

VAN LONDON

Est. 1961



pHoenix Co.

"When Accuracy Matters"

Industrial Electrodes Brochure

pH/ORP

Chlorine

**Dissolved
Oxygen**

Conductivity

**Ion Selective
Electrodes**

Meters & Analyzers

Custom



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Van London-pHoenix Company (VL-PC) manufactures a wide variety of electrodes, sensors, assemblies and accessories for pH, Contacting Conductivity, Toroidal Conductivity, ORP, Dissolved Oxygen, Optical Dissolved Oxygen, Karl Fischer, Ion-Specific and Custom Designs. Direct Replacements for Laboratory, Titration, Biotech, Potentiostatic Chlorine and Industrial applications are available for all major brands. VL-PC is the authorized exclusive distributor in the USA for the Knick product line of pH Meters, Dissolved Oxygen Meters, Conductivity Meters, Portable Meters, In-Line Retractable, In-Line Fittings, the digital MemoSens Electrode, “ComFu®” - a digital wireless system between sensor and meter, and a fully automated clean and calibrate in place “UniCal®” system which is a perfect compliment to the VL-PC electrodes focusing on industrial markets offering Explosion Proof equipment satisfying up to Class 1 / Div 1 requirements.

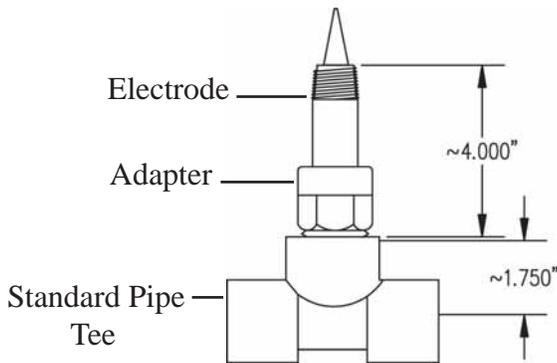
With a complete machine shop and glass blowing shop we are capable of producing sensors that are designed for maximum performance in the harshest environments; and a sizable inventory of sensors, analyzers, and meters are available to expedite orders. Van London-pHoenix Company has been in business since 1961 and has a long history of dedication to R&D to produce new measurements and designs to enable our business partners access to a superior product.

VL-PC’s goal has remained the same: to consistently produce a high quality product that exceeds each client’s unique needs in a timely fashion at a reasonable cost. It is our desire not only to be a “vendor” but a “partner” working closely with you to promote success!





V-1700 Series V-1000 Series V-1100 Series V-1400 Series Conductivity



Optional Guarded Twist-Lock™
Adapter

Twist-Lock™

pH, ORP, ISE, ISFET, and Conductivity

- **Low Cost Replacements**

Long-lasting, reliable, and low in cost for pH and ORP sensors. Twist-Lock™ housing design allows for an all-in-one electrode or sensor replacement to reduce inventory requirements.

- **Safe Operation**

A stop pin is installed in the adapters for positive electrode/sensor positioning; locking pins on the housing are visible through an opening 90° from the removal slots to assure correct installation.

- **Housing Features**

¼ turn is all that is required for installation. The housing is ribbed for easy handling.

- **O-ring Arrangement**

Dual external o-rings and an internal o-ring seal the electrode from any process leakage.

- **Quality “Built In”**

All parts meet strict, documented quality specifications, followed through each step of the manufacturing process.

- **Solid Polymer Reference™**

Cross Linked Polymer for extended life in hot, harsh applications.

- **GXV**

Low impedance, ruggedized membrane, fast response, and 0-14pH range.

- **Multiple Sensor Options available**

SPR is a trademark of Van London-Phoenix Co.

Ryton is a trademark of Phillips 66 Company.

Teflon and Viton are both trademarks of E. I. du Pont de Nemours & Co

Threaded Sensors

pH, ORP, ISE, Conductivity, and Oxygen



3/4" MPT
Stainless Steel



1/2" MPT
Kynar



Epoxy/Graphite
Conductivity



3/4" MPT
Ryton



3/4" MPT
Kynar



3/4" MPT Kynar
Detachable Preamp



1" MPT Kynar



1" MPT Kynar



3/4" MPT
Conductivity



PES/Graphite
Conductivity

These are a few of our threaded sensor designs for pH, ORP, ISE, Conductivity and Oxygen measurements. Standard materials of construction include CPVC, Kynar®, Ryton®, Epoxy and Viton®. Optional materials of construction include polypropylene, PEEK®, Stainless Steel, PES, Kalrez® and EPDM. Other options include a large selection of Temperature Compensators, Tuff-Tip®, Large Ceramic Junction (MagnaSens™), Solution Ground, Quick Disconnect Cable and a large selection of connectors. Standard process connections are 1/2", 3/4" and 1" MPT but BSP threads are available on request.



Hot Tap / Retractable

pH, ORP, ISE and Conductivity



MK7Z



MK7K



MKX



LiveTap™



LOCK-N-LOAD™

The Hot Tap assemblies are designed so that the sensor can be removed from a tank or live line without process flow interruption. Available measurements in this configuration are pH, ORP, ISE and Conductivity. The sensors are available with many options including Temperature Compensator selection, Solution ground and MagnaSens™ reference junction. The Lock-N-Load™ is an inexpensive design that isolates the sensor from the process without a ball valve. Standard materials of construction are Stainless Steel, Kynar®, Teflon® and Viton® but upon request, Hastalloy C and Kalrez® are available. The MKX is pneumatic and is supplied with flushing ports for cleaning or calibrating. Process connections are 1", 1¼" and 1½" MPT. Custom designs are available for longer insertion depths. Custom options include special wetted parts, special valves and flanges. Some assemblies are rated up to 150 PSI.

Direct Replacements

pH, ORP, ISE Conductivity, and Oxygen



This series of Van London-pHoenix Co. (VL-PC) sensors is designed to replace the **TBI/ABB/Barben Analytical “BAT” and other major manufacturer sensor assemblies.**

They are manufactured with Solid Polymer Reference (“SPR”), a unique cross-linked polymer formulation for:

- **Extended Life**
- **Designed for Harsh Environments**

Our new glass formula (“GXV”) yields

- **Fast Response**
- **0-14 pH**
- **Ruggedized Measuring Membrane**

Direct replacements are dimensionally matched to existing equipment so that expensive retrofit changes are not necessary. For standardization, simply remove the original element and replace with a Van London-pHoenix Co. equivalent.

Some more popular Direct Replacements Include:

- | | |
|---------------------------|-----------------------------------|
| • ABB/TBI | • Great Lakes Ins. (GLI) |
| • BAT (Barben) | • Sensorex |
| • E & H | • Rosemount |
| • Ingold / Mettler | • Foxboro |
| • YOKOGAWA | • Custom Designs |



ION Selective Sensors



The *NEW* Low Level model NAB1502 Sodium ISE is designed to monitor sodium levels in the **ppb** range where conventional sodium electrodes are inaccurate. The monitoring of sodium at this level is essential in many applications especially in power plants where sodium impurities in the ppb range cause stress corrosion cracking in high pressure steam turbines and stainless steel generators.

VL-PC currently offers the following Ion Selective Electrodes (ISE):

Ammonia (NH_3)
Ammonium (NH_4^+)
Bromide (Br^-)
Cadmium (Cd^{+2})
Calcium (Ca^{+2})
Carbon Dioxide (CO_2)
Chloride (Cl^-)
Copper (Cu^{+2})
Cyanide (CN^-)
Fluoride (F^-)
Fluoroborate (BF_4^-)
Iodide (I^-)
Lead (Pb^{+2})
Nitrate (NO_3^-)
Nitrogen Oxide (NO_x)
Perchlorate (ClO_4^-)
Potassium (K^+)
Silver/Sulfide ($\text{Ag}^+/\text{S}^{-2}$)
Sodium (Na^+)
Surfactant
Water Hardness

Currently we manufacture sensors for numerous specific ion measurements. These can be supplied with various options including Mono or Combination, Sealed or Refillable, Rebuildable Sensing Tips, Flushable Reference Junctions and Specialized Reference Electrodes to minimize interference. Direct Replacements are available for all major brands.

Economy/Epoxy Body Sensors:

pH, ORP, Conductivity, and Oxygen

Economical electrodes manufactured with chemically resistant epoxy which makes it excellent for use with portable meters or bench top meters in harsh applications. Durability, Accuracy and Economy are the key factors with these sensors. Options include Tuff-Tip™, Triode™ (with Temperature Compensation), Platinum and Gold ORP, Detachable Lead Wires, Custom Reference Solutions, Reduced Body Diameter and Numerous Connectors to mate to all commercially available meters. Available measurements are pH, ORP and Antimony.

pH



ORP



Triode™



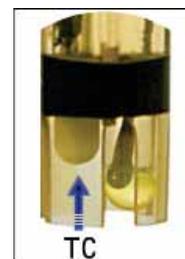
Tuff-Tip™



Conductivity



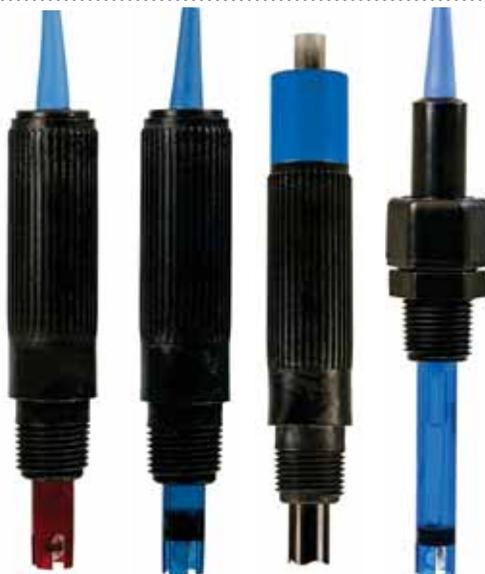
Dissolved Oxygen



pH



ORP



Swimming Pool Sensors

pH and Redox measurements in Swimming Pool applications have always proven to be difficult - at VL-PC, we have identified the need for reasonably priced, high quality pH and Redox electrodes for the Swimming Pool market. These electrodes require infrequent calibrations, typically once per month in their first year of use. This is made possible by incorporating a strong salt, stable, low flow reference system.

An additional benefit of this reference system is that the electrode can tolerate a great deal of abuse and it can be stored dry for a period of up to one year with very little reduction in its performance - simply connect and rely on it.

S8 Style Electrode Series

pH, ORP, Conductivity, ISE, ISFET and Oxygen

MEMO SENS



S8
Conductivity

S8 Connector

Variopol
Connector

F Connector

ISFET/with S8 Connector

Knick Digital Sensors

The S8 electrode series is for pH, ORP, ISFET, Conductivity and Dissolved Oxygen measurement in the Hot Taps and Submersible fittings on the following pages. These sensors are for use in all industrial and sterilizable applications. There are a wide range of cable connectors including Variopol, S8, F, the digital Memosens and ISFET. Standard electrode lengths are 120mm and 225mm, but other lengths are available including custom designs. Other options include specialty Electrolyte solutions, gelled and polymerized electrolyte, annular ceramic junctions, ceramic wick junctions, open aperture junctions, numerous temperature compensators and solution grounds.

In-Line Fittings & Assemblies for S8 Style Electrodes

pH, ORP, ISFET, Conductivity, ISE and Oxygen

A wide range of fittings are available for mounting the in-line S8 style of electrodes including MPT and BSP threaded housings, Ingold Socket, Flow Thru, Flanged, Socket Weld, Dairy Pipe and Tri-Clover®. Standard materials of construction are Kynar™, Stainless Steel and Viton™ but also available are CPVC, PVC, PEEK®, Hastalloy C, Kalrez, EPDM and Silicone. Suitable for aggressive chemical processes as well as processes with hygienic requirements. pH sensors with polymeric electrolyte or with refillable, pressurizable electrolyte can be used. pH, ORP, ISE, ISFET, conductivity, or Oxygen measurement in chemical processes, in the pharmaceutical or food industry and in biotechnology. A wide range of options are available for custom assemblies, please contact factory.



ARI 106 Inline Fitting



ARF 101



ARF F200/202



ARF 220



ARF 201



ARF 210



ARF 215



Threaded
Housings



ARF 240

Hot Taps for S8 Style Electrodes



WA130



WA131



WA131M



WA150



WA125



pHastTrac® 2000



These Hot Tap assemblies are only for use with S8 style electrodes and are designed so that the sensor can be removed without process flow interruption. Standard materials of construction include Stainless Steel, PEEK®, Kynar®, Viton®, EPDM and Kalrez®.

Assemblies can be either pneumatic or manual retraction. Most assemblies are supplied with flushing ports for cleaning and/or calibration. Process connections are Ingold 25mm port, 1½" MPT, Flanged, Dairy Pipe and Tri-Clover®.

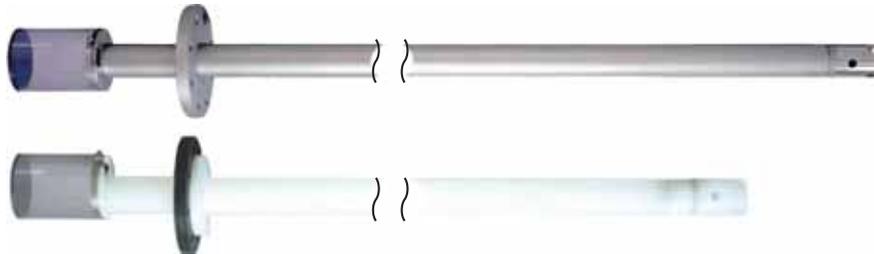


Submersible Sensors

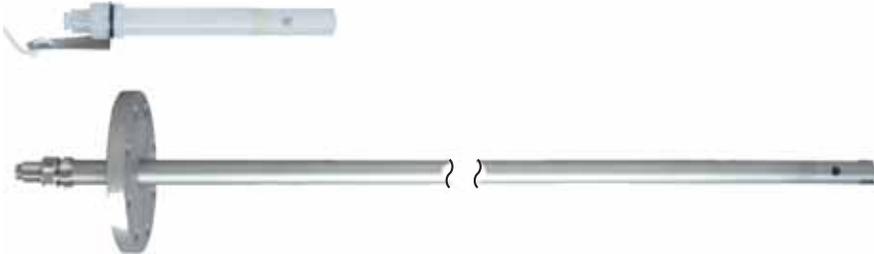
pH, ORP, ISE Conductivity, and Oxygen



MK1A



ARD 220



ARD 230

The Submersible Sensors are designed for continuously monitoring pH, ORP, ISE, Conductivity and Dissolved Oxygen in Tank, Vessels or Canals where liquid levels tend to vary. They can be installed via a compression tank mount fitting or flange. The MK1A is standard with a removable guard for ease of cleaning the measuring membrane. The ARD 220 is equipped with a reference solution reservoir for use with a pressurized electrolyte system. Materials at construction include CPVC, Kynar®, PEEK®, Stainless Steel, Viton® and Kalrez®. Standard probe length is 4', but lengths are available upon request.

Knick Meters

pH, ORP, Conductivity and Oxygen



Protos®



Stratos® Pro



Stratos® Eco

The Knick products are manufactured in Germany to the highest standards possible. As a result of the quality manufacturing Knick has an unprecedented 3 year warranty on all meters as opposed to the industry standard of only 1 year.

The Protos® is the top of the line 4-wire meter with dual inputs, modular design for various measurements and outputs, MemoSens® digital sensor compatible, for use with UniCal® 9000 for completely automated cleaning and calibration, compatible with ComFu® 300 for wireless communications between the sensor and meter, Hart communication, Factory Mutual rated to Class1 Div1 for Hazardous areas, VariPower® system allows for 20-265 VAC/VDC power supply and elaborate sensor diagnostics.

The Stratos® Pro is available as 2 or 4 wire and has an optional dual input, unique color coded backlight that easily indicates sensor/meter status, Factory Mutual rated to Class1 Div1 for Hazardous areas, VariPower® system allows for 20-265 VAC/VDC power supply and sensor diagnostics.

The Stratos® ECO is a general purpose 4-wire single input, Factory Mutual rated to Class1 Div2, VariPower® system allows for 20-265 VAC/VDC.



The Portamess® is a portable meter suitable for field or lab use in Class1 Div1 areas. It also has an optional data logger for automatic recording of values over long periods. Standard features include Temperature Compensation, 1,2 or 3 point calibration, IP66 enclosure and a 3 year warranty.

**Portable Meters for
Field and Laboratory**
Class1 Division1

Knick MemoSens® & Accessories

pH, ORP, Conductivity and Oxygen



ComFu® 300

The ComFu® 300 provides wireless communication between the sensor and Protos® meter for difficult installations. The ComFu® 300 transmits on a frequency of 2.4 GHz providing upto 400m transmission. The communication modules are in Stainless Steel enclosures with IP65 protection.



MemoSens® digital connector

The inductive MemoSens® technology allows for digital communications between the sensor and meter without metallic contacts. This means that without metal contacts the inductive connection is not broken or shorted with the presence of moisture, in fact the sensor connection can be made under water. Furthermore, the MemoSens® digital technology recalls the values of the last calibration eliminating the need for field calibrations.



MemoSens® digital connector has reliable pH-measurement completely unaffected by ambient conditions.



UniCal® 9000

The UniCal® 9000 is an electro-pneumatic controller for fully automated pH measurement, cleaning and calibrating. The system is designed to clean and calibrate the sensor without interruption to the process flow or to communication to the control room. The Enclosure is rated IP65 (Nema 4X) and Class 1 Division 1 for explosive areas.

Potentiostatic Chlorine



- Applications:
 - Drinking water
 - Bottling industry
- Ranges: 0/2 PPM and 0/20 PPM autoranging
- Isolated output:
 - 0/20 mA or 4/20 mA selectable
- Autoclean relay
 - Auto + manual/manual action
 - Holding function for input and outputs



High Purity / Ionic Strength



This is a simple and inexpensive High Purity measuring system commonly used in power plants, Reverse Osmosis Systems, Semiconductor manufacturing and Pharmaceutical Industries in a continuous stream. The sensor incorporates a low impedance glass measuring membrane, super saturated reference solution, Temperature Compensator and Platinum band solution ground.

Optical Dissolved Oxygen



Specifications

Measuring Method: Optical
Scale: 0-20 ppm
Power Supply: 9/36 VDC
Isolated Output: 4/20 mA current loop
Max. Pressure: 10 Bar at 25°C
Length: 165 mm total
Diameter: 60mm
Body: PVC
Installation: Submersible
Protection: IP68

This unique submersible probe has been designed to measure dissolved oxygen using fluorescent technology.

The measuring system includes:

- Digital input for calibration and configuration; and
- Nozzle for the autoclean by external air

The probe can be connected to any controller which provides power to the probe.

The most common applications of this probe include: water quality monitoring, municipal and water treatment and aquaculture.

Toroidal Conductivity



Specifications

Range: 0/10 mS (0/100-0/1000 mS on request)
Power Supply: 24 VDC
Installation: In-line or Submersible
Length: 191mm (Over All) 86mm (Insertion)
Thread: 1 1/2" MNPT
Body: CPVC or Kynar
Max. Temperature: 104°F (40°C)
Max. Pressure: 3 Bar at 25°C

This Conductivity monitoring system consists of a loop powered transmitter and an electrodeless conductivity sensor in a single package. Temperature compensation is accomplished with a RTD PT100 built-in to sensor. Application includes water treatment, cooling tower and water monitoring.



Sensors for use in HF Solutions

Due to the chemical attack that Hydrofluoric Acid has on glass, it is recommended to use a thick glass membrane or to design a sensor without glass. The Antimony sensor is good for HF, but does require a special meter and has limited accuracy and a small pH range for operation. The polymer membrane pH sensor has an output that is similar to that of a glass pH electrode. Therefore no special equipment is necessary.



Polymer Membrane pH



Antimony pH

Sensor Options

VL-PC was founded based on the ability to manufacture custom electrodes. Below are some of our newer sensor options.



Tuff-Tip®

The Tuff-Tip® is a unique design that provides a low profile guard for the pH glass without protruding prongs that accumulate process material or debris. The Tuff-Tip® also incorporates a Large Ceramic Junction (MagnaSens™) that reduces the chance of process material fouling the porous junction. In the correct installation, the Tuff-Tip® also aids in keeping the pH membrane and reference junction clear from coating.

TempH™

Our *NEW* TempH sensor is specially designed for temperature extremes from -20 to 135 degrees Celsius. Most sensors exposed to these extremes will shatter but the TempH sensor is capable of both extreme high and extreme low temperatures without cracking the glass or boiling the internal fill solution. This is perfect solution to prevent temperature related probe failure during usage, shipment, autoclave or storage. Our unique designs and formulations allow for a significantly increased temperature operating range and R&D in underway to push these ranges even further. The TempH™ electrode series can be manufactured in a wide variety of styles suitable for laboratory, industrial or biotech applications.

Z-Gel

Z-Gel is our newest cross linked polymerized electrolyte for improving stability and reliability of the reference. The Z-Gel allows for long probe life and lower maintenance, thus reducing overall cost. The Z-Gel also allows VL-PC to incorporate new designs for existing products, such as the Open Aperture Junction.

GXV

Introducing our new pH glass formula with unparalleled performance. This new pH glass formula, "GXV", can replace all other formulas, streamlining inventories and eliminating wasted time trying to select the best electrode for the job. The GXV formulation is perfect in low ionic strength solutions as well as high pH applications and is specially formulated to have lightning fast response time with superior accuracy and repeatability. The sample pH is registered in less than 10 seconds, the result is correct to within 0.02 pH units, and the pH value is reproducible over the entire pH range from 0 to 14 pH.

Custom Designs, R&D and Private Label

- Custom designs are available for customers with special needs.
- In house R&D services are available for new measurements and specialty projects.
- We currently have customers world wide who use our private label and custom packaging option.

Meters and Simulators

- We have a full range of meters available for all needs including pocket meters, portable meters and bench top meters. (Certain meters have classified ratings)
- Our pH/mV simulator is compact and convenient for use when testing equipment.

Knick



- Available for use in hazardous areas (Class 1 Div 1)
- Water-proof enclosure IP66
- Calimatic® automatically recognizes the buffer; automatic one-key calibration
- 8 buffer sets to choose from
- Simultaneous pH/mV and temperature display
- Automatic unit test during power-on
- 2000 operating hours with just 3 AA batteries
- Automatic switch-off
- EMC design
- Available with data logger in the 913x Series

Accessories

Accessories are available to complete the product offering and make us your one stop shop for your electro-chemical sensor needs.

- NIST-Traceable Buffers
- Solutions
- Wire adapters
- External temperature compensators



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Made in the USA



Industrial Brochure

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