

SensorsX SX-LCRB Series

RF-Admittance / Capacitive Continuous Level Transmitter

For liquids, powders and bulk solids



■ PRODUCT OVERVIEW

The SensorsX SX-LCRB Series is designed for continuous level measurement of liquids, powders and bulk solids in tanks, vessels, hoppers and silos. A range of rod, rope, coated-electrode, reference-tube and dual-electrode configurations allows the transmitter to be matched to conductive and non-conductive media and different vessel geometries. The series provides 4–20 mA or 0–10 V output options and is available in standard, high-temperature and intrinsically safe configurations.

- ◆ 4-20 mA or 0-10 V analog output options
- ◆ Rod electrodes up to 5 m; rope electrodes up to approximately 20 m
- ◆ Bare, PFA-coated and FEP-coated electrode configurations
- ◆ Threaded or Tri-Clamp process connections
- ◆ Integral or remote installation; optional display
- ◆ Standard, intrinsically safe and high-temperature variants
- ◆ Suitable for level measurement under varying process conditions, including pressure, vacuum, vapor, dust, and partial surface foam.

■ TYPICAL APPLICATIONS

Liquid Storage & Process

- Tank and vessel level monitoring
- Chemical storage vessels
- Fuel and petrochemical tanks

Bulk Solids & Powders

- Silo level monitoring
- Hopper level control
- Bulk material storage

Hazardous & High-Temperature

- Intrinsically safe zone installations
- High-temperature process vessels
- Level measurement of conductive and non-conductive media

■ TECHNICAL SPECIFICATIONS

Parameter	Specification / condition
Supply voltage - standard variants	18-36 V DC
Supply voltage - Xi / XiT variants	9-30 V DC (intrinsically safe variants; barrier/system design required)
Output options	4-20 mA or 0-10 V; two-wire/four-wire selections per ordering table
Display (option)	0-99999; height 0-99999 mm; current 4-20 mA
Current consumption	Approx. 30 mA at 24 V DC (voltage-output standard variant)
Nominal electronic measurement span	300 pF (separate from selectable field-calibration ranges)
Initial capacitance adjustment ratio	At least 1:2
Non-linearity	0.5%
Electronics operating temperature	-20 to +80°C (general technical specification)
Temperature error	Max. 0.05%/K
Current / voltage output error	Max. 0.3 μ A/V and 0.1 mV/V
Insulation resistance / dielectric strength, electrode-to-housing	1 M Ω / 250 V AC
Coupling capacitance / dielectric strength, housing-to-supply leads	51 nF / 250 V AC
Degree of protection	IP67 housing; IP65 connector; optional IP67 connector
Maximum load - current output	500 Ω at 24 V DC
Minimum load - voltage output	> 1 k Ω
Rope electrode tensile strength	Max. 1,400 kg
Recommended cable	PVC 2 $\times$ 0.75 mm ² or 3 $\times$ 0.5 mm ² ; 105°C
Weight excluding electrode	Approx. 0.5 kg (N/Xi); approx. 1 kg (NT/XiT)

Intrinsically Safe Variant

Parameter	Value
Maximum internal values	Pi = 0.99 W; Ci = 370 nF; Li = 0.9 mH; Ui = 30 V DC; li = 132 mA
Insulation resistance / dielectric strength, electrode-to-housing	1 M Ω / 250 V AC
Coupling capacitance / dielectric strength, housing-to-supply leads	26 nF / 500 V AC
Permissible Zone 0 temperature range (EN 50284)	-20 to +60°C
Permissible Zone 0 pressure range (EN 50284)	0.08 to 0.11 MPa

■ ELECTRONIC RANGE SELECTION

Recommended Initial Range - Bulk Solids

Medium	Probe	1 m	5 m
Sand / granules	10 / 12 / 30	2	3
Cement	10 / 12 / 30	2	4
Flour	10 / 12 / 30	1	3

Recommended Initial Range - Liquids

Medium	Probe	1 m	2 m
Water	10	-	-
Water	12 / 22 / 32	3	4
Gasoline / petroleum / diesel / oil	10	1	2
Gasoline / petroleum / diesel / oil	12 / 32	1	2
Gasoline / petroleum / diesel / oil	20 / 22	2	3

Note: for types 10, 12, 30, 31 and 32, maintain approximately 250 mm clearance from a conductive side wall. These values are starting points only.

■ ELECTRODE CONFIGURATIONS & APPLICATIONS

Code	Electrode configuration	Typical use / maximum length
10	Bare stainless-steel rod	Non-conductive liquids and bulk solids; max. 5 m
11	Fully PFA-coated stainless-steel rod	Water and conductive liquids, including wastewater, in metal vessels, concrete tanks and reservoirs; max. 3 m
12	Fully FEP-coated stainless-steel rod	Water and conductive liquids, including wastewater, in metal vessels, concrete tanks and reservoirs; max. 3 m
20	Bare stainless-steel rod with reference tube	Precise non-conductive liquid measurement, such as oil, diesel and gasoline; max. 3 m
22	FEP-coated rod with reference tube	Conductive liquids in plastic vessels or tanks; not suitable for wastewater, high-viscosity liquids, or bulk solids; max. 3 m.
30	Bare stainless-steel rope with weight	Bulk solids; approx. 20 m
31	Bare stainless-steel rope with anchor	Tall silos / bulk solids; approx. 20 m
32	Fully coated rope with weight (FEP + PTFE)	Conductive and non-conductive liquids; approx. 20 m
40	Dual fully coated stainless-steel rods (FEP)	Corrosive liquids; max. 2 m; for non-hazardous areas only

Process Connections

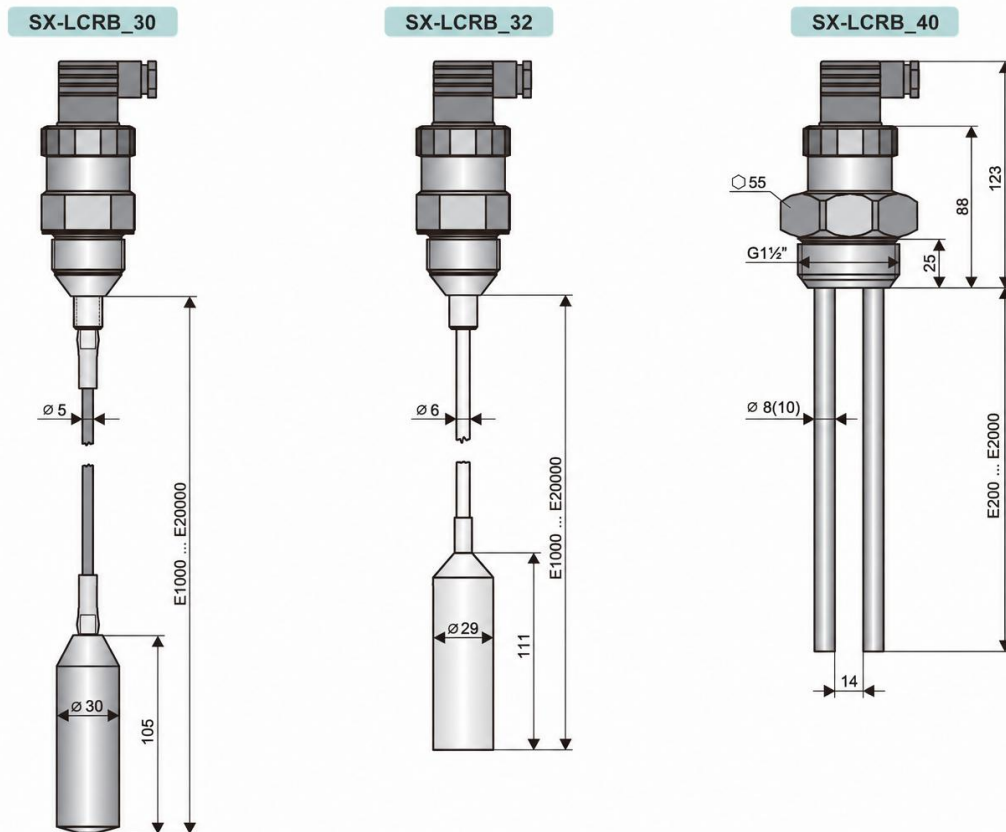
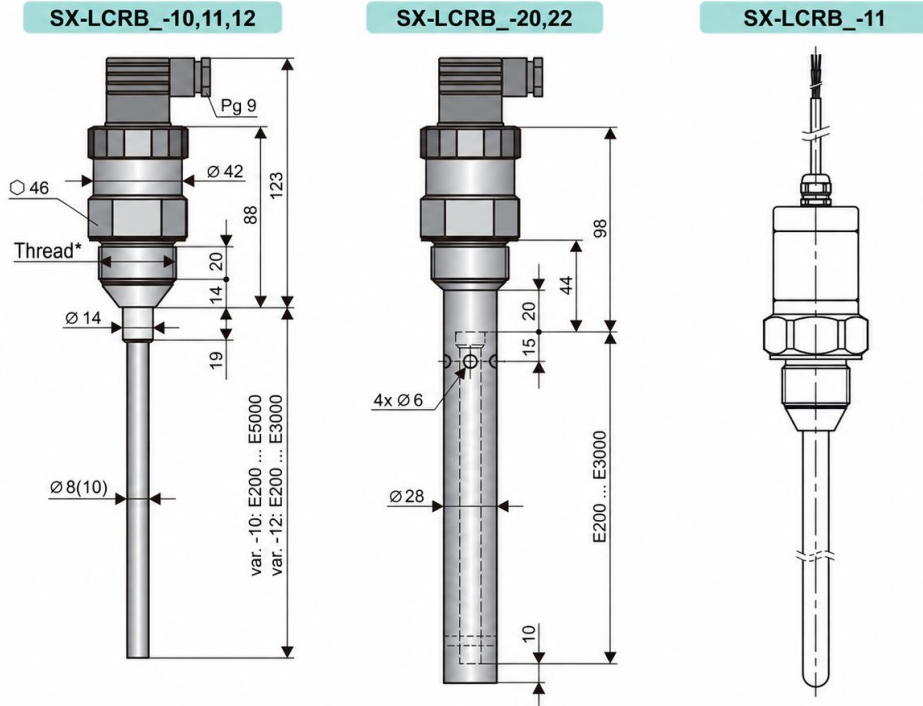
Code	Connection
M	M36 × 2 metric thread
G	G 1 thread; G 1½ for electrode code 40
C	Tri-Clamp

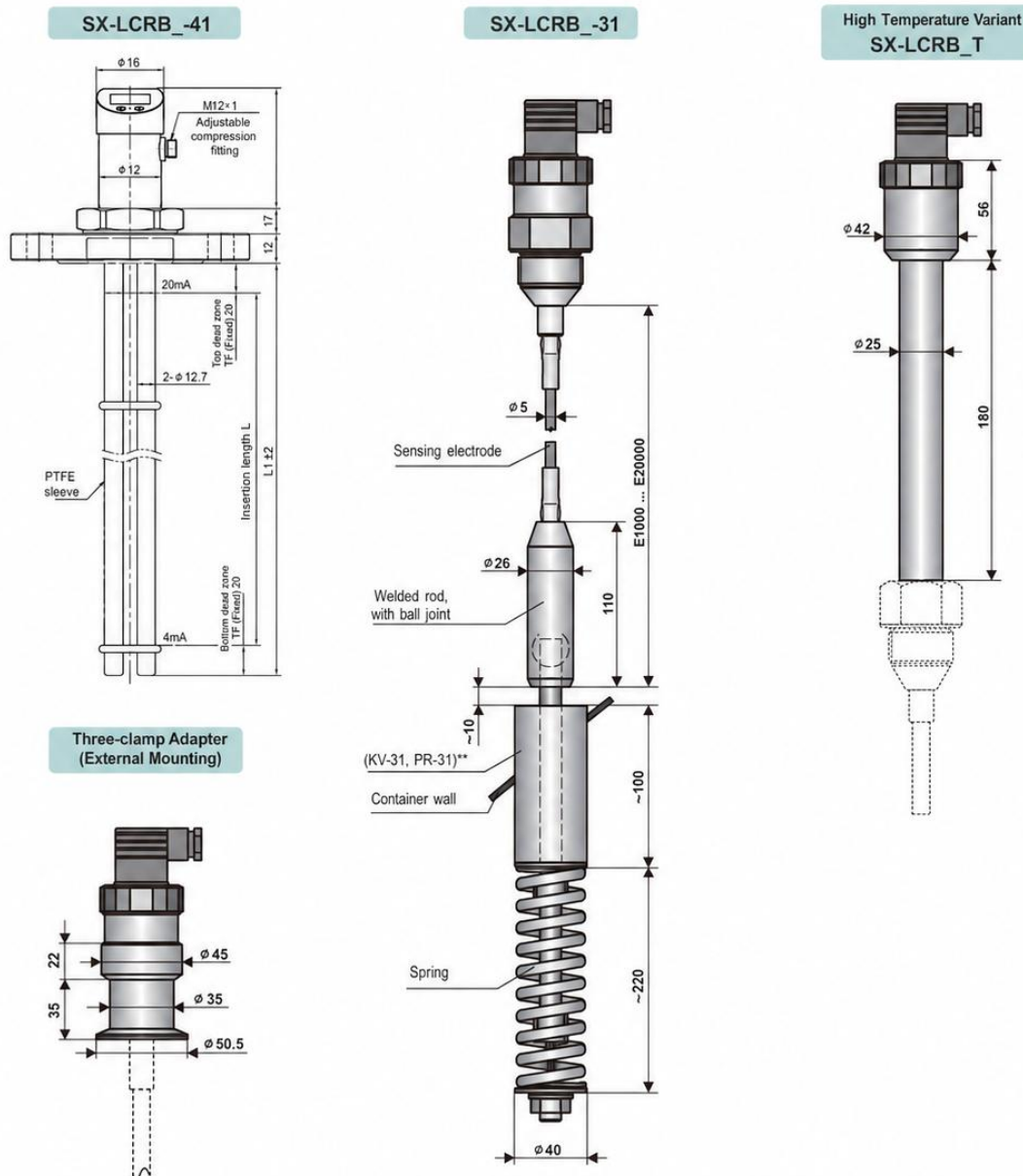
Installation Notes

- ◆ Install perpendicular to the tank or vessel top where applicable.
- ◆ Metal tanks normally provide the required reference through the process connection. Non-metal vessels may require an auxiliary reference electrode.
- ◆ Maintain clearance from vessel walls and the bottom; required distance depends on electrode length and configuration.
- ◆ For coated electrodes, remove the transport protection from the electrode tip before installation.

MECHANICAL REFERENCE DIMENSIONS

Electrode length E is configuration-dependent; order-code lengths must be confirmed against the selected electrode and process connection.





Units: mm. Thread options are M36 x 2 and G 1; electrode code 40 uses G 1½. Drawing is for configuration reference and is not a manufacturing-control drawing.

■ MATERIALS OF CONSTRUCTION

Component / configuration	Standard material	Optional / note
Housing - most variants	Stainless steel 1.4301 / AISI 304	1.4571 / AISI 316Ti or 2.4858 / Incoloy 825 on request
Insulating bushing	PTFE	-
Electrodes 10/11/12/20/22/40	Stainless steel 1.4301 / AISI 304	1.4571 / AISI 316Ti on request
Electrodes 30/31	Stainless steel 1.4404 / AISI 316L	-
Electrode 32 rope	Zinc-plated steel rope	-
Coating 12/22/32/40	FEP	-
Coating 11	PFA	-
Insulation / head components 31/32	PTFE	Configuration dependent
Weight / anchoring mechanism 30/31/32	Stainless steel 1.4301 / AISI 304	-
Reference tube 20/22	Stainless steel 1.4301 / AISI 304	1.4571 / AISI 316Ti on request

■ VESSEL GEOMETRY & MEASUREMENT LINEARITY

Vessel geometry changes the relationship between level and measured capacitance. Select the electrode configuration with the required field geometry before calibration.

Configuration	Expected behavior
Codes 10/11/12 and 30/31/32 in a curved vessel	Non-linear capacitance change for non-conductive media.
Codes 20/22 with reference tube	Linearized field in curved or straight vessels.
All applicable single probes in a straight-wall vessel, mounted parallel to the wall	Generally linear capacitance change.
Code 40 dual-electrode probe	Linear behavior in straight- or curved-wall vessels, subject to application conditions.

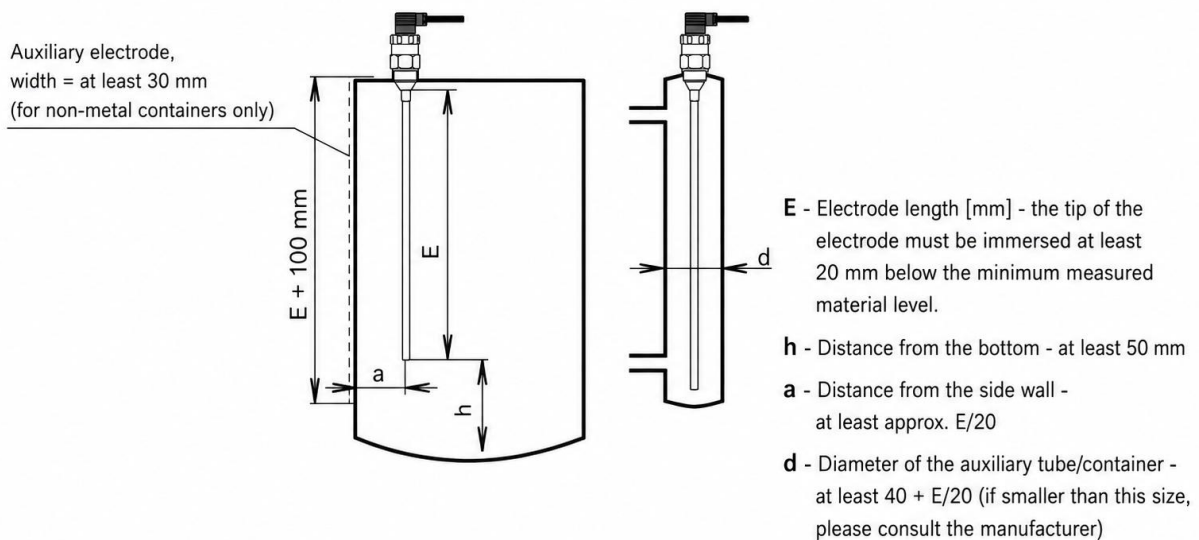
The vessel itself forms part of the measuring capacitor. Changes to probe position, wall distance, internals, grounding or vessel geometry require recalibration.

■ INSTALLATION AND PUTTING INTO OPERATION

- ◆ Remove the protective cap from the end of a coated electrode before installation.
- ◆ Install vertically through a suitable M36 × 2 weld-on flange, retaining nut, G-thread connection or Tri-Clamp connection, as selected.
- ◆ A conductive metal vessel normally supplies the reference/ground through the process connection; no additional housing ground is normally required.
- ◆ In concrete vessels or silos, mount the transmitter on a bonded metal structure and electrically bond surrounding conductive structure.
- ◆ For plastic or glass vessels without a reference tube, connect the housing ground screw to an auxiliary electrode. Select auxiliary-electrode material for the medium and environment.
- ◆ Keep the probe clear of the filling stream, agitators and moving internals. Do not use the electrode as a mechanical support.

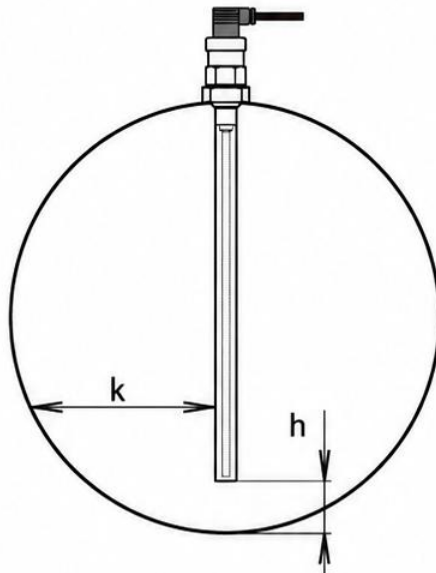
Metal and Non-metal Containers

SX-LCRB_-10,11,12



Variant Using Reference Tube

SX-LCRB_-20,22

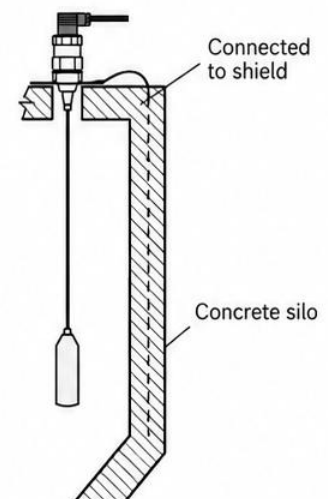
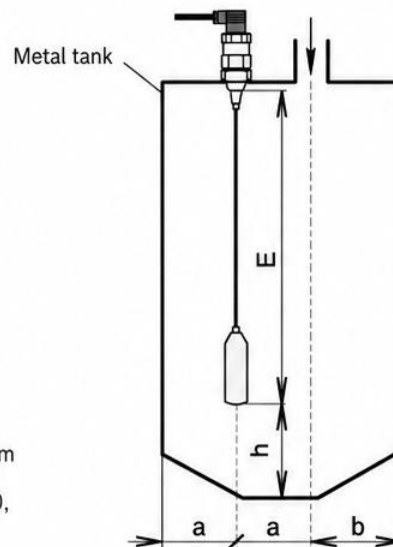


- h** - Distance from bottom — at least 50 mm, determined according to the possible presence of heavy fractions (water) in petroleum products
- k** - Distance from side wall — optional

Deep Containers, Vessels and Silos

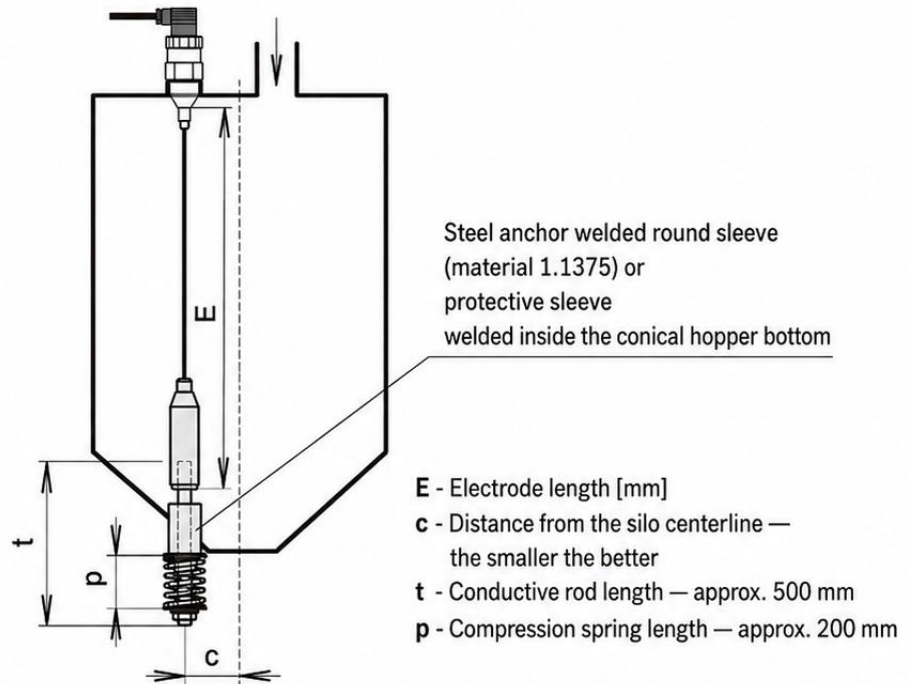
SX-LCRB_-30,32

- E** - Electrode length — the lower end of the electrode must be immersed at least 20 mm below the minimum measured material level
- h** - Distance from bottom — at least 100 mm
- a** - Distance from side wall — at least $E/20$, position it as close as possible to the midpoint between the side wall-to-side wall span and the vertical inlet



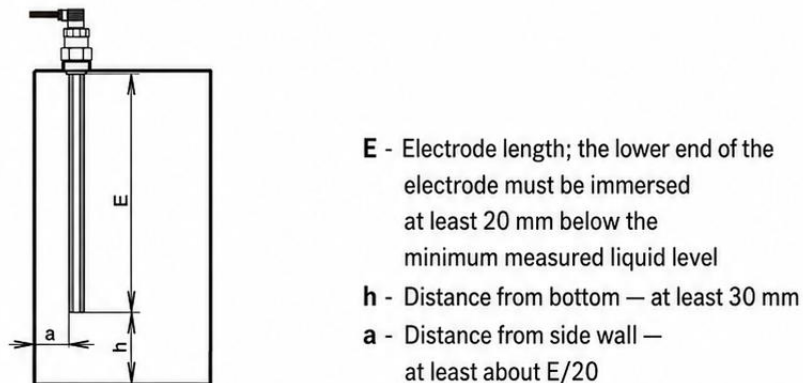
Cable Electrode Using Anchor Rod

SX-LCRB_-31



Corrosive Liquids / Non-metal Containers

SX-LCRB_-40



E is the active electrode length. Final clearances must also account for process movement, buildup and vessel internals.

■ INSTALLATION DETAILS BY ELECTRODE TYPE

Electrode	Installation requirement
10 / 11 / 12 — rod	End of electrode at least 20 mm below minimum measured level; bottom clearance $h \geq 50$ mm; side clearance $a \geq E/20$. On non-metal vessels, auxiliary electrode width ≥ 30 mm; recommended auxiliary vessel/tube diameter $d \geq 40 + E/20$ mm.
20 / 22 — reference tube	Bottom clearance $h \geq 50$ mm; account for possible water/heavy fractions beneath petroleum products. Side clearance k is not critical because the reference tube defines the field.
30 / 32 — rope with weight	End at least 20 mm below minimum measured level; bottom clearance $h \geq 100$ mm; side clearance $a \geq E/20$ and preferably midway between the wall and vertical inlet stream.
31 — anchored rope	Place anchor as close as practical to silo centerline. Approximate conductive anchor rod length $t = 500$ mm; spring compression length $p = 200$ mm. Use the specified weld-on anchor or dust sleeve.
40 — dual electrode	End at least 20 mm below minimum measured level; bottom clearance $h \geq 30$ mm; side clearance $a \geq E/20$. Stable impedance between medium and vessel bottom is required: isolate intermittent grounding paths or provide permanent medium grounding.

Pre-start Checks

- ◆ Verify process connection, probe length, coating, pressure and temperature rating against the order.
- ◆ Confirm the probe is undamaged, clean and not shorted to the vessel.
- ◆ Confirm vessel/reference bonding and cable shield arrangement.
- ◆ Check that the selected output, supply voltage and hazardous-area barrier match the nameplate.
- ◆ Commission only after the vessel/probe assembly is in its final mechanical configuration.

■ ELECTRICAL CONNECTION

Use a cable with 6–8 mm outer diameter and recommended conductor area of 0.5–0.75 mm². Disconnect power before opening or wiring the connector.

Connector Wiring Procedure

Step	Action
1	Unscrew and remove the connector from the transmitter body with a suitable screwdriver.
2	Use a flat-blade screwdriver at the indicated release gap to remove the terminal insert.
3	Unscrew the cable gland and feed the cable through it.
4	Connect conductors to the screw terminals for the supplied current- or voltage-output version; tighten all terminals.
5	Push the terminal insert fully back into the connector, with terminal 3 oriented toward the cable entry; tighten the gland.
6	Inspect the connector seal, refit the connector to the transmitter and then apply power.

ELECTRICAL CONNECTION — TERMINAL REFERENCE

Four-wire terminal / color (4...20 mA)	Function
1 — brown	Supply +
2 — white	Supply -
3 — blue	Signal +
4 — black	Signal -
5 — green/yellow or shield	Cable shield / protective bonding point as applicable

Power and Cable Requirements

- ◆ Standard versions: stabilized 18–36 V DC SELV supply.
- ◆ Xi / XiT versions: use only the permitted intrinsically safe supply/barrier and verify the current certificate and entity parameters.
- ◆ Use shielded cable where EMI is strong, the cable route runs parallel to power conductors, or cable length exceeds 30 m.
- ◆ Do not infer two-wire connections from the four-wire terminal table. Follow the dedicated connection diagram supplied with the ordered output version.

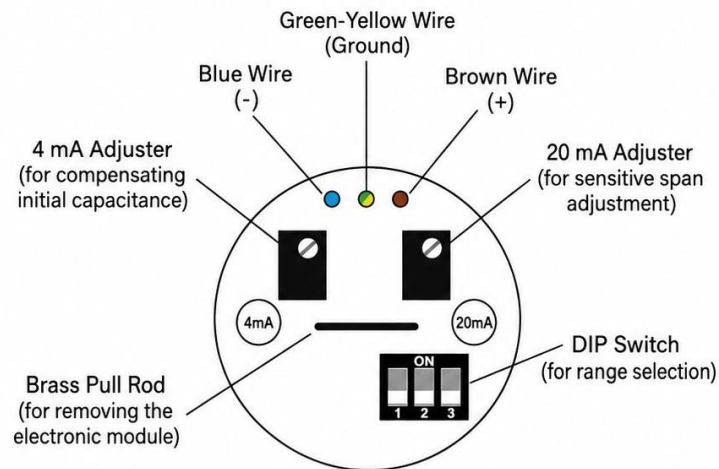
WARNING — Make all electrical connections with power removed. Hazardous-area wiring and bonding must be designed and installed by qualified personnel in accordance with the current approval documentation and local code.

Preparation for Measurement

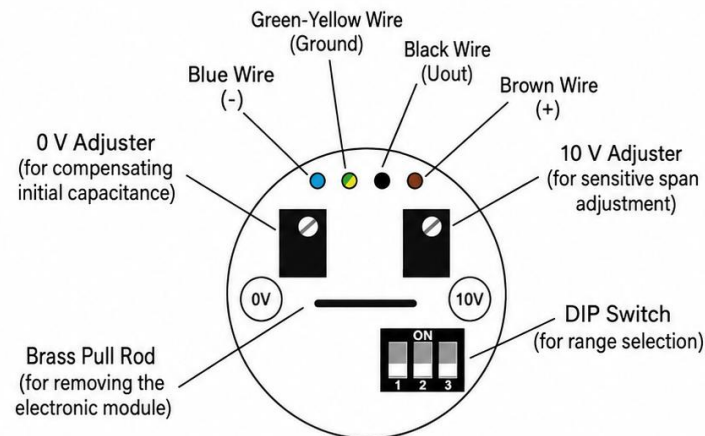
Step	Current output (4–20 mA)	Voltage output (0–10 V)
1	Disconnect the connector and loosen the housing nut carefully; protect internal leads. Reconnect for powered adjustment.	Same procedure.
2	Connect supply through an ammeter/controller.	Connect supply and a suitable voltmeter/controller.
3	Set the 20 mA span trimmer to its factory base position: fully clockwise, then approximately three turns counter-clockwise.	Set the 10 V span trimmer to its factory base position using the same method.

The internal module includes a zero trimmer (4 mA or 0 V), span trimmer (20 mA or 10 V), DIP switches for range selection and a brass pull rod. Trimmers are approximately 15-turn devices. Avoid stressing the internal wiring.

INTERNAL ADJUSTMENT ELEMENTS



Top View of Internal Electronic Module – Current Output (Variant-I)



Top View of Internal Electronic Module – Voltage Output (Variant-U)

Element	Function
4 mA Adjuster	Compensates initial capacitance at the empty/minimum calibration condition.
20 mA Adjuster	Sets 20 mA or 10 V at the full/known calibration condition.
DIP switches	Select one of eight electronic capacitance ranges.
Brass pull rod	Used to withdraw the electronic module; do not pull on internal conductors.

■ FIELD CALIBRATION AND COMMISSIONING

Analog 4–20 mA Output

Step	Action
1	Empty the vessel to the minimum calibration level.
2	Select an initial DIP range; starts with range 2 (250 pF).
3	Adjust the 4 mA zero trimmer. If 4 mA cannot be reached, select the next higher range.
4	Fill to maximum level, or to a known verified partial level. For partial calibration calculate $I_{out} = 4 + 0.16 \times \text{level (\%)} \text{ mA}$.
5	If output remains below the target, try the lowest range. If output exceeds the target, step upward through ranges until it is just above target.
6	Use the 20 mA span trimmer to set the target output.
7	Recheck and correct the 4 mA zero setting for best accuracy.

Analog 0–10 V Output

Step	Action
1	Empty the vessel to the minimum calibration level.
2	Select an initial DIP range; starts with range 2 (250 pF).
3	Adjust the 0 V zero trimmer. If 0 V cannot be reached, select the next higher range.
4	Fill to maximum level, or to a known verified partial level. For partial calibration calculate $U_{out} = 0.1 \times \text{level (\%)} \text{ V}$.
5	Step through ranges until the output is just above the required target, then use the 10 V span trimmer to set the target.
6	Recheck and correct the 0 V zero setting for best accuracy.

Calibration must be performed on the actual installed probe and vessel. Recommended range tables are starting points only.

The trimmer is a multi-turn type, approximately 15 turns.

Sensitivity – the minimum change in electrode capacitance required to achieve the full output range of 4–20 mA or 0–10 V.

Range = housing capacitance + active electrode capacitance required to achieve the full output range of 4–20 mA or 0–10 V.

Example: for an uncoated electrode immersed 1000 mm in fuel: 20 pF + 30 pF; for a coated electrode immersed 1000 mm in water: 20 pF + 500 pF.

With a short electrode, or when a very sensitive range is selected, the transmitter output current may be limited to a maximum of 30 mA.

DIP Switch Position Table

Range	Sensitivity S	Range R	DIP Switch Position
1	20 pF	70 pF	ON:1,2,3
2	30 pF	250 pF	ON:2,3 OFF:1
3	50 pF	600 pF	ON:1,3 OFF:2
4	100 pF	1,200 pF	ON:3 OFF:1,2
5	150 pF	3,000 pF	ON:1,2 OFF:3
6	300 pF	7,000 pF	ON:2 OFF:1,3
7	500 pF	18,000 pF	ON:1 OFF:2,3
8	1,000 pF	36,000 pF	OFF:1,2,3

Range 1 is highly sensitive and is recommended only for short probes (approximately 500 mm or less) and low-permittivity media. Final range must be set on the actual probe/vessel assembly.

■ DISPLAY FIELD CALIBRATION — DISPLAY OPTION

The optional display uses the S key to move the cursor or navigate and the Z key to confirm. Menu wording may differ by firmware.

Step	Display calibration sequence
1	On the measurement display, press S and Z together to enter the calibration menu.
2	Move the probe or establish the maximum-level condition. At "Full calibration", press Z to store the deepest / maximum-level position.
3	Move the probe or establish the minimum-level condition. At "Zero calibration", press Z to store the shallowest / minimum-level position.
4	At "Display unit", press Z to select the required engineering unit.
5	If the unit is not mA, set the minimum and maximum displayed range values. If the unit is mA, these scale values may be ignored.
6	In a numeric range screen, press S to move the cursor. At the units digit, another S press returns to the calibration menu.
7	Press Z until SET is displayed, press S to change the selected digit, then press Z again to store and clear SET.
8	Select Return and press Z to return to the measurement display.

■ TEMPERATURE CAPABILITY

Temperature limits depend on variant and electrode construction. All applicable medium (tm), process-connection (tp) and ambient (ta) limits must be observed simultaneously.

Variant / electrode code	tm - medium	tp - process connection	ta - ambient
N - 10/20	-40 to +300°C	-40 to +85°C	-40 to +85°C
N - 11/12/22	-40 to +200°C	-40 to +85°C	-40 to +85°C
N - 30	-40 to +200°C	-40 to +85°C	-40 to +85°C
N - 31 with PR-31	-40 to +130°C	-40 to +85°C	-40 to +85°C
N - 31 with KV-31	-40 to +250°C	-40 to +85°C	-40 to +85°C
N - 32	-40 to +130°C	-40 to +85°C	-40 to +85°C
N - 40	-40 to +100°C	-40 to +85°C	-40 to +85°C
Xi - 10/20	-40 to +200°C	-40 to +75°C	-40 to +75°C
Xi - 11/12/22	-40 to +120°C	-40 to +75°C	-40 to +75°C
Xi - 30	-40 to +105°C	-40 to +75°C	-40 to +75°C
Xi - 31 with PR-31	-40 to +105°C	-40 to +75°C	-40 to +75°C
Xi - 31 with KV-31	-40 to +105°C	-40 to +75°C	-40 to +75°C
Xi - 32	-40 to +105°C	-40 to +75°C	-40 to +75°C
NT - 10/20	-40 to +300°C	-40 to +200°C	-40 to +85°C
NT - 11/12/22	-40 to +200°C	-40 to +200°C	-40 to +85°C
NT - 30	-40 to +250°C	-	-40 to +85°C
NT - 31 with PR-31	-40 to +130°C	-40 to +130°C	-40 to +85°C
NT - 31 with KV-31	-40 to +250°C	-40 to +130°C	-40 to +85°C
NT - 32	-40 to +130°C	-40 to +130°C	-40 to +85°C
XiT - 10/20	-40 to +200°C	-40 to +200°C	-40 to +75°C
XiT - 11/12/22	-40 to +120°C	-40 to +200°C	-40 to +75°C
XiT - 30	-40 to +250°C	-40 to +130°C	-40 to +75°C
XiT - 31 with PR-31	-40 to +130°C	-40 to +130°C	-40 to +75°C
XiT - 31 with KV-31	-40 to +250°C	-40 to +130°C	-40 to +75°C
XiT - 32	-40 to +130°C	-40 to +130°C	-40 to +75°C

■ PRESSURE CAPABILITY

Maximum operating pressure depends on variant, electrode and process-connection temperature tp.

Variant / electrode	≤30°C	≤85°C	≤130°C	≤160°C	≤200°C
N or Xi - 10/20	7 MPa	5 MPa	-	-	-
N or Xi - 11/12/22	4 MPa	2 MPa	-	-	-
N or Xi - 30	7 MPa	5 MPa	-	-	-
N or Xi - 32	1 MPa	0.5 MPa	-	-	-
N - 40	0.1 MPa	0.1 MPa	-	-	-
NT or XiT - 10/20	7 MPa	5 MPa	3 MPa	2 MPa	1 MPa
NT or XiT - 11/12/22	6 MPa	4 MPa	2 MPa	1.5 MPa	0.3 MPa
NT or XiT - 30	7 MPa	5 MPa	3 MPa	-	-
NT or XiT - 32	1 MPa	0.5 MPa	0.1 MPa	-	-

Ratings above are configuration limits and must be checked against the selected process connection and temperature.

Hazardous-Area Variants

Variant	Use / classification stated
N	Non-hazardous area
NT	High-temperature version; process connection up to 200°C where permitted by electrode configuration
Xi	Intrinsically safe version for combustible dust, gas or vapor; current output only; classification: II 1 GD T83°C Ex ia IIB T5 with suitable isolating repeater
XiT	Intrinsically safe high-temperature version; current output only; classification: II 1/2 GD T83°C Ex ia IIB T5 with suitable isolating repeater

Hazardous-area installation requires verification of current certification, entity parameters, barrier compatibility and local regulations. Do not specify from this datasheet alone.

■ RELATIVE PERMITTIVITY REFERENCE

Values below are indicative only and vary with composition, temperature, frequency, moisture and bulk density.

Material	ϵ_r	Material	ϵ_r
Acetone	19.5-21.4	Chloroform	4.81
Tetrachloroethane	8.1	Ice	3.1
Aminoplast	5-8	Liquid air	1.5
Ammonia	15-24	Liquid carbon dioxide	1.6
Aniline	6.9	Liquid chlorine	2.0
Dust	1.5-1.7	Liquid propane	1.6-1.9
Benzaldehyde	18.3	Marble	9.3-11.6
Benzene	2.28-2.3	Methanol	32.7-33.8
Impure benzene	2.3	Mica powder	5-8
Celluloid	3.5-6.2	Micanite	4.5-6
Cement	4.0	Milk powder	3.5-4
Dioxane	2.235	Chlorobenzene	4.0
Hard rubber	2.5-5	Nitrobenzene	35.7
Ethanol	24	o-Nitrotoluene	27.4
Ethyl acetate	6.0	Paper	1.6-2.6
Ethylene glycol	38.7	Paraffin	1.9-2.5
Vinyl chloride	10.5	Paraffin oil	1.9-2.5
Crystalline flint	4.5	Paraffin oil	2.2
Flour	2.5-3.0	Petroleum	2.0-2.2
Sodium chloride	6.0	Polyacetal	3.6-3.7
Freon R22	6.1	Polyamide	4.0-5.0
Fused quartz	3.7	Polydichlorostyrene	2.7
Gasoline / petroleum ether	2.0-2.2	PEEK	3.2
Glass	3.7-10	Polyetherimide	3.0
Acrylic glass	3-3.6	Polyethylene	2.16
Silica glass	16	Polyphenylene sulfide	3.3
Glass batch	3.5	PMMA	2.56
Glycerol	47	Polypropylene	2.0-2.2
Granules	3.0-5.0	Polystyrene	2.39
Hardened fabric	2-6	Polysulfone	3.0
Hexane	1.9	PTFE	2.0-2.1

■ RELATIVE PERMITTIVITY REFERENCE

Material	ϵ_r	Material	ϵ_r
Polyvinyl acetate	2.7	Rubber	2.0-6.0
PVC	2.51-3.1	Sand	3.0-5.0
PVDF	6.0-7.4	Silicone rubber	2.8-3.3
Ceramic	4.5-7	Amber	2.9
Pyridine	13.6	Sugar	3.0
Rapeseed oil	2.8	Sulfur	3.4-3.6
Acrylic resin	2.4-4.5	Toluene	2.3-2.38
Epoxy resin	2.5-8.0	Trichloroethylene	3.43
Melamine resin	4.7-10.2	Trolitul	2-2.6
Phenolic resin	4.0-12.0	Petroleum jelly	2.2-2.9
Polyester resin	2.8-8.1	Water	81
Styrene resin	2.3-3.4	Aqueous solution	50-80
Urea-formaldehyde resin	5.0-8.0	White beeswax	2.0-2.9
Wet wood	10-30	Dry wood	2-6

How to Use the Table

- ◆ Use relative permittivity only as an initial electrode/range-selection aid.
- ◆ Calibrate with the actual medium, vessel, probe position and expected moisture/bulk-density range.
- ◆ For mixtures or media not listed, obtain representative samples or application test data.

■ ORDERING INFORMATION

Complete model number example: **SX-LCRB-11350M10NRZ1000**

Power	
1	24 V DC
Output	
1	4-20 mA 2-wire
2	4-20 mA 4-wire
3	0-10 V 2-wire
4	0-10 V 4-wire
Media	
3	General media
4	Highly conductive media
Measurement Mode	
5	Level mode
6	Distance mode
Display	
0	Without
1	With display
Process Connection	
M	M36 × 2
G	G 1 (G 1½ for code 40)
C	Tri-Clamp
Electrode	
10	Bare stainless-steel rod
11	Fully PFA-coated stainless-steel rod
12	Fully FEP-coated stainless-steel rod
20	Bare stainless-steel rod with reference tube
22	FEP-coated rod with reference tube
30	Bare stainless-steel rope with weight
31	Bare stainless-steel rope with anchor
32	Fully coated rope with weight (FEP + PTFE)
40	Dual fully coated stainless-steel rods (FEP)
41	Dual bare stainless-steel electrodes
Variant	
N	Standard
Xi	Intrinsically safe
NT	High-temperature
XiT	Intrinsically safe, high-temperature
Mounting	
R	Integral
I	Remote

Explosion Option	
Z	Without
E	With Ex protection; availability depends on selected variant
Level Range	
1000	1,000 mm nominal probe length
2000	2,000 mm nominal probe length
5000	5,000 mm nominal probe length; other lengths require confirmation
Optional / Customized	
D	Customized information; specify in order remarks

Selection Notes

- ◆ Choose electrode construction from medium conductivity, dielectric constant, chemical compatibility, vessel geometry, temperature, pressure and installation length.
- ◆ For coated probes, confirm coating material compatibility and maximum allowable temperature.
- ◆ For hazardous-area or remote-mount versions, request a configuration review and current certification package.

Accessories Notes

- ◆ One seal is supplied; additional PTFE, aluminum or other seals may be available on request.
- ◆ One adjustment screwdriver is supplied per five-unit set in the package.
- ◆ One mating wiring connector is supplied.
- ◆ KV-31 welded anchor cylinder and PR-31 dust sleeve are separate installation accessories for code 31.