

Echotel 910 is an integral mounted ultrasonic tip sensitive level switch with integrated DPDT relay. The Echotel 910 is ideally suited for pump protection (also for vacuum), overflow prevention, high or low level alarm in clean liquid applications with or without foam.

#### FEATURES

- \* Does not require any calibration.
- \* Dual electrical entries and various housings are standard available.
- \* A built-in averaging circuit ensures no false alarms due to most effervescence or turbulences.
- \* Actuation is determined by the length of the transducer and is available in lengths between 30 mm (1.20") and 2540 mm (100").
- \* All materials exposed to process in 316/316L SST (1.4401/1.4404).
- \* Field selectable high/low level failsafe.

#### APPLICATIONS

- LIQUIDS: Any clean liquids.
- VESSELS: Any mounting position.
- PROCESS CONDITIONS: Unaffected by
  - shifting dielectric, density, or PH
  - presence of foam, turbulence, visible vapors
  - fast drain/fill rates
  - transducer coating and air bubbles
  - vacuum conditions.

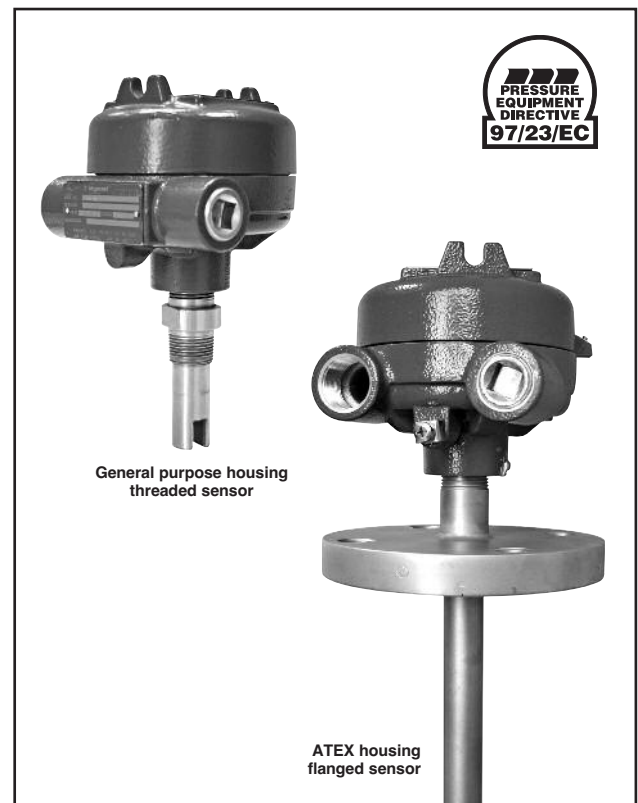
#### AGENCY APPROVALS

Agency	Approvals
ATEX	II 1/2 G EEx d IIC T6 / EEx e II T6, explosion proof
FM/CSA <sup>®</sup>	Non incensive and explosion proof
GOST/ GOSGORTECHNADZOR <sup>®</sup>	Russian Authorisation Standards

<sup>®</sup> Consult factory for proper partnumbers

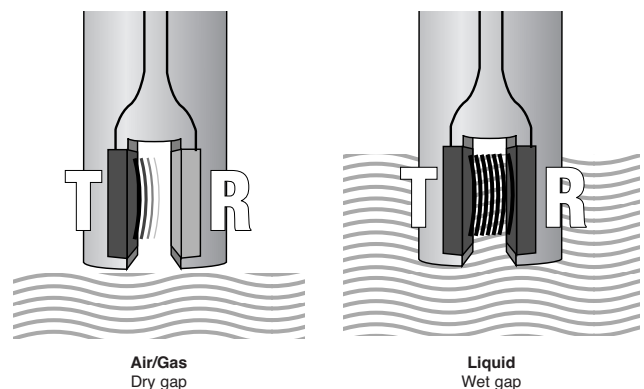
**NOTE:** For applications where self-checking is required, consult factory.

#### Rugged and cost effective

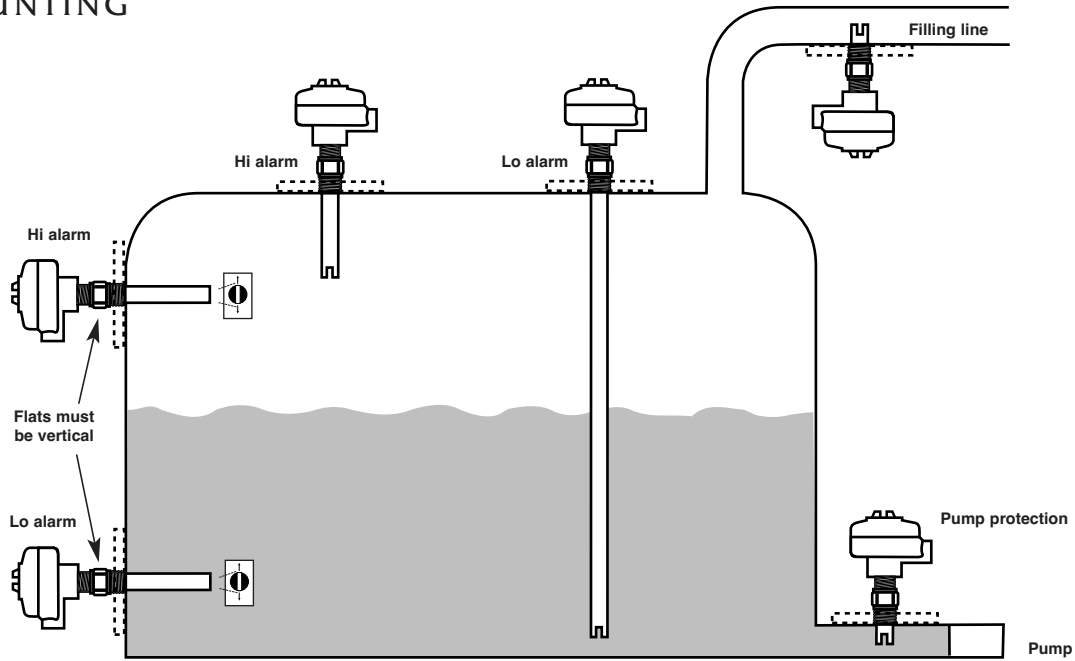


#### PRINCIPLE OF OPERATION

The Echotel 910 operates on a two crystal "transmit-receive" principle. The signal is converted into ultrasonic energy and transmitted across the sensing gap toward the receiver crystal. When there is air in the gap, the high frequency ultrasonic energy will not be received. When there is liquid in the gap, the ultrasonic energy will propagate across the gap and actuate the relay.



## MOUNTING



## ELECTRICAL SPECIFICATIONS

Description		Specification
Line Voltage ( $\pm 10\%$ )		240/120 V AC, 50-60 Hz – 24 V DC
Power Consumption		2.5 VA Nominal
Electronics Temperature		-40°C to +70°C (-40°F to +160°F)
Process Pressure/Temperature		55 bar at -40°C to +120°C (800 PSIG at -40°F to +250°F)
Response Time		0.5 s. typical
Repeatability		2 mm (0.078")
Output Relay	Goldflash relay	DPDT, 8.0 A resistive
	Hermetically sealed relay	DPDT, 5.0 A resistive
Housing		IP 65, anti-corrosive painted, cast aluminium
Sensor material		316/316 L (1.4401/1.4404)
Failsafe		Field selectable high or low level alarm
Electromagnetic compatibility		Meets CE requirements (EN 61000-6-4 and EN 61000-6-2)
Approvals		ATEX II 1/2 G EEx d IIC T6 / EEx e II T6 FM/CSA Non incandive and XP

## EXPEDITE SHIP PLAN (ESP)

Several Echotel 910 devices are available for quick shipment, within max. 3 weeks after factory receipt of purchase order, through the Expedite Ship Plan (ESP).

Models covered by ESP service are conveniently colour coded in the selection data charts.

To take advantage of ESP, simply match the colour coded model number codes (standard dimensions apply).

ESP service may not apply to orders of ten units or more. Contact your local representative for lead times on larger volume orders, as well as other products and options.

## SELECTION DATA

### Optional transducer mounting flanges

Raised face mounting flanges are available in the sizes and materials shown below.

Thread on mounting flanges can only be used in combination with 3/4" process connection transducer.

Specify the part number as an additional line item when placing an order. Consult factory (C/F) for additional flange sizes and materials such as Hastelloy C, Monel, etc...

ANSI Flange		Part Number			
Size	Rating	316/316L	Hastelloy C	304 SS	Carbon Steel
1 1/2"	150 lbs	04-5867-001	04-5867-031	04-5867-011	04-5867-021
2"		04-5867-002	04-5867-032	04-5867-012	04-5867-022
3"		04-5867-003	04-5867-033	04-5867-013	04-5867-023
4"		04-5867-004	04-5867-034	04-5867-014	04-5867-024
6"		04-5867-005	04-5867-035	04-5867-015	04-5867-025
1 1/2"	300 lbs	04-5867-006	04-5867-036	04-5867-016	04-5867-026
2"		04-5867-007	04-5867-037	04-5867-017	04-5867-027
3"		04-5867-008	04-5867-038	04-5867-018	04-5867-028
4"		04-5867-009	04-5867-039	04-5867-019	04-5867-029
6"		04-5867-010	04-5867-040	04-5867-020	04-5867-030
1 1/2"	600 lbs	04-5867-045	C/F	C/F	04-5867-046

# SELECTION DATA

## A complete measuring system consists of:

1. One order code for ECHOTEL® series 910 electronics and transducer
2. Optional: Order code for raised face mounting flanges, consult factory for other sizes or materials

### BASIC MODEL NUMBER

9 1 0	Echotel 910, ultrasonic level switch with relay
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### APPROVALS/ CABLE ENTRY / HOUSING MATERIALS

A	Standard –3/4" NPT	dual cable entry, anti corrosive coated aluminium, non-hazardous
V	ATEX – 3/4" NPT	dual cable entry, anti-corrosive coated aluminium, explosion proof
W	ATEX – M 20 x 1.5	dual cable entry, anti corrosive coated aluminium, explosion proof
5	ATEX – 3/4" NPT	single cable entry, stainless steel housing, explosion proof

### PROCESS CONNECTION

A	Threaded 3/4" NPT connection
2	Threaded 1" NPT connection
9	Threaded G1 (1" BSP) connection
3	Sanitary connection - 1 1/2" (compatible with Tri-Clover Tri-Clamp® fittings)
4	Sanitary connection - 2" (compatible with Tri-Clover Tri-Clamp® fittings)
5	Sanitary connection - Din 11851 DN 25
6	Sanitary connection - Din 11851 DN 32
7	Sanitary connection - Din 11851 DN 40
8	Sanitary connection - Din 11851 DN 50
1	Ansi flange raised flange - 1" 150 lbs
C	Ansi flange raised flange - 1 1/2" 150 lbs
D	Ansi flange raised flange - 2" 150 lbs
E	Ansi flange raised flange - 1" 300 lbs
F	Ansi flange raised flange - 1 1/2" 300 lbs
G	Ansi flange raised flange - 2" 300 lbs
H	Ansi flange raised flange - 1" 600 lbs
J	Ansi flange raised flange - 2" 600 lbs
K	EN/DIN flange EN 1092-1 Type A - DN 25/PN 16
L	EN/DIN flange EN 1092-1 Type A - DN 40/PN 16
M	EN/DIN flange EN 1092-1 Type A - DN 50/PN 16
N	EN/DIN flange EN 1092-1 Type A - DN 25/PN 25
P	EN/DIN flange EN 1092-1 Type A - DN 40/PN 25
Q	EN/DIN flange EN 1092-1 Type A - DN 50/PN 25
R	EN/DIN flange EN 1092-1 Type A - DN 25/PN 40
S	EN/DIN flange EN 1092-1 Type A - DN 40/PN 40
T	EN/DIN flange EN 1092-1 Type A - DN 50/PN 40
U	EN/DIN flange EN 1092-1 Type B2 - DN 25/PN 63
V	EN/DIN flange EN 1092-1 Type B2 - DN 40/PN 63
W	EN/DIN flange EN 1092-1 Type B2 - DN 50/PN 63
X	EN/DIN flange EN 1092-1 Type B2 - DN 25/PN 100
Y	EN/DIN flange EN 1092-1 Type B2 - DN 40/PN 100
Z	EN/DIN flange EN 1092-1 Type B2 - DN 50/PN 100

### INPUT POWER / RELAY OUTPUT

1	240 V AC/8 A DPDT goldflash relay	J	240 V AC/5 A DPDT herm. sealed relay
2	24 V DC/8 A DPDT goldflash relay	K	24 V DC/5 A DPDT herm. sealed relay
0	120 V AC/8 A DPDT goldflash relay	H	120 V AC/5 A DPDT herm. sealed relay

### TRANSDUCER SPECIFICATION PER CM (0.39") INCREMENTS

0 0 3	30 mm ( 1.2") - minimum insertion length
0 0 5	50 mm ( 2.0") - min length for 1" BSP and flanged process connection
2 5 4	2540 mm (100.0") - maximum length

**Note:** Transducer lengths are measured in accordance with process connection style.  
 – Consult dimensional drawings on page 4.

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**complete order code for Echotel 910 alarm switch**

