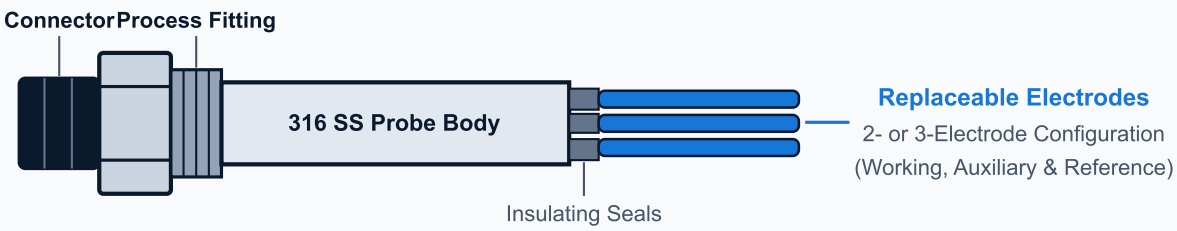
LPR Probe Selection Guide

Choose the Right Linear Polarization Resistance Probe for Your Monitoring Application

A practical guide to selecting a Metal Samples Linear Polarization Resistance (LPR) probe based on installation method, process access, and operating pressure. LPR monitoring is used in conductive environments to provide near real-time corrosion-rate information across two-electrode and three-electrode configurations for field and laboratory applications.



Typical LPR Probe Assembly (2- or 3-electrode configuration with replaceable alloy test electrodes)

1. Four-Step Probe Selection Workflow

1. **Where will the probe be used?** Field monitoring or laboratory testing.
2. **How is it installed?** Threaded, flanged, retractable, or retrievable.
3. **Must it be removed under pressure?** No process isolation, or shutdown/isolation acceptable.
4. **What is the operating pressure?** Confirm the probe and access-system rating.

> **Verification Note:** Product selection should always be verified against the actual process conditions, installation dimensions, and compatible instrumentation.

2. Field Probe Selection

Start with the installation arrangement. The overview below follows the main branches of the Metal Samples selection application.

Installation / Requirement	Series	Selection Notes
Threaded, fixed length Removal under pressure not required	**LP2000**	Fixed-length pipe-plug mounted probe. Selection application lists ratings up to **204 bar (3,000 psi)**. Process isolation or shutdown is required for installation/removal.
Threaded, adjustable insertion length Removal under pressure not required	**LP3000**	Adjustable-length pipe-plug mounted probe. Selection application lists ratings up to **102 bar (1,500 psi)**.
Retractable Removal under pressure required	**LP4000 / LP4300**	Retractable probe family for applications where the probe must be inserted or withdrawn without shutting down the process. Selection application lists ratings up to **138 bar (2,000 psi)**. **LP4000:** 2 electrodes; **LP4300:** 3 electrodes, CorrTran style.
Flanged mounting Removal under pressure not required	**LP6000 / LP6300**	Fixed-length, flange-mounted probes. **LP6000:** 2 electrodes; **LP6300:** 3 electrodes, CorrTran style. Confirm flange details and pressure rating for the specific configuration.
High-pressure access system Retrievable under pressure	**LP7000 / LP7210 / LP7300**	Retrievable probes for compatible high-pressure access systems. Selection application lists ratings up to **245 bar (3,600 psi)**. **LP7000:** 2 electrodes; **LP7210:** flush-mount, 3 electrodes; **LP7300:** 3 electrodes, CorrTran style.

2.1 Important Selection Points

- **Pressure rating:** The values above are selection-application branch limits, not a substitute for checking the rating of the complete installed assembly.
- **Removal under pressure:** Distinguish a retractable probe from a retrievable probe used with a dedicated access fitting system.
- **Electrode configuration:** Choose two- or three-electrode designs according to the monitoring system and measurement requirements.
- **Insertion length and mounting:** Verify pipe size, connection type, immersion depth, clearance, and flow conditions before ordering.

3. Laboratory Probes & Electrode Materials

For laboratory work, the selection application directs users to the Metal Samples laboratory probe range.

3.1 Laboratory Probe Option: TF0222 / TF0220 — PAIR™ Laboratory Probes

Designed for laboratory LPR testing. Confirm the required cell arrangement, electrode material, and compatibility with the measuring instrument when specifying the probe.

3.2 Electrodes and Materials

The electrode material should represent the material or corrosion behaviour being evaluated. Metal Samples lists a range of commonly used electrode alloys, with additional options available. Select the alloy, electrode geometry, and seal/configuration to suit the test environment. Availability can vary by probe model and construction.

Example Material	Typical Alloy Identification
Carbon steel	C1010 / UNS G10100
Stainless steel	304L / UNS S30403; 316L / UNS S31603
Copper alloy	CDA110 copper; CDA443 Admiralty brass
Aluminium	1100, 6061, and 7075 aluminium

4. Typical Information to Define Before Ordering

Process & Application	Probe & Installation
• Process medium and conductivity • Operating pressure and temperature • Expected corrosion environment • Field or laboratory use	• Probe series / model • Two- or three-electrode design • Electrode alloy • Connection and insertion length • Need for in-service retrieval

Need Help Selecting the Right LPR Probe?

Imotron can assist with selecting a suitable Metal Samples configuration for your application. Share your process conditions, preferred mounting arrangement, and monitoring requirements so the correct probe and accessories can be confirmed.

Technical note: This brochure is a condensed selection aid based on the Metal Samples online LPR Probe Selection Application and related product information. Model availability, ratings, materials, and options may change. Always consult the latest manufacturer datasheets and confirm the complete assembly rating before purchase or installation.