Honeywell Enraf

Installation, operation & service manual

AlarmScout 961/962 line powered

UNPACKING

Unpack the instrument carefully. Make sure all components have been removed from the foam protection. Inspect all components for damage. Report any concealed damage to the carrier within 24 hours. Check the contents of the carton/crates against the packing slip and report any discrepancies to Honeywell Enraf. Check the nameplate model number to be sure it agrees with the packing slip and purchase order. Check and record the serial number for future reference when ordering parts.

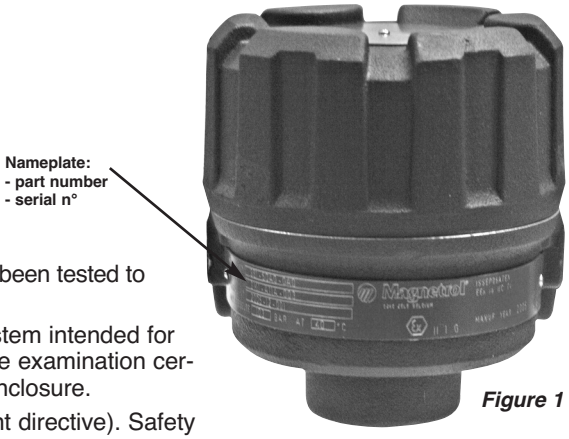


Figure 1

CE 0038 0344

These units are in compliance with:

1. The EMC directive 2004/108/EC. The units have been tested to EN 61326: 1997 + A1 + A2.
2. Directive 94/9/EC for equipment or protective system intended for use in potentially explosive atmospheres. EC-type examination certificate number ISSeP06ATEX008 - flameproof enclosure.
3. The PED Directive 97/23/EC (pressure equipment directive). Safety accessories per category IV module H1.

MOUNTING

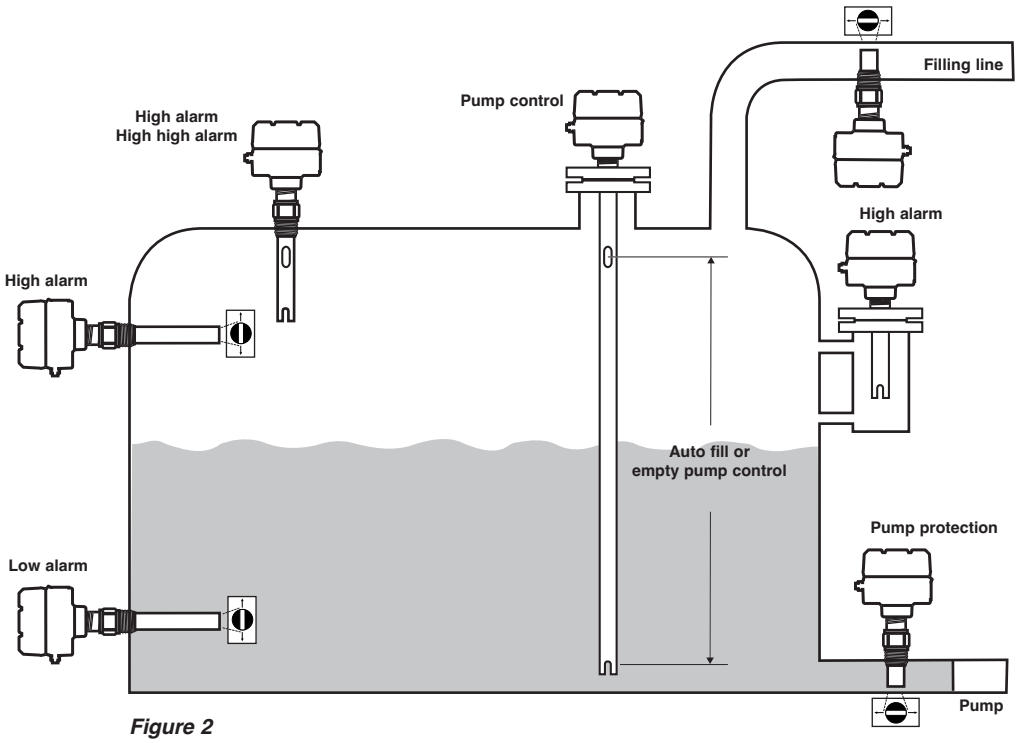


Figure 2

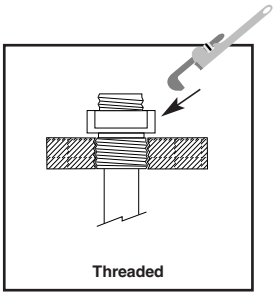


Figure 3

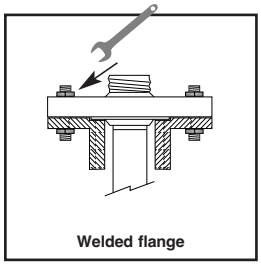


Figure 4

Warning: Bring the instrument on the same potential as the tank potential prior to the installation.

WIRING WITH CABLES

Model 961: single gap

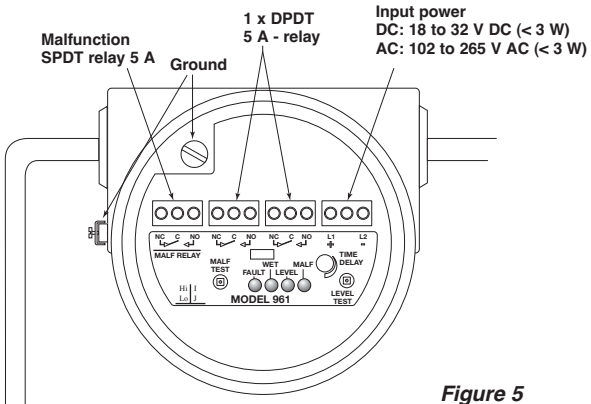


Figure 5

Model 962: dual gap

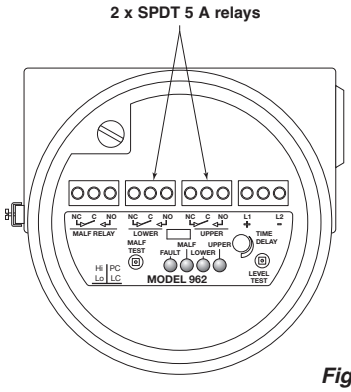
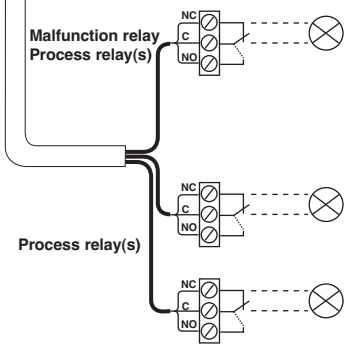


Figure 6



Important: Connect the unit to the ground for avoiding earth potential drifts. Use the green internal grounding screw

WIRING WITH CONDUITS

Caution: Observe all applicable electrical codes and proper wiring procedures

1. Make sure the power source is turned off.
2. Unscrew and remove housing cover.
3. Pull power supply and relay wires through the conduit connection.
4. Connect power leads to proper terminals for AC power (102 to 265 V AC) or for DC power (18 – 32 V DC)
   a. AC Power – Connect “hot” wire to terminal marked L1 and the “neutral” wire to the terminal marked L2. The green head screw should be used for grounding.
   b. DC Power – Connect wires to terminals (+) and (-) on the terminal block. The green head screw should be used for grounding.
5. Connect desired relay wiring (if applicable).
6. Prevent moisture seepage into housing by installing an approved seal drain fitting in the conduit run leading to the unit.
7. Wiring is complete. Replace housing cover.

Caution: In hazardous areas, do not power the unit until the conduit is sealed and enclosure cover is screwed down securely.

USER INTERFACE

Model 961: single gap

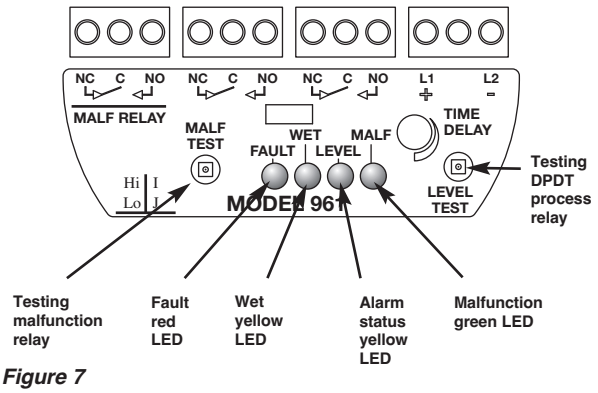


Figure 7

Model 962: dual gap

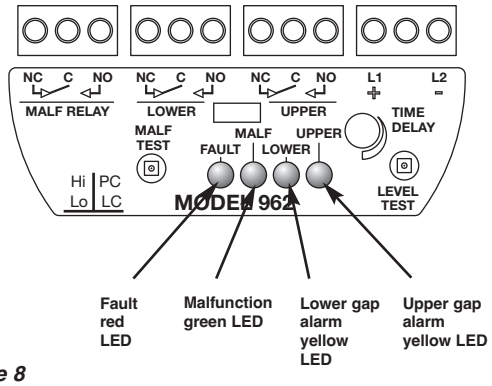


Figure 8

Note: in normal operation «Fault» is OFF / «MALF» is ON
in malfunction condition: «Fault» is ON / «MALF» is OFF

SET UP AND FUNCTIONS

Set up

High – Low Level Failsafe selection:
In «Hi» position, the relay will de-energize (report alarm) when the transducer is **wet.**
In «Lo» position, the relay will de-energize (report alarm) when the transducer is **dry.**

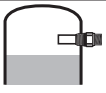
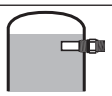
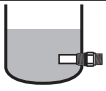
Fault selection:
The model 961 is equipped with a malfunction relay separate from the 5A DPDT process relay. The separate or joined operation of both relays can be selected :
I = in case of a malfunction, only the malfunction relay will de-energize. The process relay will only de-energize in case of a process alarm
J = in case of a malfunction, both the malfunction relay and the process relay will de-energize

The model 962 is equipped with a malfunction relay separate from the two 5A SPDT process relays. In case of a malfunction, both the malfunction relay and the process relays will de-energize. The operation of the two process relays can be selected:
LC (level control) = the two relays operate independent and will be de-energized when the corresponding tranducer gap is immerged/dry (following Hi/Lo setting)
PC (pump control) = the two relays operate in a latched mode, allowing to perform an automatic fill or drain pump control function in between the 2 transducer gaps. Consult below tables for proper indication and function.

Time delay setting:
Turning the potentiometer clockwise will increase the time delay from 0,5 s to 45 s. Time delay is typically used where turbulence, boiling or splashing can cause false level alarms.

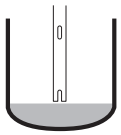
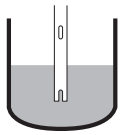
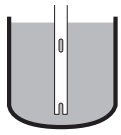
961 - Relay/ LED Indication:
When «WET» (wet LED): OFF = transducer gap is dry / ON = transducer gap is immerged
When «LEVEL» (level LED): ON = relay is energized / OFF = relay de-energized

Model 961: Relay/LED indication

Mode	Level	Process relay	« LEVEL» LED (relay - yellow)	« WET» LED (gap - yellow)	Error LED indication	
					Fault (red)	Malfunction (green)
«Hi» High level failsafe		Energized	ON	OFF	OFF = Normal operation ON = Malfunction See troubleshooting for malfunction identification	ON = Normal operation OFF = Malfunction See troubleshooting for malfunction identification
		De-energized	OFF	ON		
«Lo» Low level failsafe		Energized	ON	ON		
		De-energized	OFF	OFF		

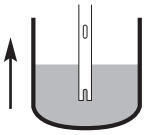
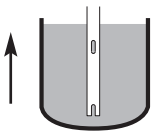
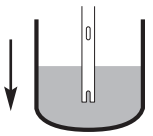
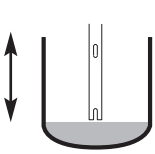
Model 962 as level control «LC»: Relay/LED indication

Relay # 1 = lower gap – Relay # 2 = upper gap

Level	Mode	Process relay	Lower LED	Upper LED	Error LED indication	
					Fault (red)	Malfunction (green)
	«Hi» High level failsafe	# 1 & 2: Energized	ON	ON	OFF = Normal operation ON = Malfunction See troubleshooting for malfunction identification	ON = Normal operation OFF = Malfunction See troubleshooting for malfunction identification
	«Lo» Low level failsafe	# 1 & 2: De-energized	OFF	OFF		
	«Hi» High level failsafe	# 1: De-energized # 2: Energized	OFF	ON		
	«Lo» Low level failsafe	# 1: Energized # 2: De-energized	ON	OFF		
	«Hi» High level failsafe	De-energized	OFF	OFF		
	«Lo» Low level failsafe	Energized	ON	ON		

Model 962 pump control «PC»: Relay/LED indication

High Level Failsafe (Hi) = auto empty mode
Low Level Failsafe (Lo) = auto fill mode

Level	Mode	Process relay	Lower LED	Upper LED	Error LED indication	
					Fault (red)	Malfunction (green)
	«Hi» High level failsafe	Energized	ON	ON	OFF = Normal operation ON = Malfunction See troubleshooting for malfunction identification	ON = Normal operation OFF = Malfunction See troubleshooting for malfunction identification
	«Lo» Low level failsafe	De-energized	OFF	OFF		
	«Hi» High level failsafe	De-energized	OFF	OFF		
	«Lo» Low level failsafe	Energized	ON	ON		
	«Hi» High level failsafe	De-energized	OFF	OFF		
	«Lo» Low level failsafe	Energized	ON	ON		
	«Hi» High level failsafe	Energized	ON	ON		
	«Lo» Low level failsafe	De-energized	OFF	OFF		

MAINTENANCE

Manual Testing

Level Test: (process relay(s)):
Pressing the “Level Test” pushbutton, will manually test the process relays and connected actuators/indicators. The level test forces the relay(s) to change from a de-energized to an energized status and vice versa. The LED’s will be ON/OFF corresponding (see tables in the configuration section). The time delay setting is not active during testing.

Malfunction Test (malfunction relay):
Pressing the “Malfunction Test” pushbutton for min 2 s, will manually test the malfunction relay and connected actuators/indicators. The malfunction test simulates a circuit failure and forces all relays to de-energize. The «MALF» LED will turn OFF and the «FAULT» LED ON. The time delay setting is not active during testing.

Troubleshooting

Problem	Action/Indication	Solution
No output signal	No LED’s are ON	Check wiring / input power Check for malfunction (Model 962). See below
No change in output between wet gap / dry gap	Gap may be plugged by solids / dense foam	Clean the transducer
	Gap is out of reach of liquid	Check mounting section on page 2 and relocate the unit or check blocking valves.
Chattering output	Excessive aeration / Turbulence	Increase time delay Check input power Relocate the AlarmScout
Fault LED is ON	A system fault has been detected	Check input power Check wiring between transducer and electronics or replace transducer.
	Press «LEVEL TEST» test pushbutton to identify the problem:	
	* --- * : 1 flash	Check wiring between transducer and electronics or replace transducer.
	** --- ** : 2 flashes	Replace electronics
	*** --- *** : 3 flashes	The unit senses excessive noise interference. Check shield connection or eliminate interference from a walkie-talkie, radio or other EMC source

SPARE PARTS

Replacing electronics/transducer

The electronics can be exchanged in the field under process conditions. Follow below steps to exchange electronics/transducer:

Note: Adjust set up of the replacing electronics following the settings of the old electronics (see configuration section). Check with customer and verify applicable site permits prior to start activities.

1. Disconnect power before removing the housing cover
2. Remove power/output wires (a)
3. Click out the protection cap of the electronics (b)
4. Remove the 2 bracket screws and slide out electronics (c)
5. Remove the transducer wires (see Wiring section) (d)
6. Re-assemble following the same procedure in opposite way. Make sure that the tip on the bracket of the electronic block is seated properly in the corresponding recess in the housing base - (e)

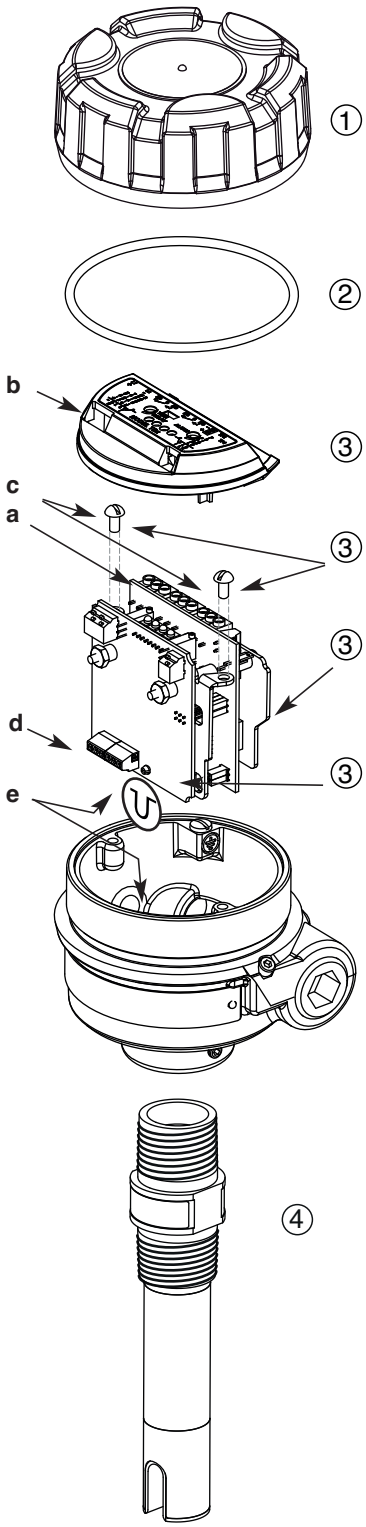
Spare parts

Partn°: | | | | | | | | | | | |

Digit in partn°: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

Serial n°: | | | | | | | | | | | |

See nameplate, always provide complete partn° and serial n° when ordering spares.



	Spare part
(1) Housing cover	consult factory
(2) "O"-ring	012-2201-237
(4) Transducer	consult factory

(3) Electronic module		
Digit 4	**Digit 5**	**Spare part**
1	2	089-7259-002
	7	089-7259-001
2	2	089-7258-002
	7	089-7258-001

Figure 9

For More Information
To learn more about Honeywell Enraf's solutions, contact your Honeywell Enraf account manager or visit www.honeywellenraf.com.

Americas
Honeywell Enraf Americas, Inc.
2000 Northfield Ct.
Roswell, GA 30076
USA
Phone: +1 770 475 1900
Email: enraf-us@honeywell.com

Europe, Middle East and Africa
Honeywell Enraf
Delftechpark 39
2628 XJ Delft
The Netherlands
Phone: +31 (0)15 2701 100
Email: enraf-nl@honeywell.com

Asia Pacific
Honeywell Pte Ltd.
17 Changi Business Park Central 1
Singapore 486073
Phone: +65 6355 2828
Email: enraf-sg@honeywell.com

Honeywell Enraf

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