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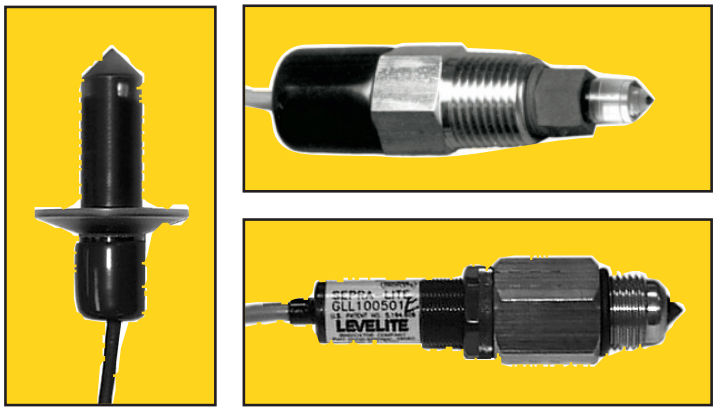
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optic level sensing



LEVELITE

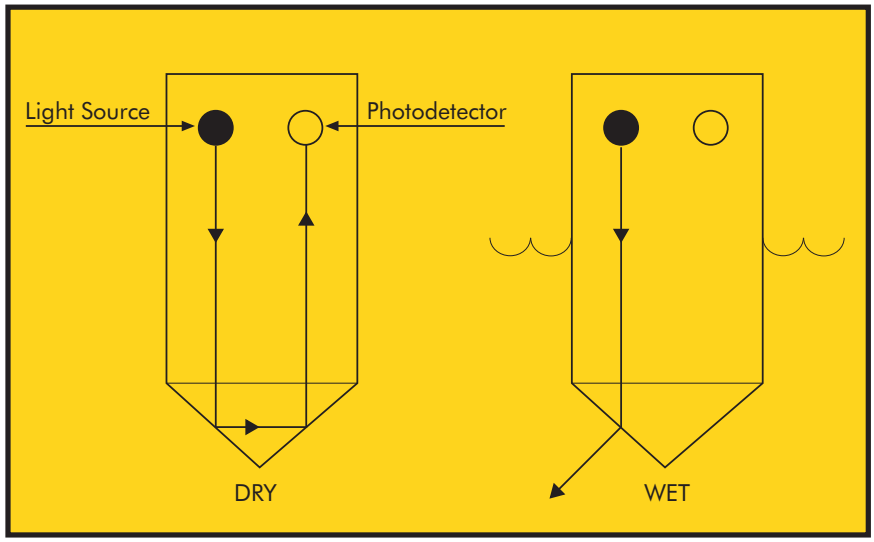
LEVELITE

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How LEVELITE Works

All LEVELITE optic probes operate by sensing the difference between liquid and air (or other gas) using an infrared light source and detector.



An optic LED produces infrared light that is directed down the probe. When dry, the light is reflected through the probe's conical tip and is sensed by the photodetector. When the probe tip is wet, the light at the photodetector produces a change in the output.

LEVELITE offers self-contained level switches as well as electro optic and fiber optic level systems. Electro optic probes are designed for general purpose areas and fiber optic probes for hazardous areas. These probes are used in conjunction with a universal controller, which can be used for level alarms or pump control. The universal controller has adjustable time delay and field selectable "fail-safe" settings.

Sepra-Lite® Integral Optic Level Switches

Sepra-Lite® self-contained level switches with removable electronics

Sepra-Lite® operates by sensing the difference between liquid and air (or other gas) using an infrared light source and detector. When the sensor is wetted, the transmitted light is lost into the liquid. When dry, the transmitted light is reflected by the prism back to the photo detector. This approach does not rely on any electrical interaction with the liquid. It has no moving parts and provides two main advantages: a wide variety of applications and the ability to separate the electronics for safety and troubleshooting.

Separability of the electronics module and sensor body is a key advantage. Since the sensor body is a passive part of the system, there is no need to shut down a machine or process when troubleshooting the Sepra-Lite® assembly. To verify operation, simply remove the electronics module and look into the "window". If it is dark, liquid is present; if it is light, sensor is dry. By comparing this with the unit's output or LED indicator, operation is easily and safely verified. Sepra-Lite® eliminates the need to open tanks or remove sensors to troubleshoot or repair.

When applying Sepra-Lite®, specific gravity, conductivity, vibration, and tight mounting constraints are not a problem. Dark, foggy, or colored liquids, such as: oils (light and heavy), glycols, detergents, heavy syrups, or caustics perform well. Sepra-Lite® is available in Brass and Teflon® (PFA). Two different mounting types provide a leak proof and/or high-pressure seal. To make using it even easier, the small overall size and minimal insertion are perfect where "in-pipe" use or "tight quarters" are encountered.

General Specifications

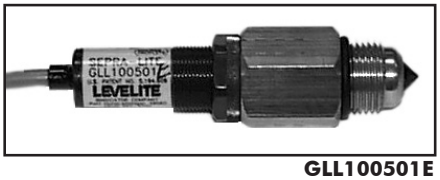
- No external controller required
- Synchronous refractive detection system
- 10.8 to 26.4 VDC operating voltage (30mA consumption)
- NPN open collector output, includes selectable wet or dry sinking
- 100 mA output current (maximum) and adjustable sensitivity
- Easy to see red LED alarm indicator
- EMI, overcurrent and reverse polarity protected.
- NEMA 4X (IP 66) electronics module.

A Popular Industry Choice for...

- Detecting liquid/gas phase change in air conditioners
- Oil levels in gear boxes
- Detecting dangerous leaks in laboratory and analytical machines
- Monitoring leakage in dual containment systems
- Precision control of chemical dispensing equipment

Brass Sepra-Lite® with Quartz Window

Ideal for high pressure applications. The brass body withstands some of the most abusive applications.



GLL100501E

- Use as sight glass for level verification when electronics are removed
- Adjustable sensitivity
- 600 psig (42kg/cm²) at -40° F to 185° F (-40° C to 85° C)
- PVC jacketed cable, 4 conductor (user extendable)

Description	Part Number
½" NPT, 15' (4.6m) cable	GLL100501A
¾" UNF-16 with Viton® O-ring seal, 15' (4.6m) cable	GLL100501C
¾" NPT with Neoprene O-ring seal, 15' (4.6m) cable	GLL100501E
¾" NPT with Neoprene O-ring seal, 30' (9.1m) cable	GLL100501G

Sepra-Lite® Integral Optic Level Switches (continued)

GLL100504A ▼ PFA Teflon Sepra-Lite®

- Compatible with all acids, bases and solvents
- All PFA wetted parts
- Adjustable sensitivity
- 100 psig (7kg/cm²) at -40° F to 185° F (-40° C to 85° C)
- ½" NPT mounting
- 15' (4.6m) PVC jacketed cable, 4 conductor (user extendable)



GLL100504A

GLL100501F ▼ Polysulfone Sepra-Lite®

Food grade polysulfone housing

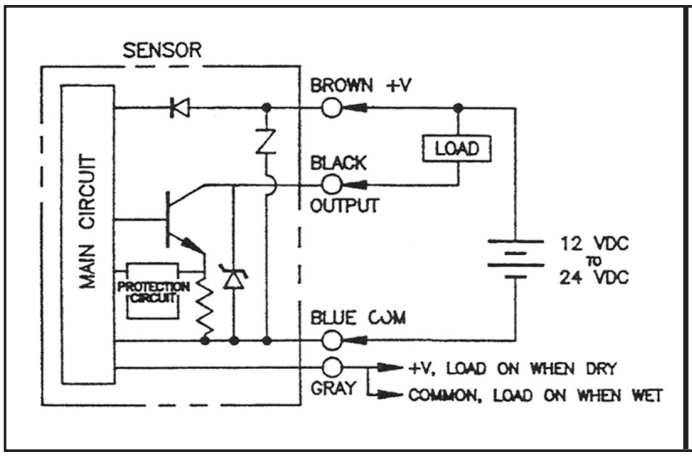
- Mounts on top or side of vessel. ¾" NPT rear connection is ideal for pipe extension or conduit
- Adjustable sensitivity
- 100 psig (7kg/cm²) at -40° F to 185° F (-40° C to 85° C)
- ½" NPT mounting
- 15' (4.6m) PVC jacketed cable, 4 conductor (user extendable)



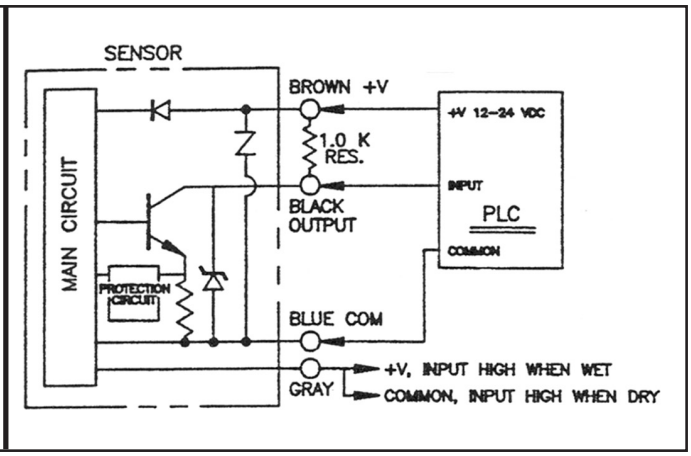
GLL100501F

Typical Wiring

Open Collector Output Hook-Up



PLC Connections Hook-Up



Note: Common wire (gray) must be connected to common (-) or V+(+) supply of power supply.

Electro Optic Level Systems

ELECTRO OPTIC CONTROLLERS

use with LEVELITE electro optic probes

General Specifications

- AC: 120 or 240V (50/60 Hz), 1.4 VA
- DC: 12 or 24V (-25 to +15%), 1.8 W
- Accepts electro optic probes or customer supplied float switches
- 10 A, SPDT relays (1/3 hp @ 120 VAC)
- 1-60 second time delay adjustment
- High or low level failsafe adjustment
- LED alarm status indicator
- Polycarbonate enclosure

Electro Optic Level Switch Controller, One Channel

LEVELITE's perfect choice for simple "one switch" applications.

- Protect pumps and warn of "dry" running
- Prevent overflow or warn of material shortage
- Time based filling and emptying

Description	Part Number
120VAC	GLL101S1N
240VAC	GLL101S2N
12VDC	GLL101S3N
24VDC	GLL101S4N



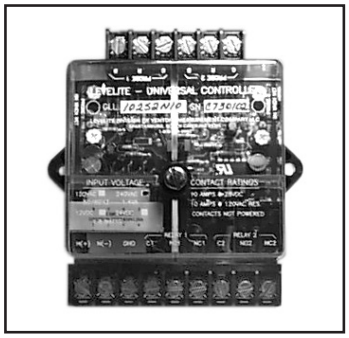
GLL101S1N

Electro Optic Level Switch and Pump Controller, Two Channel

Increase flexibility with our Two Channel Controller Systems

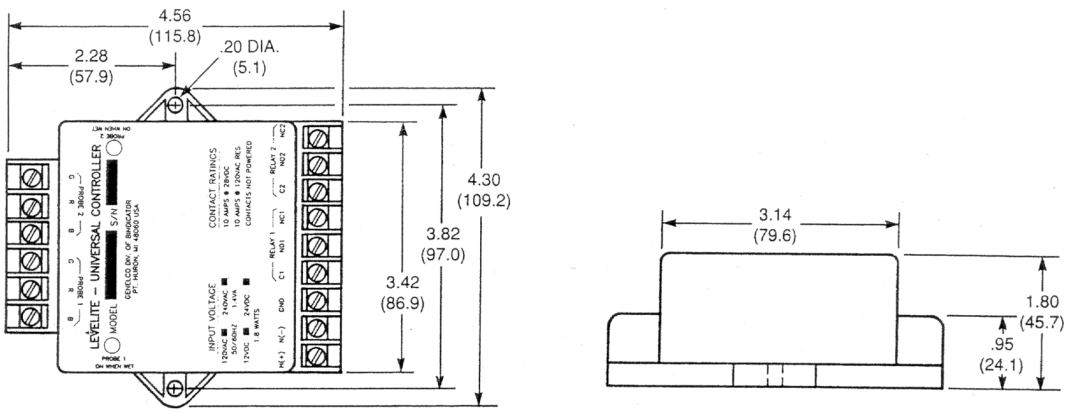
- Provides dual alarms
- Automatically directs pump up or pump down operation

Description	Part Number
120VAC	GLL102S1N
240VAC	GLL102S2N
12VDC	GLL102S3N
24VDC	GLL102S4N



GLL102S2N

Dimensional Drawing



ELECTRO OPTIC PROBES

LEVELITE electro optic controllers

Detect leaks, protect pumps and prevent spills with LEVELITE's miniature Electro Optic Level Sensors for OEM systems.

General Specifications

- Operates with all electro optic controllers
- Repeatability: 0.5 mm
- Includes 25' (7.62m) PVC jacketed cable (user extendable)
- 1/2" NPT process and conduit connections

A Popular Industry Choice for...

- Ultrapure water and water treatment
- Semiconductor and Pharmaceutical manufacturing
- Laboratory testing and chemical dispensing systems
- Leak detection in electronic enclosures, dual containment piping, and diked areas
- Beverages, chemicals, acids, caustics, water, epoxys, lubricants, glycols, vegetable oils, adhesives and solvents

Versatility is the key to LEVELITE's Electro Optic Level Sensors. Ideal for controlling any transparent or translucent liquid.

- Compact sensors fit anywhere
- PFA Teflon® probe for all high purity and corrosive liquids
- Detects liquids regardless of conductivity, color or specific gravity
- Eliminates pump cavitation when installed in advance of the pump
- Automatic pump control and high or low alarms

GLL110000 ▼ Polysulfone Electro Optic Probe

This probe is preferred for most oil, water and mildly corrosive applications.

- LEVELITE'S lowest priced probe
- Operating Temperature: -20° F to 200° F (-29° C to 94° C)
- Max Pressure: 100 psig (7kg/cm^2)

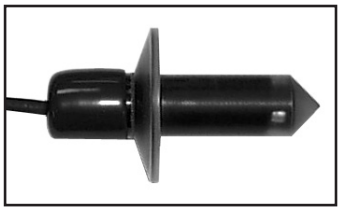


GLL110000

GLL110118 ▼ Polysulfone Electro Optic Sanitary Probe

Ideal for applications in the food and pharmaceutical industries.

- 1½" Tri-Clover type flange for CIP/other sanitary applications
- ½" NPT conduit connection
- Operating Temperature: -20° F to 200° F (-29° C to 94° C)
- Max Pressure: 100 psig (7kg/cm^2)

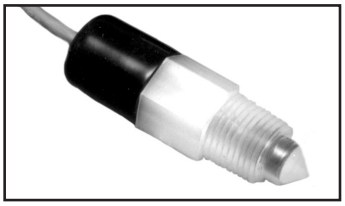


GLL110118

GLL110010 ▼ PFA Teflon® Electro Optic Probe

Our best sensor for any corrosive or high purity liquid. Widely used in manufacturing of semiconductors, high purity liquids, ultrasonic cleaning and photography.

- Widely used in corrosive liquids
- Made from non-stick Teflon® to prevent coating
- Operating Temperature: -20° F to 200° F (-29° C to 94° C)
- Max Pressure: 100 psig (7kg/cm^2)



GLL110010

LEVELITE's quartz tip electro optic probes are designed for use with quartz tips (see below). The quartz tips are excellent for high pressure or high temperature applications, and also provide excellent corrosion resistance to many chemicals and solvents. The Teflon® light guide on the probe tip concentrates the light coming through the probe for greater signal strength.

Order probe and quartz tip separately.

GLL110020 ▼ Polypropylene Quartz Tip Electro Optic Probe

- Excellent for high level applications
- Quartz sensing tips built to your length specification. Order separately
- Operating Temperature: -20° F to 50° F (29° C to 65° C)
- Max Pressure: 100 psig (7kg/cm²)



GLL110020
shown with Quartz tip

GLL110021 ▼ 316 SS Quartz Tip Electro Optic Probe

- Excellent for high level applications
- Quartz tip length built for your application. Order separately.
- Operating Temperature: -20° F to 212° F (-29° C to 100° C)
- Max Pressure: 500 psig (35 kg/cm²)



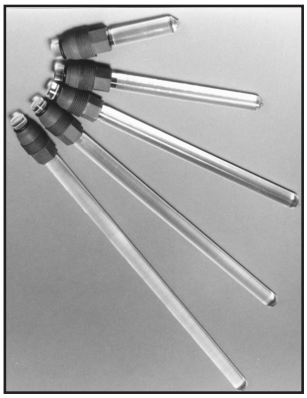
GLL110021
shown with Quartz tip

Quartz Tips

- 5/8" to 10" Insertion Length
- Rulon® Seal
- Teflon® Light Guide
- Viton® O-Ring

GLL numbers increase by 10 with every inch (25.4mm). No half sizes.

Description	Part Number
5/8" (15.88mm)	GLL111000
1" (25.4mm)	GLL111010
2" (50.8mm)	GLL111020
3" (76.2mm)	GLL111030
4" (101.6mm)	GLL111040
5" (127mm)	GLL111050
6" (152.4mm)	GLL111060
7" (177.8mm)	GLL111070
8" (203.2mm)	GLL111080
9" (228.6mm)	GLL111090
10" (254mm)	GLL111100



Quartz Tips

Fiber Optic Level Systems

Detect leaks, protect pumps and prevent spills in hazardous areas with LEVELITE's miniature Fiber Optic Level Sensors for OEM systems.

FIBER OPTIC CONTROLLER

use with LEVELITE fiber optic probes

General Specifications

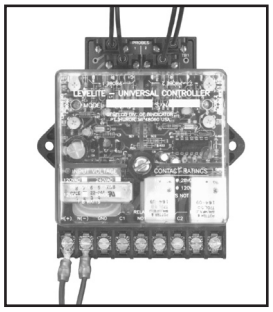
- AC: 120 or 240V (50/60 Hz), 1.4 VA
- DC: 12 or 24V (-25% to +15%), 1.8 W
- Accepts fiber optic probes
- 10 A, SPDT relays (1/3 hp @ 120 VAC)
- 1-60 second time delay adjustment
- High or low level failsafe adjustment
- LED alarm status indicator
- Polycarbonate enclosure
- For flammable materials, fiber optic controllers eliminate all voltage at the sensor

Fiber Optic Level Switch and Pump Controller, 2 Channel

Choose fiber optics to maintain maximum safety in hazardous areas

- Provides dual alarms
- Automatic pump up or pump down operation
- Accepts fiber optic probe input

Description	Part Number
120VAC	GLL102F1N
240VAC	GLL102F2N
12VDC	GLL102F3N
24VDC	GLL102F4N



GLL102F2N

FIBER OPTIC PROBES

use with LEVELITE fiber optic controller

General Specifications

- Operate with fiber optic controllers
- 1/2" NPT process and conduit connections
- Repeatability: 0.5 mm
- Includes acrylic fiber optic cable with connectors (length cannot be field modified)

A Popular Industry Choice for...

- Hazardous areas
- Ultrapure water and water treatment
- Semiconductor and pharmaceutical manufacturing
- Laboratory testing and chemical dispensing systems
- Leak detection in electronic enclosures, dual containment piping, and diked areas
- Beverages, chemicals, acids, caustics, water, epoxys, lubricants, glycols, vegetable oils, adhesives and solvents

Versatility is the key to LEVELITE's Fiber Optic Level Sensors. Ideal for controlling any transparent or translucent liquid.

- Compact sensors fit anywhere
- PFA Teflon® probe for all high purity and corrosive liquids
- Detects liquids regardless of conductivity, color or specific gravity
- Eliminates pump cavitation when installed upstream of the pump
- Automatic pump control and high or low alarms
- For flammable materials fiber optics eliminate all voltage at the sensor

FIBER OPTIC PROBES (cont'd)

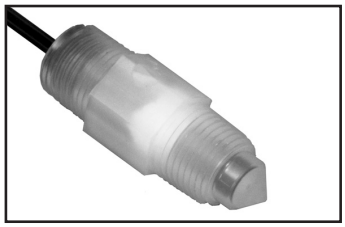
use with LEVELITE fiber optic controller

PFA Teflon® Fiber Optic Probe

Prevent accidental ignition in hazardous areas because no energy is used at the probe.

- Use with the Two Channel controller, only
- Operating Temperature: -20° F to 200° F (-29 to 94° C)
- Max Pressure: 100 psig (7kg/cm²)

Description	Part Number
6 Ft (1.82m) Fiber Cable	GLL110121
10 Ft (3m) Fiber Cable	GLL110122
15 Ft (4.5m) Fiber Cable	GLL110123
25 Ft (7.6m) Fiber Cable	GLL110124



GLL110121

LEVELITE's quartz tip fiber optic probes (designed for use with quartz tips) prevent accidental ignition in hazardous areas because no energy is used at the probe. The quartz tips are excellent for high pressure or high temperature applications, and also provide excellent corrosion resistance to many chemicals and solvents. The Teflon® light guide on the probe tip concentrates the light coming through the probe for greater signal strength. Order probe and quartz tip separately.

Quartz Tip Polypropylene Fiber Optic Probe

- Excellent for High Level
- ½" NPT Process Connection
- Operating Temperature: -20° F to 150° F (-29° C to 65° C)
- Max Pressure: 100 psig (7kg/cm²)

Description	Part Number
6 Ft (1.82m) Fiber Cable	GLL110125
10 Ft (3m) Fiber Cable	GLL110126
15 Ft (4.5m) Fiber Cable	GLL110127
25 Ft (7.6m) Fiber Cable	GLL110128

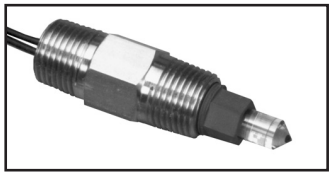


GLL110126

Quartz Tip 316 SS Fiber Optic Probe

- Excellent for High Level
- Operating Temperature: -20° F to 212° F (-29° C to 100° C)
- Max Pressure: 500 psig (35 kg/cm²)

Description	Part Number
6 Ft (1.82m) Fiber Cable	GLL110129
10 Ft (3m) Fiber Cable	GLL110130
15 Ft (4.5m) Fiber Cable	GLL110131
25 Ft (7.6m) Fiber Cable	GLL110132



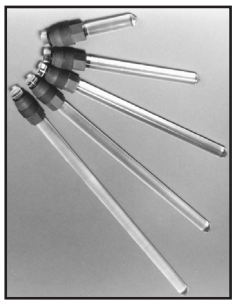
GLL110129
shown with quartz tip

Quartz Tips

- ⅝" to 10" Insertion Length
- Rulon® Seal
- Teflon® Light Guide
- Viton® O-Ring

GLL numbers increase by 10 with every inch (25.4mm). No half sizes.

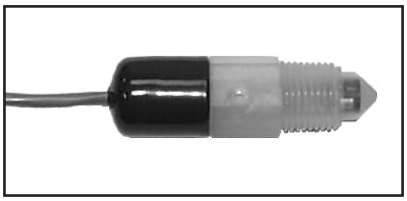
Description	Part Number
⅝" (15.88mm)	GLL111000
1" (25.4mm)	GLL111010
...	
10" (254.0mm)	GLL111100



Quartz Tips

INTEGRAL PFA TEFLON® CONTROLLER PROBE

Both probe models contain all of the necessary electronics internally, allowing them to be used without a separate controller. By combining circuit board electronics with photo detector sensing abilities, this probe can perform control or output functions. Signal processing takes place inside the probe, and an output change indicates and alarms when the probe tip is wet.



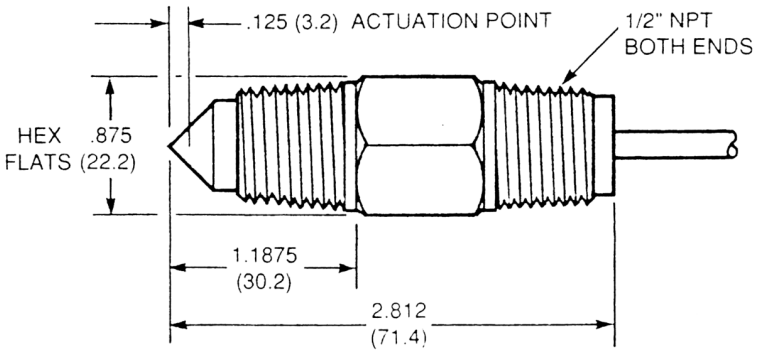
GLL100250

- Point Level Sensor, Leak Detector, Pump Protector
- Interfaces With Computer/PLC
- Self Contained Stand-alone Sensor
- Surface Mount Electronics
- For Corrosives and High Purity Liquids

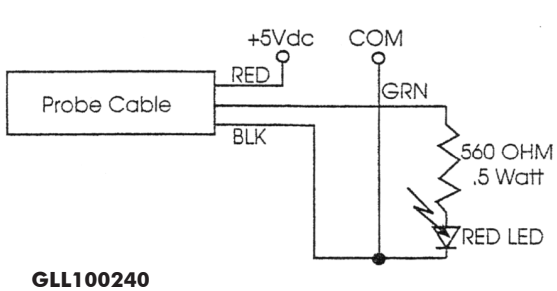
Description	Part Number
5 VDC	GLL100240
12-32 VDC	GLL100250

- GLL100240/5VDC, 20 mA maximum - sinking (output low when wet) and sourcing (output high when wet)
- GLL100250/12-32 VDC, 50 mA maximum - sourcing (output high when wet)
- User extendable to 1000 feet (300m) using Belden 8443, 3 conductor, 22 gauge or equivalent
- Operating Temperature: -20° F to 175° F (-29° C to 80° C)
- Max Pressure: 100 PSI (7 kg/cm^2)

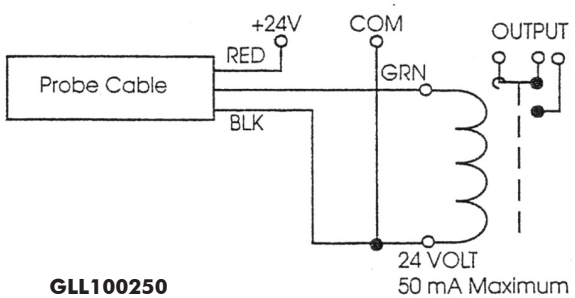
Dimensions inch (mm)



Wiring Diagram



GLL100240



GLL100250

Capacitance Proximity Switch

LEVELITE's Capacitance Proximity Switch is both economical and versatile.

For polyethylene, polypropylene or fiberglass tanks, LEVELITE's Proximity Switch is an inexpensive solution for sensing level without cutting through the tank wall. The secret is the sensor's ability to "see" through plastics. Features include: Eliminates tank emptying for installation, "Weld Fittings" for securing to plastic tanks, Optional "Well" for metal tank installation.

In addition to tank level, the Capacitance Proximity Switch will...

- Sense leaks in dual containment pipes through the pipe walls
- Control bottle filling - switches can see through glass or plastic
- Sense liquid level in site glasses

A Popular Industry Choice for...

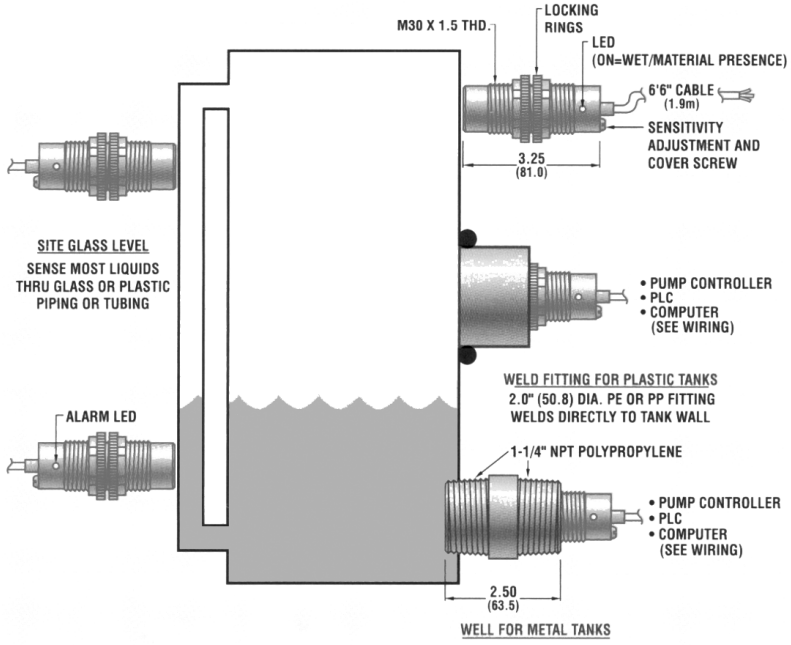
- Plating Company process or bulk chemical levels
- Industrial Wastewater Treatment waste neutralization chemicals
- Pure Water Systems and Semiconductor Fabricators

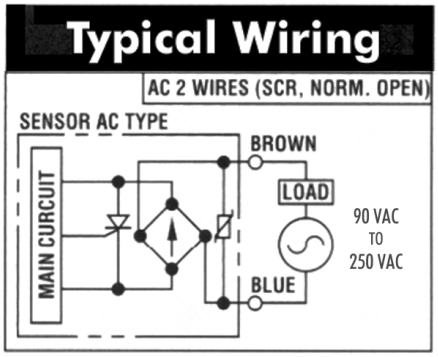
GAL100100 ▼ Capacitance Proximity Switch

- Nema 4X (IP66) PBT body
- 90-250 VAC, 2.5mA max leakage
- Normally open output, 200mA max load
- Surge protected
- For heavier loads, add the relay assembly



GAL100100





Capacitance Proximity Switch (continued)

Weld Fitting

Provides a threaded mounting for plastic tanks.



GAL110101

- Suitable for Polyethylene or Polypropylene tanks
- 2" (50.8mm) diameter weld area
- 30mm internal threads

Description	Part Number
Polypropylene	GAL110101
Polyethylene	GAL110102

GAL110100 ▼ Polypropylene Well Fitting

Provides a thread for mounting switch and isolates the switch from tank contents.



GAL110100

- For mounting switch in metal tank
- 1 ¼" NPT Polypropylene Well
- 30mm internal thread

GAL110103 ▼ Relay Assembly

Use with Capacitance Proximity Switch for dry contact/relay output.



GAL110103

- DPDT Relay and Socket
- 10 Amp, 120VAC

Dual Float Controller

GLL100000 ▼ Dual Float Controller

The Dual Float Controller has been designed especially for use with customer supplied floats. It can perform single or dual channel pump control and is a very economical way to monitor your system.

- Low cost pump control
- 120VAC or 240VAC operation
- Compact design

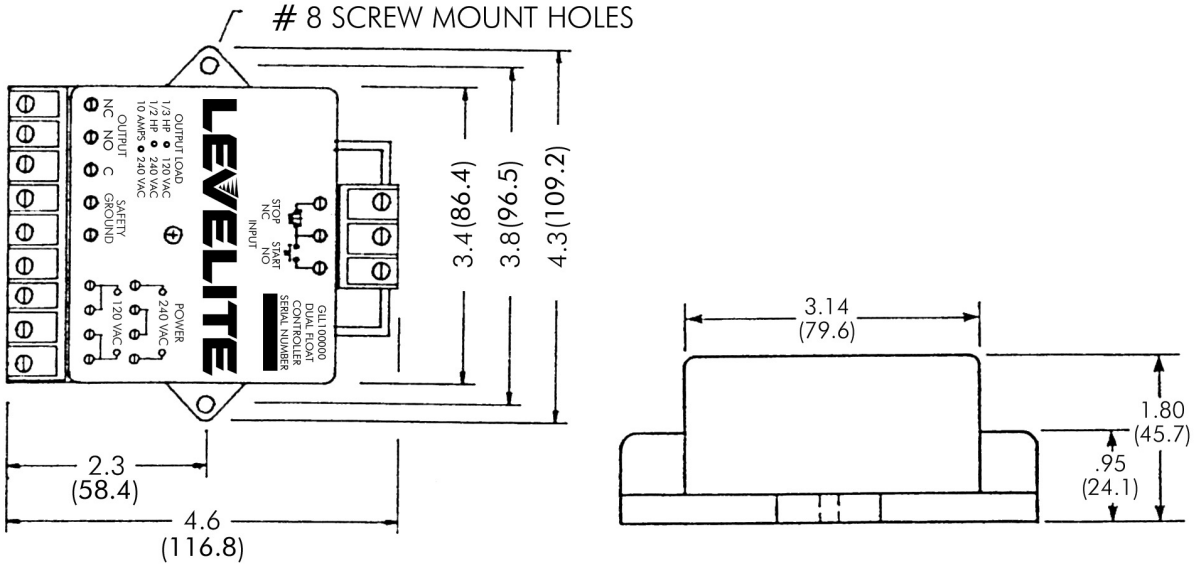


GLL100000

General Specifications

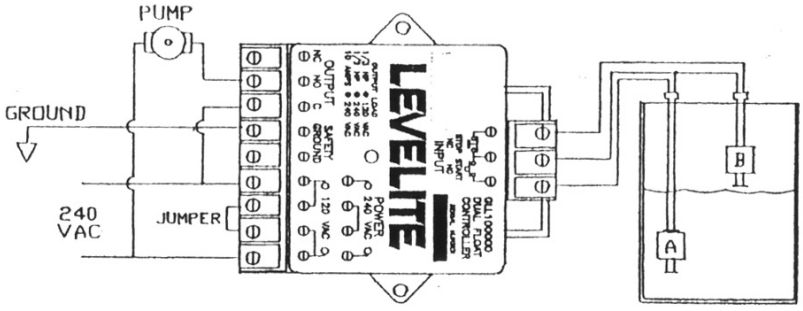
Power: 120VAC or 240VAC, (50/60)Hz, 1.8Watts
Control Elements: 1 or 2 reed switches or floats (customer supplied)
Sense Voltage: 5VDC
Sense Current: 6mA
Output Relay: SPDT, 10Amps at 240VAC, 10Amps at 30VDC, 1/3HP at 120VAC, 1/2HP at 240VAC
Operating Temperature: -20° F to 150° F (-28° C to 65° C)
Electrical Connection: Screw terminal block
Dimensions: 4.6" x 4.3" x 1.8" (16.8mm x 109.2mm x 45.7mm)

Dimensions inch (mm)



Dual Float Controller (continued)

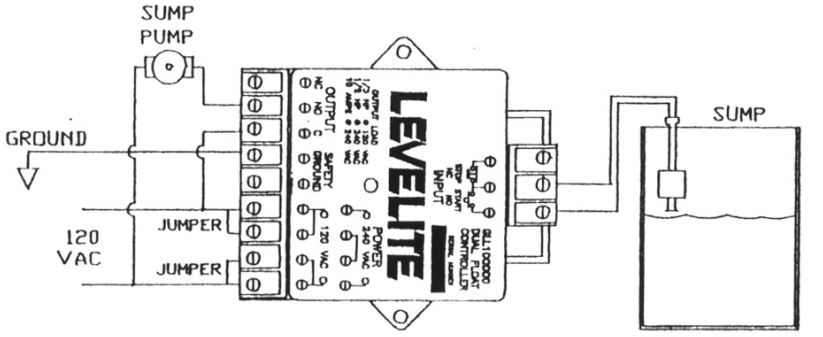
Wiring Diagram



EXAMPLE OF AUTOMATIC FILL WIRING.
WHEN LEVEL DROPS BELOW 'A' PUMP TURNS ON.
WHEN LEVEL RISES ABOVE 'B' PUMP TURNS OFF.
THE TOP TERMINAL (NC) WOULD DRIVE THE PUMP IN AN AUTOMATIC EMPTY SYSTEM.
NOTE ONE JUMPER SHOWN FOR 240 VAC OPERATION.

BOTH SWITCHES CLOSE
WHEN DRY.

LOW VOLTAGE CONTROLLER WITH LARGE DIFFERENTIAL



EXAMPLE OF SUMP-PUMP WIRING
OUTPUT IS ACTIVE WHILE SWITCH IS WET.
NOTE TWO JUMPERS SHOWN FOR 120 VAC OPERATION.

SWITCH CLOSES
WHEN WET

LOW VOLTAGE SINGLE POINT CONTROLLER

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