



## PRODUCT FEATURES

- Sensing of organic liquid (hydrocarbons and solvents) or water.
- Vapor and gases are ignored
- Remote monitoring capability with an RS-232 interface and relays
- UL Listed with Class 1, Division 1, Group C & D sensor circuits optional
- NEMA 4X Enclosure
- Up to 64 probes and 16 programmable alarm relays available

**LiquidWatch®** monitoring units have been engineered to meet a broad range of customer needs. The system can be configured with up to 64 probes and 16 programmable alarm relays. The modular design allows for meeting current needs while allowing for future expansion of the system.

**LiquidWatch** employs a two line, 20 character backlit LCD with a membrane keypad for operator interface. The probe circuits are supervised and provide alarms for probe active, short and break conditions. The system can be programmed for a probe activation to operate one of 16 optional

relays for remote alarm indication or operation of a shut-down procedure.

**LiquidWatch** monitoring units are equipped with normally energized 10 A, 250 VAC, SPDT relays: one common alarm relay and up to 16 optional programmable relays (in modules of four). The alarm console can be located up to 10,000 ft (3000 m) from the probes. The probe modules (eight probes per module) can be mounted remotely to reduce wiring costs.

**LiquidWatch** can monitor a variety of liquids with standard PermaAlert

probes. The PHLR probe is a unique probe for detecting common hydrocarbon liquid fuels. The inexpensive sensor elements can be cleaned and reused or easily replaced. The probe ignores hydrocarbon vapors to eliminate false alarms.

The PWS water probe detects water and all conductive liquids. There are also several float switches available in different configurations.

LiquidWatch monitoring units can monitor any other dry contact switch (float switch, thermostat, high level switch, etc.) using the LiquidWatch Probe Adapter.



Model	Part	Description
LW64	8027570	LiquidWatch Monitoring Unit
LW64-IS	8027571	LiquidWatch Intrinsically Safe - UL Listed
RPM-8	8027636	LiquidWatch Probe Module
ORM-4	8027637	LiquidWatch Relay Module
PA-10	8027638	LiquidWatch Probe Adapter to Interface with Non-Std Probes
PHLR-LW	8027890	LiquidWatch Hydrocarbon Probe Assembly
PFS-LW	8027902	LiquidWatch Float Probe Assembly
PSTV-LW	8027903	LiquidWatch 2" Tank Well Float Probe Assembly
PWS-LW	8027904	LiquidWatch Water Probe Assembly
PTHL-LW	8027906	LiquidWatch Tank Overfill Probe Assembly

Contact PermaAlert for special probe requirements.

# SPECIFICATIONS

## PART 1 • SYSTEM

### 1.1

The discreet point monitoring system (D.P.M.S.) shall consist of a monitoring unit, probe module, [relay module] and probes. The D.P.M.S. shall be capable of detecting liquids in contact with the sensor probe connected to the monitoring panel. It shall not detect vapors or gases.

### 1.2

When liquid is detected, an audible alarm shall sound and LCD readout of the probe activation shall be visible on the front display.

### 1.3

The system supplier shall have at least ten years experience in the manufacturing of leak detection systems.

## PART 2 • COMPONENTS

### 2.1

The standard sensors shall be probes. The hydrocarbon probe shall reset after exposure to volatile hydrocarbon liquids when the liquid evaporates. The probe shall be resettable after exposure to non-volatile fuels by flushing the sensor elements in a common hydrocarbon solvent or replacing the elements. The probe shall be designed for easy disassembly and cleaning. Lead wires shall be shielded, #22 AWG conductor, with color-coded insulation.

### 2.2

The use of other probes such as float switches, ground water monitoring or other devices shall use a dry contact to indicate an alarm condition. Float switch probes shall be resettable after fluids are removed and shall use material of construction suitable for contact with liquids to be sensed.

### 2.3

The monitoring panel shall be modular in design and accept up to 64 probes and 16 programmable alarm relays.

The LCD shall provide indication of the system's status. When a probe alarms, the type of alarm (active, short or break) and the probe number shall be indicated. Using the membrane keypad the operator shall be able to program the system and review the history archive. An RS-232 interface port shall be available for use in remote monitoring of the unit using ASCII commands. The enclosure shall be NEMA 4X.

## PART 3 • SAFETY

### 3.1

The unit must be UL Listed and provide connections for intrinsically safe sensor circuits for use in Class 1, Division 1, Groups C&D hazardous locations (where required).

### DESCRIPTION:

- Unit Dimensions: 11.31" H x 9.31" W x 5.43" D  
(287 mm x 236 mm x 138 mm)
- Power: 120/240 VAC 50/60 Hz, 8 VA
- Unit Weight: 7 lb (3.2 kg)
- Unit Operating Temperature: 0°F to 120°F  
(-18°C to 50°C)

### ALARM OUTPUTS:

- AUDIBLE ALARM
- RED LED OPTICAL ALARM
- ACTIVATION OF 10 A OUTPUT RELAYS

Typical PHLR Response Times

Liquid*	Response Time (@ 70°F)
1, 1, 1, Trichlorethane	<1 minute
Acetone	
MEK	
Xylene	
Naptha	
Gasoline	
Diesel fuel	<5 minutes**
Kerosene	
Jet fuel	
Crude oil	
Alcohols	not detected

\* Long exposure to some aggressive solvents like acetone or xylene may soften the epoxy sealing the probe, requiring probe replacement.

\*\* Response time at room temperature. Response times will be longer for lower temperatures.

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