

SUBMERSIBLE LEVEL TRANSMITTER

SL5 Series

Installation and Operational Manual



- ▶ RoHS & REACH Complaint.
- ▶ Lightweight and compact footprint
- ▶ Highly accurate down to 0.25% FS
- ▶ Up to 500 psi ranges available
- ▶ Long term stability, reducing maintenance & calibration cost
- ▶ CE compliant with highly corrosion resistant material, environment friendly halogen free wires and superior EMI/RFI protection

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1.0 GENERAL:

To ensure proper and safe operation of a Barksdale Submersible Level Transmitter, the entire manual must be read and understood clearly. Please pay special attention to all safety information.

2.0 INTENDED USE:

Barksdale's Submersible Level Transmitter is intended to measure level across various industrial applications.

3.0 SAFETY INSTRUCTIONS AND WARNINGS

- ⚠ Read this manual before working with the product. The contents must be thoroughly read and understood before installing, using or maintain this product. Misuse of this product may cause explosion and personal injury.
- ⚠ Temperature Range: refer 4.1
- ⚠ Prior to installation, check the wetted parts material for compatibility to the process media.
- ⚠ This product should be installed according to local standards and safety codes for that area.
- ⚠ Avoid contact with the exposed leads and terminals. High voltage that may be present on leads can cause electrical shock.
- ⚠ Apply and maintain pressure within the limits of markings of the device.

4.0 Technical Data

4.1 Common Specifications for All Units

Specification	Value
Accuracy (BFSL@25°C)	± 0.25% FSO
Supply	8 to 33 VDC
Long Term Stability	± 0.2% FSO (per year, typical)
Output	4 to 20 mA, loop powered
Proof Pressure	2 times rated pressure range
Zero Offset	±1% FSO
Wetted Material	316L Stainless Steel, Polyurethane Cable Jacket
Span Offset	±1% FSO
Electrical Connection	Jacketed cable, standard
Enclosure	316L Stainless Steel
Weight (Approx)	sensor: 0.33 lb Flush sensor with protective cage: 4.53 lb Cable: 0.70 lb {30 ft cable}
Minimum Load Resistance	≥7.5 kΩ
Max Loop Load	(Vsupply - 8) / 0.022
Temperature Range - Compensated	-4 to +176 °F (-20 to +80 °C)
Temperature Range - Storage	-40 to +212 °F (-40 to +100 °C)
Temperature Range - Operating (ambient)	-40 to +176 °F (-40 to +80 °C)
All models are tested to meet or exceed the published specifications. The calibration and testing were done using instrumentation and standards traceable to the National Institute of Standards and Technology (NIST).	

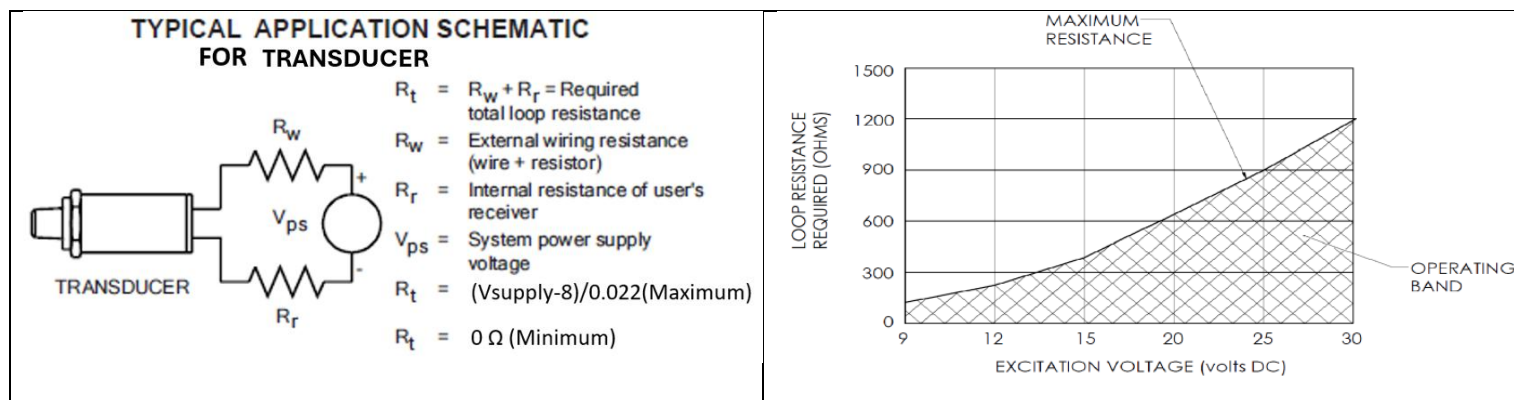
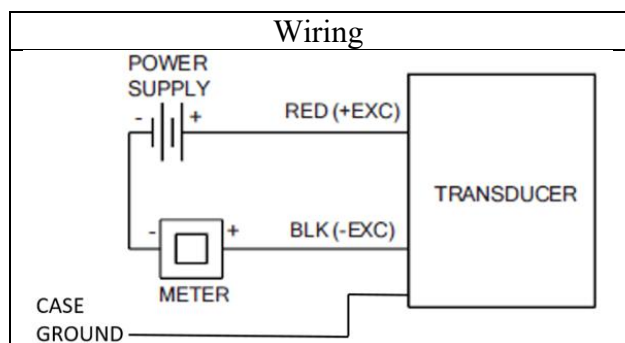
5.0 Wiring and Pin Connection:

Use shielded wire cable. Do not run wires next to power lines, electrical systems, motors, generators, or any other equipment which may generate a significant amount of electrical noise or magnetic fields. If shielded cable is used, ground only one side of the cable, typically to the negative side of the power supply.

Wire Code for connections:

Electrical Signal	Wire Color
+Excitation	Red
-Excitation (common)	Black
Case ground/Drain/Earth	Drain

The unit should be attached to the power supply with load resistor in series as shown in the picture below to create the current loop. A current meter can be placed anywhere on the loop to measure the loop current. A voltmeter can also be used to measure the current by measuring the voltage across the 250 ohms in series as shown in the picture below.

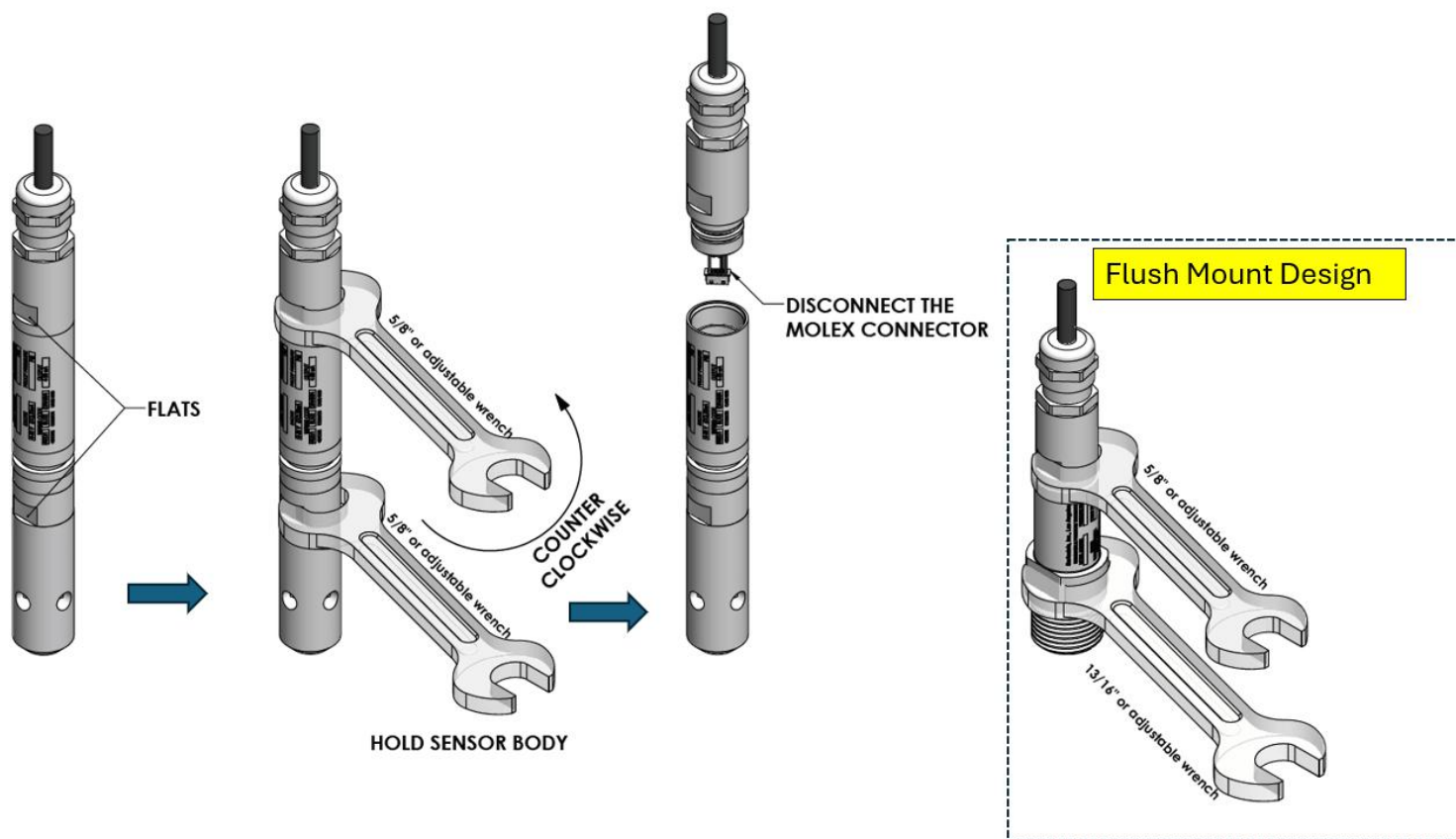


6.0 Sensor Replacement:

- Hold the sensor body by the two flats using a 5/8-inch, 13/16-inch, or an adjustable wrench.
- With a second 5/8-inch or adjustable wrench, grip the cable assembly by its flats.
- Turn the cable assembly counterclockwise to detach it from the sensor body.
- Once separated, disconnect the Molex connector to fully separate the sensor body and cable assembly.

Reassembly After Replacement

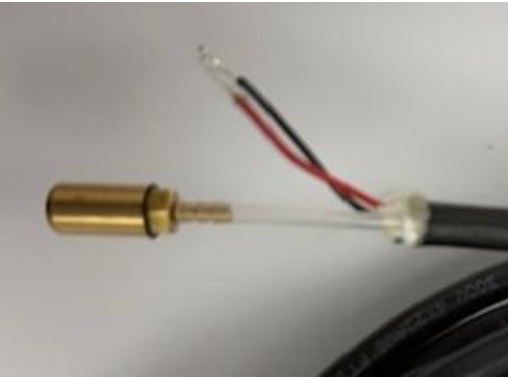
- Ensure the O-ring is in place before reassembly.
- Connect the Molex connector.
- **Important:** After connecting the Molex, turn the cable assembly counterclockwise 3–4 turns before engaging clockwise tightening with sensor body.
This prevents wire twisting and potential damage.
- Using two wrenches, turn the cable assembly clockwise until fully tightened.
- Confirm no visible gap between the sensor body and cable assembly when properly reassembled.



Replacement Part Numbers

Sensor Assembly Part Number	KDSL5-XXX
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Kindly note, if the existing sensor has vent tube, then the replacement sensor will also have the vent tube. Refer below picture for reference.



4

3

2

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Series

KDSL5 Submersible sensor module MT

Pressure Range

Pressure Call out (-XX)	Pressure Range (PSI)	Feet of Water
-25	0-5	12
-38	0-7	16
-01	0-15	35
-39	0-25	58
-21	0-30	70
-40	0-36	83
-03	0-50	116
-22	0-60	139
-41	0-87	201
-04	0-100	231
-05	0-150	347
-06	0-200	462
-42	0-230	531
-07	0-300	693
-43	0-360	832
-08	0-500	1155

Pressure Unit & Type

-G	PSI -Gauge pressure
-A	PSI -Absolute pressure

Options

-SXXY	Special pressure range
-P	Sensor protective cage
-N	Nose Cone
-F	Flush Mount

SENSOR MODULE (STANDARD)

NOSE CONE

STANDARD DESIGN

SENSOR MODULE (FLUSH MOUNT)

SENSOR PROTECTIVE CAGE

FLUSH MOUNT DESIGN

DRAWN: FRANKEN

DATE: 05-04-2022

CHECKED: DATE:

APPROVED: DATE:

UNLESS OTHERWISE SPECIFIED:

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KIT - SL5

Barksdale

CONTROL PRODUCTS

Los Angeles, CA 90058-0843

(Ph: 323-589-6181 Fax: 323-589-6252)

REVISIONS

REV	DATE	DESCRIPTION
C.1	01-28-2022	

REVISIONS

REV	DATE	DESCRIPTION
C.1	01-28-2022	

REVISIONS

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C.1	01-28-2022	

NOTES:

1. REFER INSTALLATION INSTRUCTION MANUAL #272554 FOR REPLACEMENT OF SENSOR MODULE

NOTES: UNLESS OTHERWISE SPECIFIED

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7.0 Cleaning:

WARNING! Never attempt to probe, insert, or clean the membrane, pressure port, or nose cap of the **Barksdale Submersible Level Transducer device** with any object. Any contact can cause irreversible damage to the sensing membrane, which typically requires complete replacement.

8.0 Troubleshooting:

This section provides summarized maintenance and troubleshooting suggestions for the most common operating problems.

Faults	Causes	Measures
No output signal	Cable break	Check the continuity of the cable and if required replace the cable
	No/wrong power supply	Rectify the power supply (for example: Polarity)
Wrong output signal	Improper power supply voltage	Increase or decrease the power supply voltage to operate the device within the specifications
No change in output signal upon change in applied pressure	Sensor damage due to overpressure applied	Replace unit; Contact Barksdale.
Signal output is not proportional to applied pressure	Sensor damage due to overpressure applied	Replace unit; Contact Barksdale.
Fluctuations in the output signal	Sealing damaged or Improper sealing	
	Electromagnetic interference sources in the field around device (for example switching of heavy inductive load, etc.,)	Shield unit; cable shield; remove source of EMC interference
	Unit not grounded	Ground the unit
	Strongly fluctuating pressure of the process medium	Damping; consulting by Barksdale

9.0 Product configurator – How to order

Refer to configurator table on sales drawing or datasheet to configure the product.

- SL5 Series: <https://www.barksdale.com/sites/default/files/2025-10/Submersible%20Level%20Transmitter-DS.pdf>

10.0 Return Request / Inquiries

Direct all warranty and repair requests/inquiries to Barksdale, Inc. Customer Service Department.

Call 323-589-6181, FAX: 323-589-3463

Before returning any product(s) to Barksdale, you must obtain a returned merchandise authorization from our customer service department (in order to avoid processing delays).

For warranty returns, please have the following information available BEFORE contacting Barksdale:

1. P.O. number under which the product was PURCHASED.
2. Model number of the product under warranty.
3. Repair instructions and/or specific problems you are having with the product.
4. Application information. Copyright 2025 Barksdale, Inc.

