**NEMA 4X Loop-Powered Feet and Inches Level Indicator**



ACCESSORIES





## Introduction

### **The Tek-LCD 7801A NEMA 4X Loop-Powered Feet and Inches Level Indicator**

The Tek-LCD 7801A is one of Tek-Trol's most advanced and feature-packed plastic, field-mounted, loop-powered indicators designed specifically for level applications that require a feet and inches display. The Tek-LCD 7801A can indicate up to 399 feet, 11 and 15/16 (or 7/8) inches. The Tek-LCD 7801A is built in a NEMA 4X and IP65 rated plastic enclosure which can stand up to even the harshest environmental conditions. It features a dual-line display that can be easily scaled in the field for any 4-20 mA analog input. Two features that really make the Tek-LCD 7801A stand out are its wide viewing angle display and SafeTouch® through window buttons. These buttons allow the Tek-LCD 7801A tank-side indicator to be programmed and operated through the cover window, thus eliminating the need to remove the cover in dirty or wet environments.

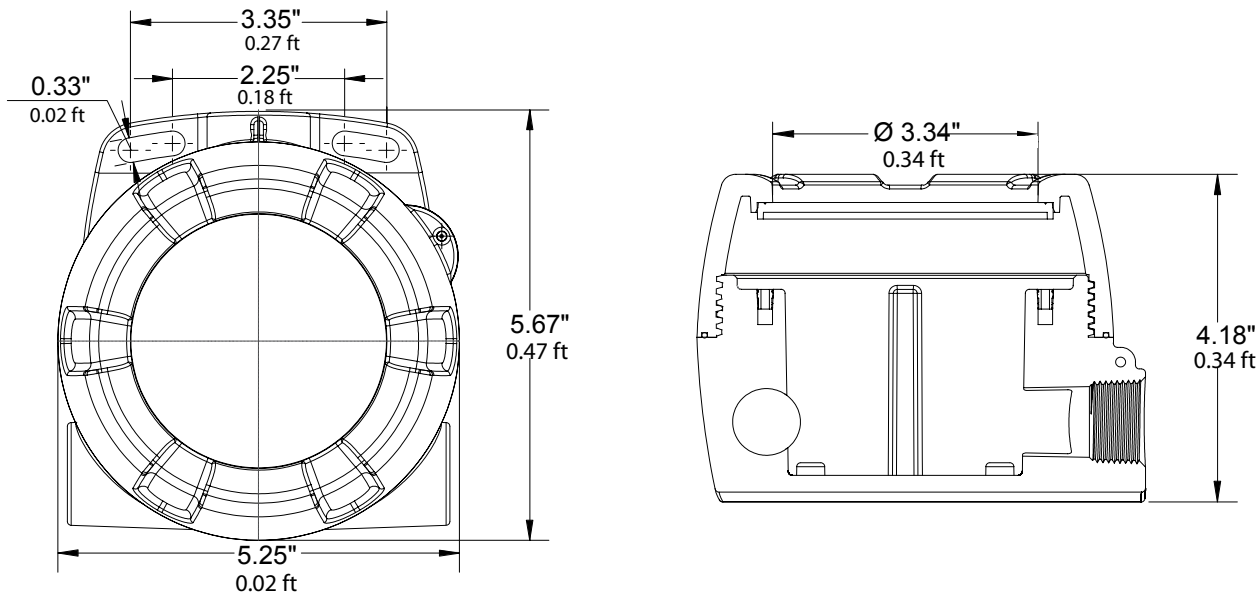
## Features

- Display Level in Feet & Inches
- 4-20 mA Input Loop-Powered
- Programmable 1/8 or 1/16 Inch Display
- 20-Segment Tank Level Indicator
- Lower Display for Tag, Volume, or Percent
- SafeTouch® Through-Window Button Programming
- Open Collector Alarm Output
- Loop-Powered or External DC-Powered Backlight Standard
- Plastic NEMA 4X, IP65 Enclosure
- Operates from -40 °C to 75 °C (-40°F to 158°F)

## Application

- Live Input Calibration
- Multi-Point Linearizer
- Square Root Extraction
- Programmable Exponent

## Dimensional Drawings



## Specifications

### General

<b>Display</b>	Feet and Inches display: 0.60" (15.2 mm) high, 0 to 399 FT - 11 15/16 IN with 1/16 or 1/8 fraction display. Lower 7-digit display: 0.4" (10.2 mm) high, 14-segment alphanumeric characters, display tag, volume 0 to 9999999, and/or 0-100 percent. Tank Level Indicator: 20 segments, F (Full) and E (Empty) Alarm Indication: HI and LO; Backlight: White, loop or DC powered
<b>Display Assignment</b>	Lower display may be assigned to custom unit or tag, volume, volume and tag, percent height, percent height and tag, or off.
<b>Display Update Rate</b>	Ambient > -25 °C: 2 Updates/Second. Ambient < -25 °C: 1 Update/5 Seconds
<b>Externally Powered Backlight</b>	Voltage Range: 9-36 VDC
<b>Over Range</b>	Level display flashes to 399 FT 11 15/16 IN Volume display flashes 9999999 if over range
<b>Under Range</b>	Display flashes -999999
<b>Programming Method</b>	Four SafeTouch through-window buttons when cover is installed. Four internal pushbuttons when cover is removed.
<b>Noise Filter</b>	Programmable low (LO), medium (MED), high (HI), or off (OFF)
<b>Recalibration</b>	Recalibration is recommended at least every 12 months.
<b>Password</b>	Programmable password restricts modification of programmed settings.
<b>Non-Volatile Memory</b>	All programmed settings are stored in non-volatile memory for a minimum of ten years if power is lost.
<b>Normal Mode Rejection</b>	64 dB at 50/60 Hz
<b>Operating Temperature Range</b>	-40 °C to 75 °C (-40°F to 158°F)
<b>Storage Temperature Range</b>	-40 °C to 75 °C (-40°F to 158°F)
<b>Relative Humidity</b>	0 to 90% non-condensing
<b>Connections</b>	Screw terminals accept 12 to 22 AWG wire
<b>Enclosure</b>	NEMA 4X, IP65 plastic field enclosure. Color: grey. Material: Polycarbonate with UV Stabilizer. Three ¾" NPT threaded conduit openings. Two ¾" NPT plastic conduit plugs, with 1.29" wrenching flats and a screwdriver slot, are included.
<b>Mounting</b>	May be mounted directly to conduit. Two slotted flanges for wall mounting or NPS 1½" to 2½" or DN .013 to .211 pipe mounting.
<b>Overall Dimensions</b>	5.67" x 5.25" x 4.18" (W x H x D) (144 mm x 133 mm x 106 mm)
<b>Weight</b>	1.65 lbs (26.4 oz, 0.75 kg)

## Input

Input Range	3 to 24 mA
Accuracy	±0.03% of calibrated span ±1 count
Temperature Drift	50 PPM/°C from -40 °C to 75 °C (-40°F to 158°F) ambient
Multi-Point Linearization	2 to 32 points each for level and volume
Calibration Range	Input Range: 4-20 mA, Input 1 & 2 Minimum Span: 0.10 mA
Maximum Voltage Drop	Without Backlight or with Externally-Powered (DC Powered) Backlight: 3.0 VDC @ 20 mA With Loop-Powered Backlight: 6.0 VDC @ 20 mA
Input Overload	Over current protection to 2 A max
Equivalent Resistance	150 Ω @ 20 mA without loop-powered backlight. 300 Ω @ 20 mA with loop-powered backlight.
HART Transparency	Analog input will not interfere with existing HART communications on the wired 4-20 mA signal

## Open Collector Output

Alarm Output	Assign to level or volume for high or low alarm trip point
Deadband	0-100% FS, user selectable
Acknowledge	Front panel ENTER button and external RESET terminals resets output and screen indication.

## Installation

### Installation Flexibility

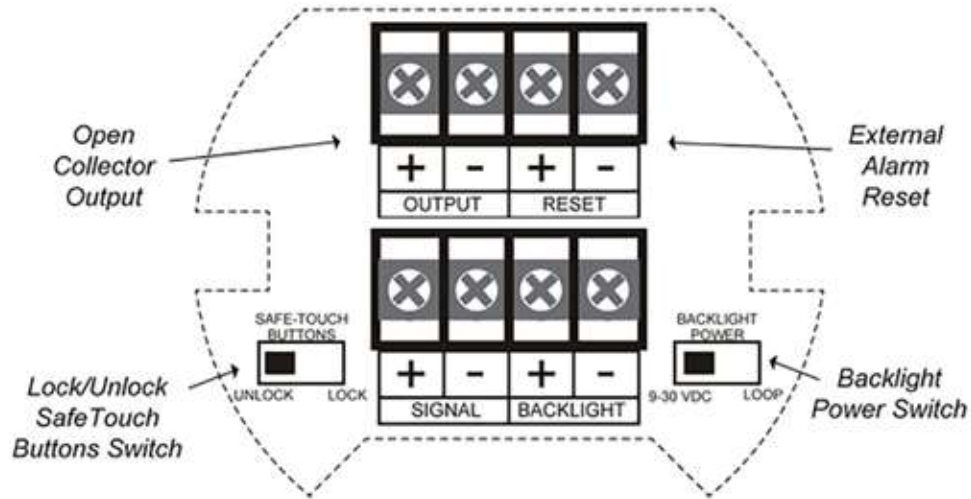
- Tek-LCD 7801A rotatable display/meter module along with three available conduit connections provide for numerous installation options. The display can be rotated in 90° increments. Rotate it 90° for horizontal mounting. Wiring can then be routed to either the top conduit connection, or from below to the opposite conduit connection (plastic conduit plug supplied). Use the three conduit connections for through-wiring in any direction. Two 3/4" NPT plastic conduit plugs, with 1.29" wrenching flats and a screwdriver slot, are included.



### Easy Wiring and Service

- Unscrew the two captured thumb screws and unplug a connecting cable and the display/meter module is simply and completely removed. A heavy duty terminal block is then easily accessed and wired. It is clearly marked to prevent wiring errors. The display/meter module can be removed without breaking the loop. As such, it can be serviced without the need to uninstall the entire product. All relevant hazardous area guidelines must be followed during service.

## Connections



## Popular Models

Model Number	Description
7801A-0K1	NEMA 4X Loop-Powered Feet & Inches Level Indicator

## Accessories

Model Number	Description
7800A-6846	Steel Pipe Mounting Kit
7800A-6846SS	Stainless Steel Pipe Mounting Kit
7800A-PLUG75P	¾" NPT Plastic Conduit Plug

# Customer Service and Support



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