



By KTI Systems, Inc.

KWD1224 WATER DETECTOR

“DIESEL ENGINES ONLY”

USED WITH KEENAN FILTER BOWLS OR RACOR® TURBINE SERIES FILTER BOWLS WITH 1/2-20 -05 ORB PROBE PORTS

INSTALLATION/USER GUIDE



THE INSTALLATION AND SETUP SHOULD BE PERFORMED BY A QUALIFIED TECHNICIAN

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MADE IN USA

FEATURES AND BENEFITS

- **WATER DETECTION**—Warns crew when the online filter water is detected in the online fuel bowl.
- **REMOTE WARNING PANEL** - Can be installed anywhere in a facility or vessel.

WD1224 INSTALLATION/ USER GUIDE

TABLE OF CONTENTS

| PAGE | DESCRIPTION |
|-------------|---|
| 1. | INSTALLATION TIPS |
| 2. | WD1224 CONTROL PANEL AND PROBE INSTALLATION |
| 3. | WD1224 PANEL CUTOUT TEMPLATE |
| 4. | FIELD WIRING AND WIRING DIAGRAM |
| 4. | POST INSTALLATION START UP AND OPERATION |
| 4. | DRAINING WATER FROM BOWL |
| 5. | SPECIFICATIONS |
| 6. | WARRANTY |

THE INSTALLATION AND SETUP SHOULD BE PERFORMED BY A QUALIFIED TECHNICIAN

INSTALLATION TIPS

PLEASE READ BEFORE INSTALLING

- Do not smoke or allow open flames.
- Turn off engine.
- Turn off power and disconnect battery ground cable connection.
- Before drilling holes or installing mounting hardware make sure the back side is clear of obstructions such as fuel lines, electrical harnesses, fuel and fluid tanks, ships hull, etc.
- Use proper fuel lines, connections and mounting hardware. Use proper wire, connectors and routing.

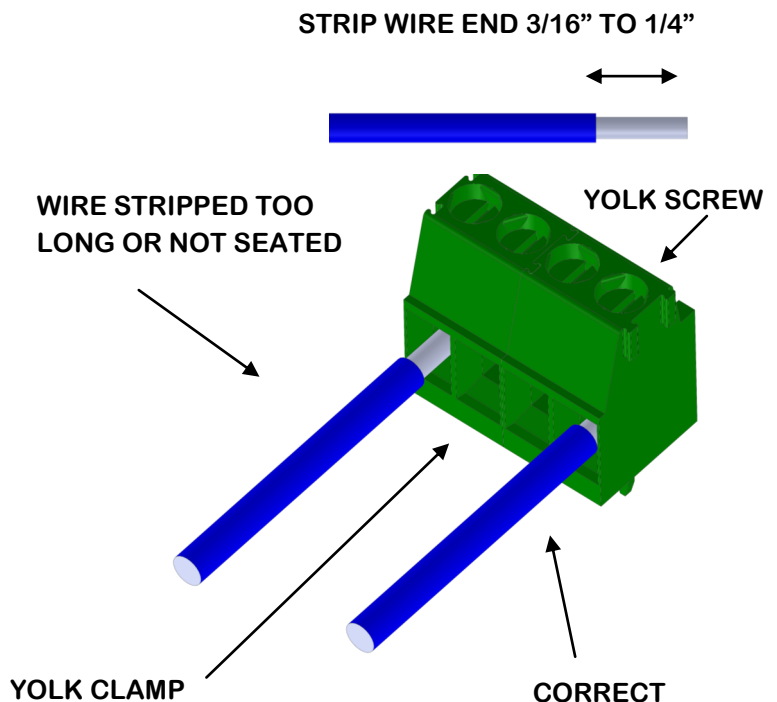
SUGGESTED TOOLS AND SUPPLIES

- Shop towels and a clean bucket.
- Clean diesel to prime the filter.
- Clean engine oil to lubricate seals.
- Use adequate light, ventilation and eye and skin protection.
- Proper 18-16 AWG wire for harness

WIRING INSTALLATION TIPS

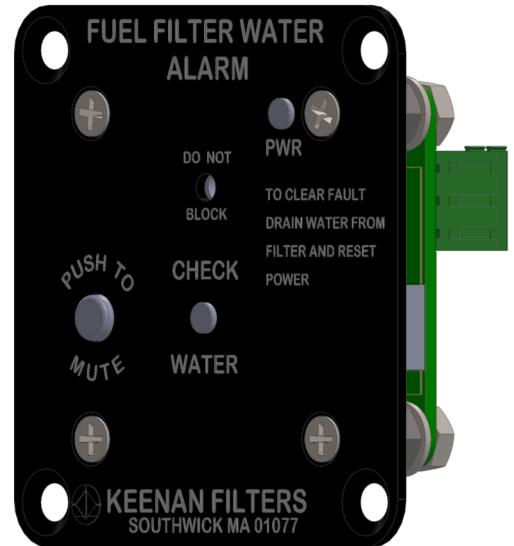
**SERVICE NOTE: Euro type blocks are very common and user friendly, but simple mistakes can make you spend time trouble shooting. One of the most common mistakes is not stripping enough insulation off of the termination end. When this happens, the insulation gets clamped not the conductor. Another common mistake is loose strands shorting to the adjacent clamping yoke (wire socket).*

Use approved 18-16 AWG wire and strip 3/16" to 1/4" of insulation off on the termination end. Make sure the yolk screw is backed out and the yolk cavity is clear. Push the wire in until it bottoms and hold the wire in position when tightening the yolk screw. After tightening, pull on the connection to test, then retighten if needed. Visually inspect to make sure all the strands are clamped in the yolk clamp and the conductor is barely visible.



WD1224 REMOTE PANEL INSTALLATION

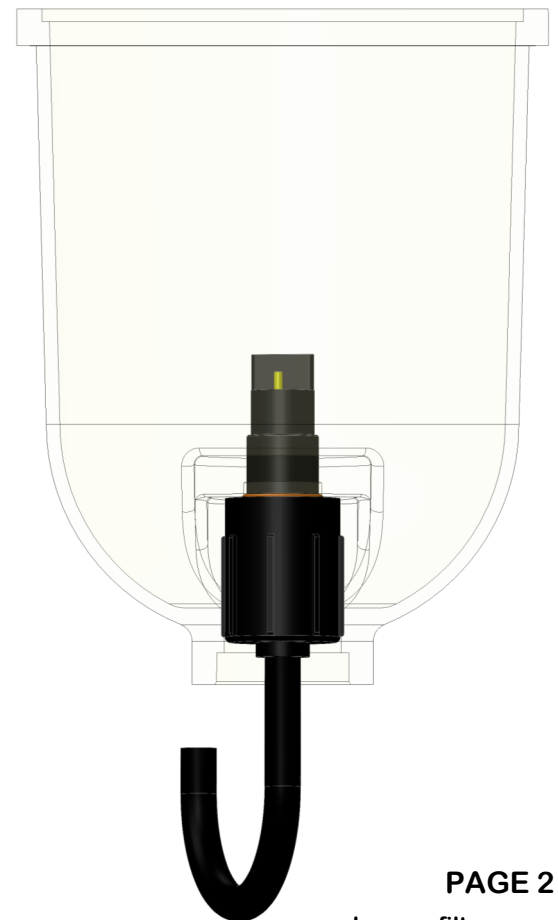
1. The WD1224 is a remote panel designed to give the operator indication if 5 ounces of water or more is present in the fuel bowl. The panel should not be exposed to outside elements and must be mounted inside. Make sure the surface is flat, is easily accessible and not in an area that will be bumped, kicked or objects placed on it. Determine that when running wire to the unit to the filter interface box, routing can be done easily with minimal obstructions.
2. The template is only a guide, (when printing out the KWD1224 template make sure the printer settings are set to 100% scale and use the document margins. After printing, measure the template and confirm the template is to scale). The final drill and cut dimensions are the installers responsibility to check.
3. Temporarily install the KWD panel and secure with #6 flat screws. Make sure the panel is flat and the screws fit flush. Then remove the panel for wiring.



KWD1224 CONTROL PANEL

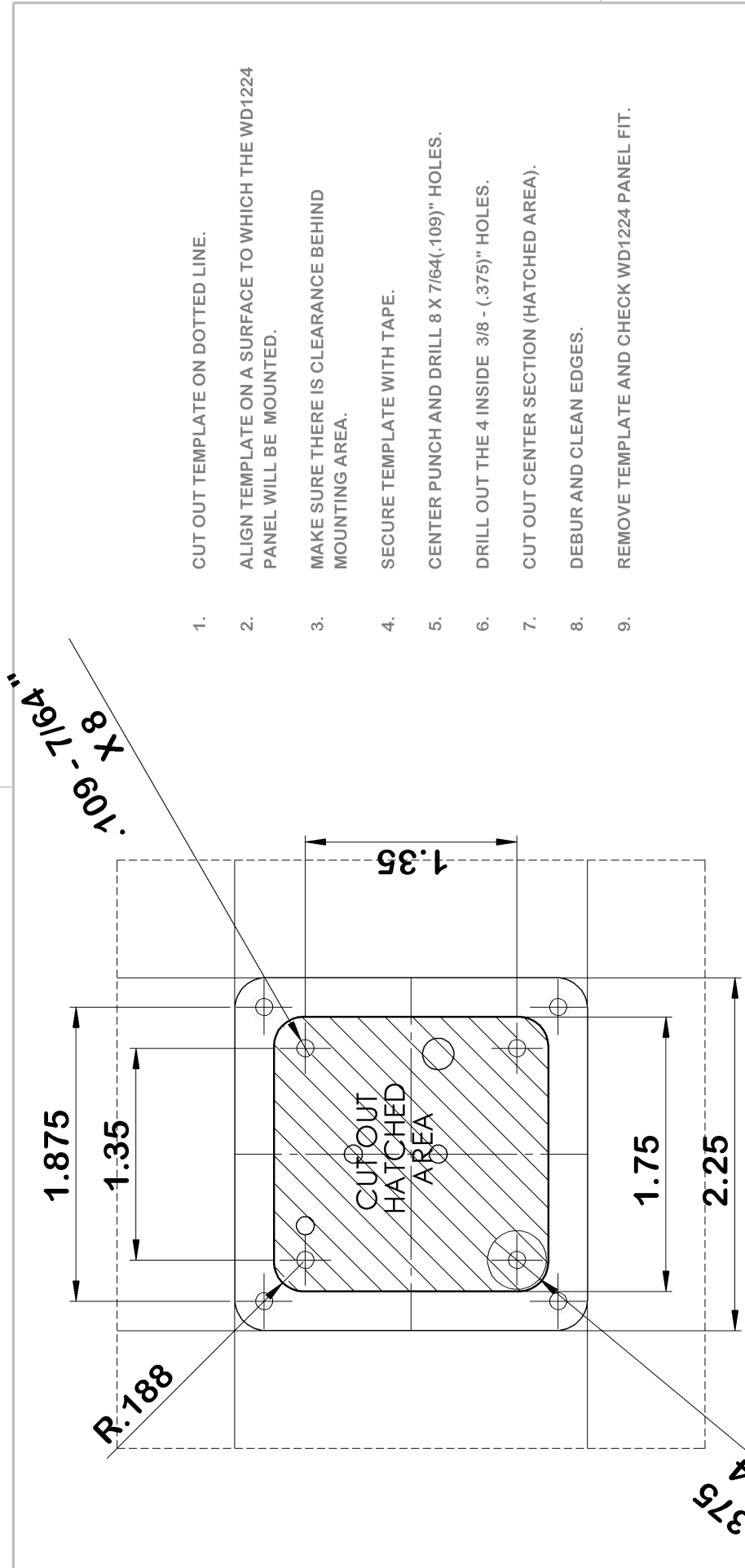
PROBE INSTALLATION

1. If fuel is present in fuel bowl, drain out into a suitable container and remove plug from probe port.
2. Thread probe into bowl port until it stops. Visually check and make sure the probe is seated against flange.
3. Connect probe to the supplied 5' harness, properly routed and support wire harness back to the control panel, use a terminal block if the control panel is further than 5' away.



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1. CUT OUT TEMPLATE ON DOTTED LINE.
2. ALIGN TEMPLATE ON A SURFACE TO WHICH THE WD1224 PANEL WILL BE MOUNTED.
3. MAKE SURE THERE IS CLEARANCE BEHIND MOUNTING AREA.
4. SECURE TEMPLATE WITH TAPE.
5. CENTER PUNCH AND DRILL 8 X 7/64(.109)" HOLES.
6. DRILL OUT THE 4 INSIDE 3/8 - (.375)" HOLES.
7. CUT OUT CENTER SECTION (HATCHED AREA).
8. DEBUR AND CLEAN EDGES.
9. REMOVE TEMPLATE AND CHECK WD1224 PANEL FIT.

**DO NOT SCALE WHEN PRINTING USE 1:1
MEASURE TEMPLATE BEFORE USING**

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|---|--|--|--|------------|-----------------|--|
| UNLESS OTHERWISE SPECIFIED OBTAIN GEOMETRY FROM CAD MODEL CONSIDER ALL DIMENSIONALLY UNDEFINED FEATURES CAD AND PROCESS DRIVEN | | UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/32 ANGULAR: ±0.5° TWO PLACE DECIMAL ±0.01 THREE PLACE DECIMAL ±.004 | | NAME AK | DATE 7/17/17 | KTI SYSTEMS INC. <small>SOUTHFIELD, MI</small> |
| NEXT ASSY USED ON | | INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL FINISH | | DRAWN | CHECKED | |
| APPLICATION | | DO NOT SCALE DRAWING | | ENG APPR. | MFG APPR. | SIZE DWG. NO. REV A A |
| | | | | Q.A. | COMMENTS: | SCALE: 5:1 WEIGHT: SHEET 1 OF 1 |

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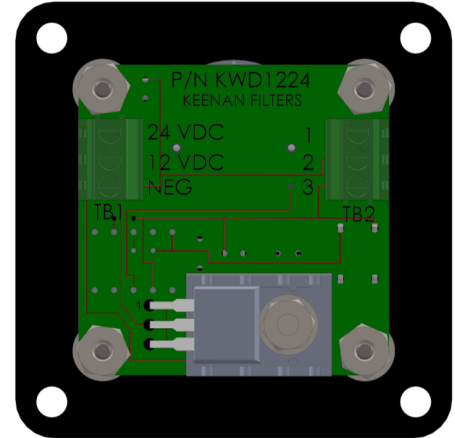
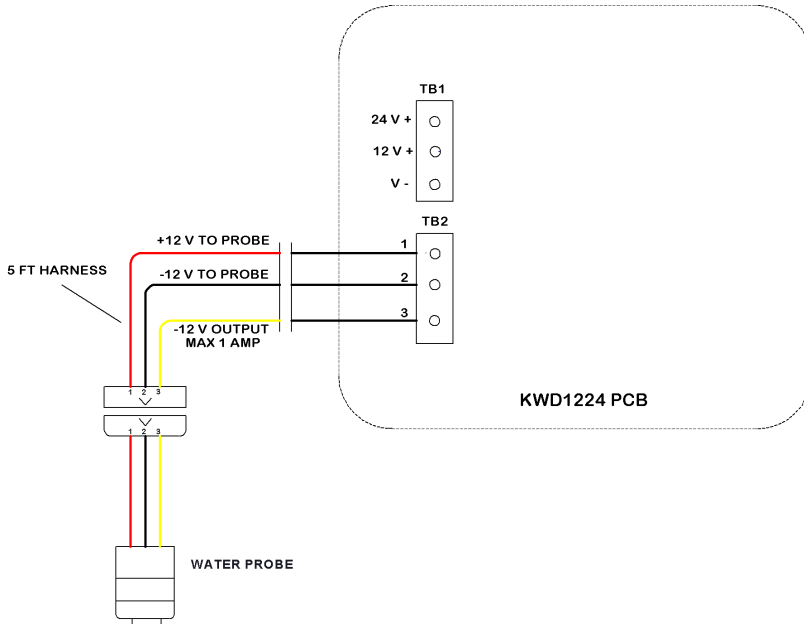
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FIELD WIRING

1. Follow the wiring diagram and connect a circuit protected 12 or 24 volt source to TB1.
2. Connect the probe wires to TB2, properly route and support all wires.

WD1224 WIRING DIAGRAM



POST INSTALLATION START UP AND OPERATION

1. Turn on power to the control panel, there will be a 1-2 second audible test with a check water warning light on the control panel.

NORMAL OPERATION

1. When in operation if the water in the bowl rises to the probe tip (5 ounces +) the probe will send a warning signal to the control panel and the alarm will sound, to mute the sound just push the "Mute" button.
2. When it is possible, drain the water from the bowl, service the filter with clean fuel and reset the power switch on the control panel .

DRAINING WATER FROM BOWL

1. Engine must be off to service a single filter system.
 2. Close fuel inlet shut-off valve or tank supply.
- **GRAVITY METHOD**
 - ◇ Remove drain valve plug and remove lid assembly. Position a suitable container to catch the water and fuel.
 - ◇ Slowly open the filter drain valve until water is drained. Close drain valve and re-install drain valve plug.
 - ◇ Fill filter with clean fuel. Reinstall lid assembly. Open fuel inlet shut-off valve.

K60S SPECIFICATIONS

| | |
|----------------------------------|---------------------------|
| Panel Height | 2.25" (5.7cm) |
| Panel Width | 2.25 (5.7cm) |
| Fuel | Diesel |
| Bowl Water Alarm Capacity | 5.5 oz. (163 ml) |
| Voltage | 12/24 |
| Current Draw | |
| Standby | 57 ma |
| Warning | 145 ma |
| Circuit Protection | 3 AMP |
| Probe threads | 1/2-20 SAE ORB -05 |

LIMITED WARRANTY

Thank you for purchasing a product from K.T.I. Systems, Inc. of Southwick, Massachusetts.

All products manufactured by K.T.I. are subject to the following Limited Warranty.

Limited Warranty. K.T.I. warrants and guarantees only to the original purchaser that the product is free from defects of materials and workmanship in the manufacturing process for the period of one year from the date of purchase of a new K.T.I. product.

This Warranty does not apply to special order items and this Warranty does not apply to renovated, retrofit or modified products, whether or not they originated with K.T.I. and whether or not they were retrofitted by the original owner.

This Warranty does not apply to products installed in watercraft for racing or competition.

This Warranty shall be inapplicable to any product not properly installed and not properly used by the purchaser or to any product damaged or impaired by external forces.

This Warranty does not cover any product for which applicable proof of purchase date, installation date and watercraft mileage at the time of installation is not presented.

This Warranty does not cover any issues that are considered normal maintenance and which are customarily replaced, cleaned or adjusted as normal owner maintenance, unless they are defective in material or factory workmanship.

Process. A product claimed to be defective must be returned to the place of purchase. K.T.I. at its sole option shall replace the defective product with a comparable new product or repair the defective product in the event that it qualifies under this Warranty.

LIMITATION OF LIABILITY

To the extent that this Warranty is available on this product, K.T.I. shall have no liability whatsoever for incidental or consequential damages flowing from the use of any defect product or by reason of the failure of any product. K.T.I. specifically disavows all express or implied warranties of fitness for a particular purpose, warranties of description, and warranties of merchantability.

Product Warning. This product and its use may be considered inherently dangerous. Failure of the product, improper selection of the product or improper use of the product or related products may cause death, personal injury and property damage. K.T.I. disclaims any responsibility for any such injury or damage.

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