TRM Sensors LLC

TRM-Wall-Alarm

Multi-role, Audible/Visual Leak Alarm Indicator

Product Description

The TRM-Wall-Alarm is a multi-function audible/visual alarm that can be mounted on any indoor wall surface. An alarm condition is indicated by a 95 dB buzzer and a red LED pushbutton. In all modes, pushing the red LED push button will silence the buzzer, but the red LED alarm indication stays illuminated until the underlying alarm condition is corrected.

The TRM-Wall-Alarm also includes two SPDT output relays. These contacts can be connected to BMS or PLC alarm management systems or can be used to daisy chain additional alarm devices (e.g. a rotating beacon)i Both relays change state when an alarm condition is detected and stay latched in the alarm state until the underlying cause is corrected. One of the two relays is normally energized so its contacts change state with loss of power as well as an alarm condition.

TRM Wall Alarm supports three different uses:

- Key component of the TRM “Any Liquid” Optical Leak Detection System; supplying power and alarm indication for up to four TRM-ALOS optical leak sensors.
- A low-cost, free-standing monitor for up to four TRM-DFS-3 “fuel only” leak detection sensors.
- As a traditional remote alarm unit for any monitoring device that provides dry contacts for alarm indication such as TRM-Easy5-Relays and Panels.

The TRM Wall Alarm operates on 5 Vdc, 12 Vdc or 24 Vdc. All voltages are supported and there is no need to pre-designate the operating voltage. Power can be supplied to the Wall Alarm from a local source or when operating as a “remote alarm”, operating voltage can come from the monitoring panel.

Each unit includes a UL approved Class 2, 5 Vdc, plug-in power supply so that the unit is ready to operate directly out of the box.

Available accessories include:

- Low cost 12 Vdc DIN rail power supply for use when the plug-in supply is inappropriate;
- DC/DC isolating power supply for use when a local control panel supply is available but is not isolated from earth ground;
- DIN rail mounted expansion relays when additional output contacts are needed.

Key Features

- Audible alarm suitable for security stations, control rooms or similar staffed locations.
- SILENCE push button that illuminates with red LED and stays illuminated as long as alarm condition is active.
- Two SPDT (Form-C) contacts rated at 250V 8A. One relay is normally energized so loss of power can be remotely detected in addition to leak or cable break conditions
- Less than 2 watts maximum power consumption
- Multiple uses:
  - Monitor up to four TRM-ALOS Optical Probes
  - Monitor up to four “fuel only” TRM- DFS-3 sensors
  - Remote Alarm for any monitor device with dry contact output such as TRM-Easy5 relays and panels.

Installation Instructions, Accessory Items and Full Specification on Reverse

TRM-Wall-Alarm

Specifications

- Operating Voltage Options: 5, 12 or 24 Vdc.
- Maximum Power consumption: Less than 2W
- Audible Alarm Sound level: 95 dB @ 30 cm when powered at 12 Vdc
- Red lighted pushbutton switch acts as local SILENCE button.
  After button push, LED stays on, buzzer remains off until the cause of the alarm is corrected after which the Wall Alarm returns to standby mode (no LED, no buzzer)
- 2 x SPDT (Form-C) Output Relays: One relay is normally energized and one relay is normally de-energized. (All terminal block connections are indicated in their de-energized condition.)
- Relay Contact Rating 250V / 8A
- Weight: Approximately 12 oz (340 gm)
- Dimensions
  W 3.5 in (89 mm)
  H 5.75 in (146 mm) including flange
  D 3.5 in (89 mm) including button
- Builtin flange for surface mount on any indoor wall surface
- Operating Temperature Range:
  -4F to 158F (-20C to 70C)

Pug-in 5 Vdc supply furnished with each alarm unit.

Accessories

TRM-DC/DC Isolator Install between control panel 12 Vdc or 24 Vdc supply and the TRM-Wall-Alarm when monitoring one or more TRM-DFS-3 Fuel only sensors. Use the TRM-DC/DC Isolator to assure that the sensor excitation voltage does not accidentally set up a ground loop leading to galvanic corrosion of the sensor element (Mean-well DDR-15G-12)

TRM-Universal Power Supply 12 Vdc / 10 W DIN Rail power supply that operates on 120 or 240Vac line voltage supply and outputs an isolated 12 Vdc supply for powering the TRM-Wall-Alarm. Use this alternate power supply if the supplied 5Vdc plug-in wall adapter is inappropriate. (Lamda /TDK DLR-10-12-1)

TRM-Expansion-Relay. A DIN rail mounted DPDT (2x Form-C) relay that can be controlled by the TRM-Wall-Alarm. Useful when extra contacts are needed. (Phoenix 5542738)

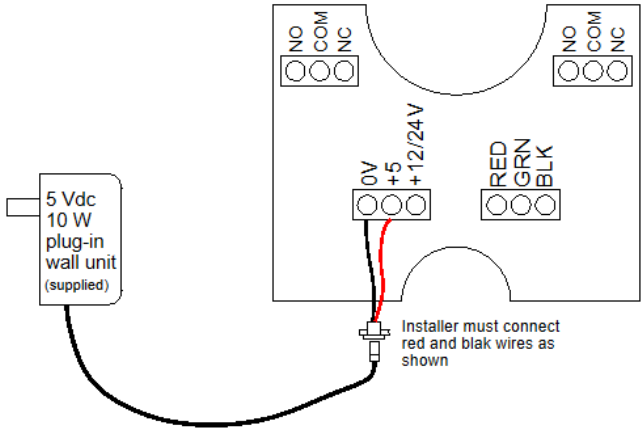
Installation Instructions

1. Install TRM-Wall-AlarmAlarm in a location where the buzzer will be heard by the facility staff
2. The TRM-Wall-Alarm enclosure is designed for surface mounting on a wall surface. A flange is built into the unit enclosure. Select mounting hardware (installer supplied) appropriate to the wall surface.
3. Once the enclosure tub is attached to the wall surface, the cover can be removed and set aside in a protected location. All electrical connections: voltage supply, sensor leader (if any) and alarm relay connections (if any) can be bought in via the multi-hole cable gland or the cable gland can be replaced by conduit fittings if appropriate. Leave 6” to 10” of wire for connections to the terminal blocks.
4. Using the attached wiring diagrams for guidance, connect the field wires to the terminal blocks as indicated.
5. Special Power Supply Notes:
   A. Operating voltage may come from a local source of 5Vdc, 12 Vdc, or 24 Vdc A plug-in 5 Vdc “wall wart” power supply is included with the TRM-Wall-Alarm but other voltage supplies can be substituted.
   B. If using a local control panel source of 12 or 24 Vdc in conjunction with TRM-DFS-3 sensors make sure that the panel’s DC 0V rail is not connected to earth ground. If in doubt, install a DC/DC isolator (see accessories) to prevent corrosion of the sensor in damp areas
   C. When using the TRM-Wall-Alarm as a remote alarm (e.g. as an alarm enunciator with TRM-Easy5 Relay or TRM-Easy5 Panel), there is no need for a local power supply, power and switching can come from the primary monitoring location.
6. When Connections are completed, coil excess wire into the body of the enclosure and replace the cover using the 4 captive screws.

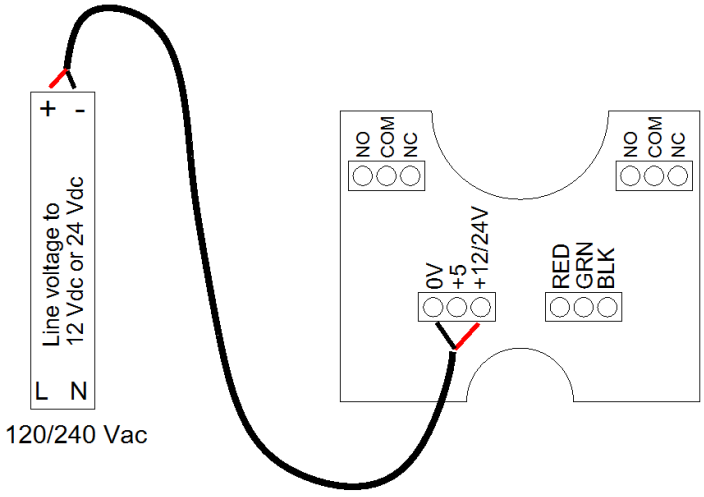
TRM-Wall Alarm Wiring Diagrams:

Power Connections

5 Vdc Plug-in Supply (provided with unit)



12/24 Vdc Power supply (TRM-Universal Power Supply or equiv.):



DC/DC Isolator (TRM-DC/DC-Isolator or equiv.):

Note: This option is required only in special circumstances
1. When the TRM-Wall-Alarm will be used to monitor TRM-DFS-3 Indoor Fuel Sensors
   and
2. Only if the existing control cabinet 0V rail is tied to earth ground.

The DC/DC isolating Power Supply is not needed for TRM-ALOS Optical Probes or when using the TRM-Wall Alarm as a remote enunciator or if the panel's DC supply is floating relative to earth ground.
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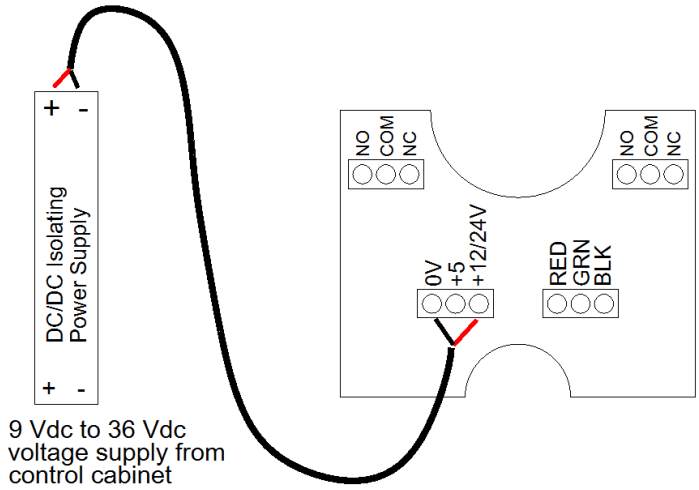
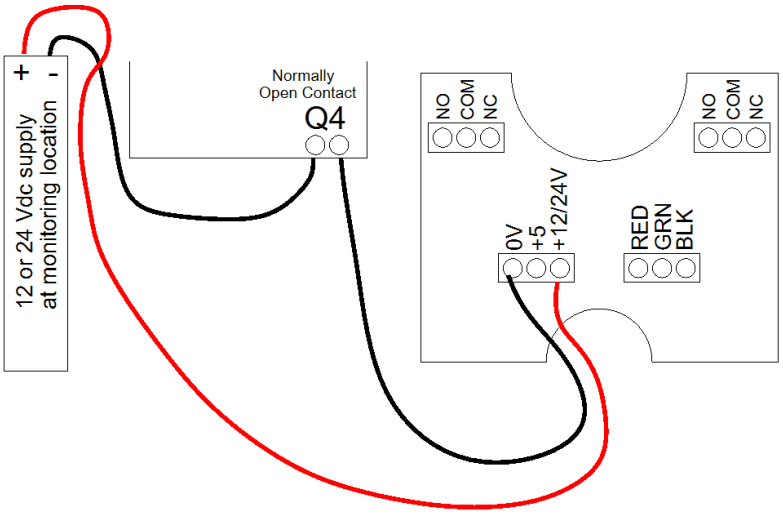


Remote Alarm Mode powered from TRM-Easy5-Panel or similar monitoring device using dry contact alarm output for control:



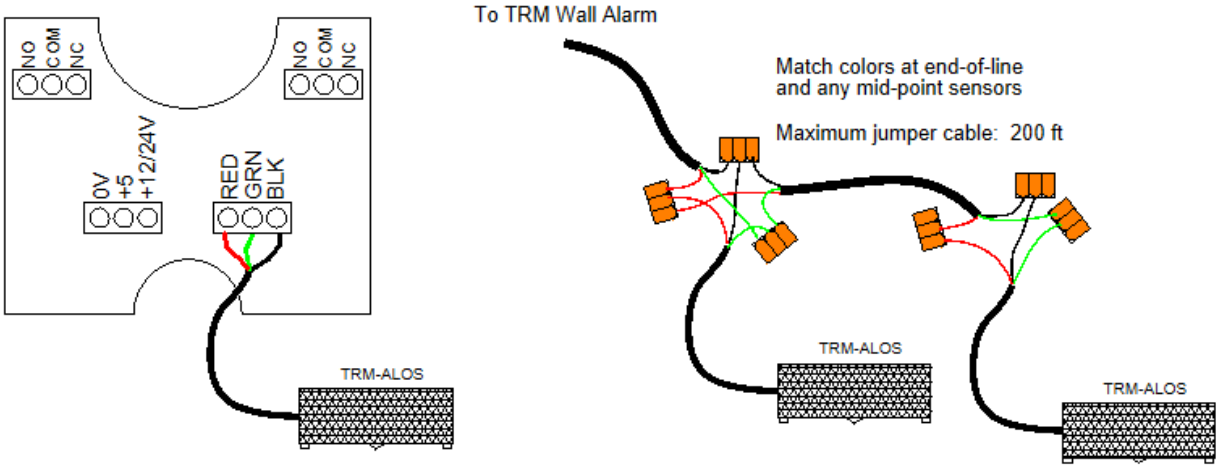
Note: This is the "classic" Remote Alarm connection where power is supplied from the control panel and a normally open contact is used to turn power off and on at the TRM-Wall-Alarm based on a leak detection. In this remote alarm mode, there are no connections to the sensor input terminals and the TRM-Wall-Alarm is powered and controlled by the monitoring panel and its power supply.

Sensor Connections

Caution: Don't mix TRM-ALOS and TRM-DFS. Use only one type.

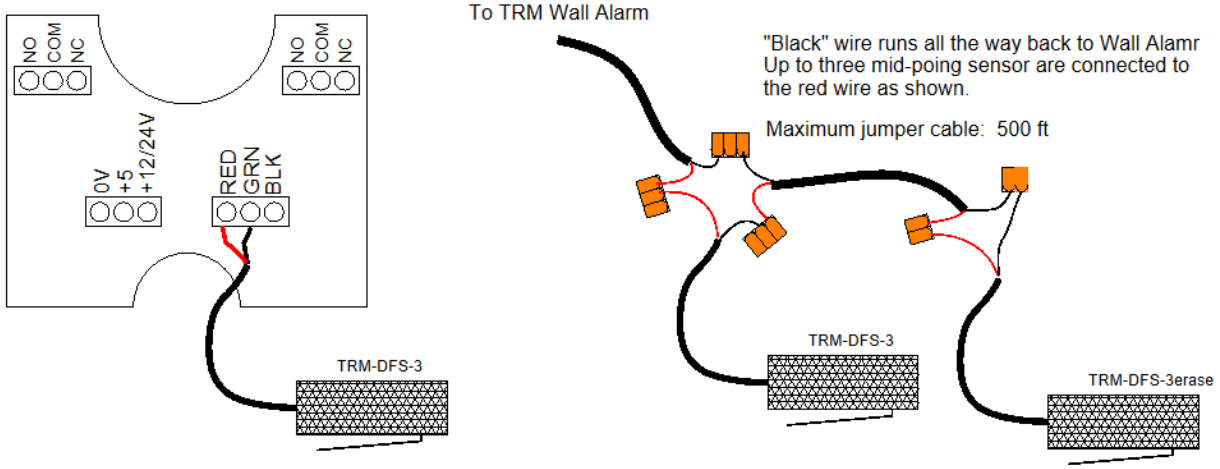
TRM-ALOS Optical Probes:

TRM-Wall-Alarms can monitor from one to four TRM-ALOS "any liquid" optical probes. The Wall Alarm must be powered using one of the options listed above. Connection to the optical probe(s), requires a three wire jumper cable. If more than one probe is installed, connect them as indicated in a "parallel" daisy chain as shown on the right.



TRM-DFS-3 Indoor Fuel Sensors:

TRM-Wall-Alarms can monitor from one to four TRM-DFS-3 Indoor Fuel Sensors. The Wall Alarm must be powered using one of the options listed above. Connection to the DFS-3 fuel sensors requires a two wire jumper cable. If more than one probe is installed, connect them as indicated in a "series" daisy chain as shown on the right.



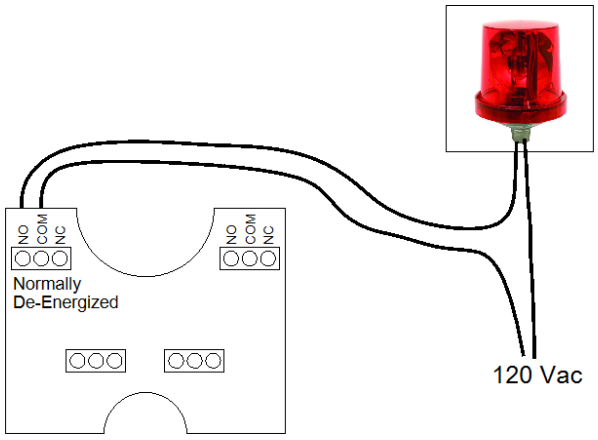
Alarm Relay Connections

TRM-Wall-Alarm has two separate SPDT (Form-C) relays for the installer to use as desired. One relay coil is energized in normal operation. The second coil is de-energized and is activated only when an alarm is detected.

IMPORTANT: BOTH SETS OF OUPUT CONTACTS ARE LABLED AS THEY WILL APPEAR WHEN POWER IS DISCONNECTED . THIS CONFORMS TO INDUSTRY STANDARDS BUT CAN BE CONFUSING FOR THE INSTALLER. IF THE INSTALLER WANTS TO USE A “FAIL SAFE” MODE REQUIRING A CLOSED CONTACT WHEN THE SYSTEM IS OPERATIONAL AND THAT OPENS WHEN A LEAK IS DETECTED OR WHEN POWER IS LOST THE REMOTE MONITORING IPUT SHOULD BE CONNECTED TO THE COM AND NO CONTACTS OF THE NORMALLY ENERGIZED RELAY.

The action of the relay coils follows the same logic as the red LED in the SILENCE pushbutton. If an underlying alarm condition is present, there red LED is illuminated and the relay coils are in their alarm state. The LED and the relay coils latch in the alarm state regardless of whether or not the SILENCE button is pressed. The only way to return the LED and the relay coils to their normal state is to correct the underlying alarm condition.

Simple On/Off connection to operate a rotating beacon or similar:



“Fail safe” connection to BMS or PLC: