

Model GD-70D4XAC-XXS Supplement to the GD-70D Operator's Manual

Part Number: 71-0169RK

Revision: P1

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Product Warranty

RKI Instruments, Inc. warrants gas alarm equipment sold by us to be free from defects in materials, workmanship, and performance for a period of one year* from the date of shipment from RKI Instruments, Inc. Any parts found defective within that period will be repaired or replaced, at our option, free of charge. Parts must be returned to RKI Instruments, Inc. for repair or replacement. This warranty does not apply to those items which by their nature are subject to deterioration or consumption in normal service, and which must be cleaned, repaired or replaced on a routine basis. Examples of such items are:

- | | |
|-------------------------------|--------------------|
| a) Pump diaphragms and valves | c) Batteries |
| b) Fuses | d) Filter elements |

Warranty is voided by abuse including mechanical damage, alteration, rough handling, or repair procedures not in accordance with instruction manual. This warranty indicates the full extent of our liability, and we are not responsible for removal or replacement costs, local repair costs, transportation costs, or contingent expenses incurred without our prior approval.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES AND REPRESENTATIONS, EXPRESSED OR IMPLIED, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF RKI INSTRUMENTS, INC. INCLUDING BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL RKI INSTRUMENTS, INC. BE LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE OF ANY KIND CONNECTED WITH THE USE OF ITS PRODUCTS OR FAILURE OF ITS PRODUCTS TO FUNCTION OR OPERATE PROPERLY.

This warranty covers instruments and parts sold to users only by authorized distributors, dealers and representatives as appointed by RKI Instruments, Inc.

We do not assume indemnification for any accident or damage caused by the operation of this gas monitor and our warranty is limited to the replacement of parts or our complete goods. Warranty covers parts and labor performed at RKI Instruments, Inc. only, and does not cover field labor or shipment of parts back to RKI.

Overview

This supplement describes the differences and additional features of the Model GD-70D4XAC-XXS compared to the GD-70D. It also describes how to install, startup, maintain, and calibrate the GD-70D4XAC-XXS. See the GD-70D Operator's Manual for information specific to the GD-70D.

Specifications

Table 1 lists specifications for the GD-70D4XAC-XXS.

Table 1: Specifications

Target Gas & Detector Range	Refer to the RKI Instruments Inc. List of Detectable Gasses
Enclosure Type	NEMA 4X
Sampling Method	Sample-draw
Input Power	115/220 VAC
Signal Output	4 to 20 mA
Response Time	90% in 60 seconds
Accuracy	± 5% of fullscale
Flow Rate	Approximately 0.5 liters/minute
Recommended Sample Tubing	1/4" O.D. x 1/8" I.D. Teflon PTFE

Description

This section describes the components of the GD-70D4XAC-XXS. It consists of the enclosure, a GD-70D and a power supply mounted inside, and an amber strobe mounted on the top right side of the enclosure. The “XX” in the part number represents a number that denotes the target gas and changes depending on the target gas. The “S” denotes that a strobe is installed. For example, the part number for a detector head for ozone (O₃) detection is GD-70D4XAC-16S. Consult RKI Instruments, Inc. for a complete list of available part numbers.

A hydrophobic sample filter is also provided with the GD-70D4XAC-XXS for installation at the inlet fitting. The filter has push fittings for 1/4 inch O.D. teflon tubing and can be connected to the short tubing stub on the GD-70D4XAC-XXS inlet fitting. The filter scrubs particulates out of the sample stream and keeps water and many other liquids from entering the GD-70D4XAC-XXS flow system.

Enclosure

The enclosure is a type NEMA 4X plastic enclosure designed for use in areas that are subject to rain or hosing down. A mounting foot is installed in each corner. Two sample fittings are mounted on the bottom right of the enclosure and two 3/4” conduit hubs are mounted to the left of the sample fittings.

Sample Fittings

The inlet fitting is on the bottom right of the enclosure and the exhaust fitting is to the left of the inlet fitting. The fittings accept 1/4” O.D. x 1/8” I.D. Teflon tubing. The inlet fitting has a short factory installed tubing stub for use with the hydrophobic filter.

Conduit Hubs

Two 3/4” conduit hubs are located to the left of the sample fittings. They are used for routing wiring into the enclosure by using conduit or an appropriate cable bushing.

GD-70D & Power supply

The GD-70D sample draw detector head is mounted to a plate inside the enclosure. The GD-70D sample fittings are factory connected to the sample fittings on the NEMA 4X enclosure. The GD-70D is powered with 24 VDC supplied by a power supply that operates from a 100 - 240 VAC input. The GD-70D is factory wired to the power supply and to the strobe.

Strobe

A NEMA 4X amber strobe is mounted on the top right side of the enclosure. It is factory wired to the alarm 1 relay terminals on the GD-70D and the 24 VDC output of the power supply so that it turns on during an alarm 1 condition.

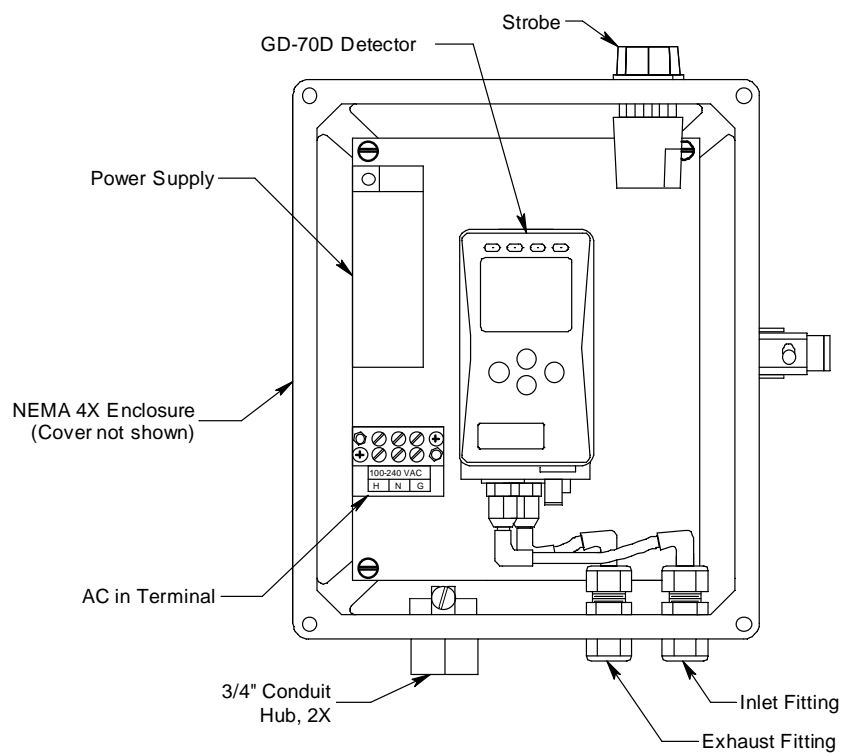


Figure 1: Component Location

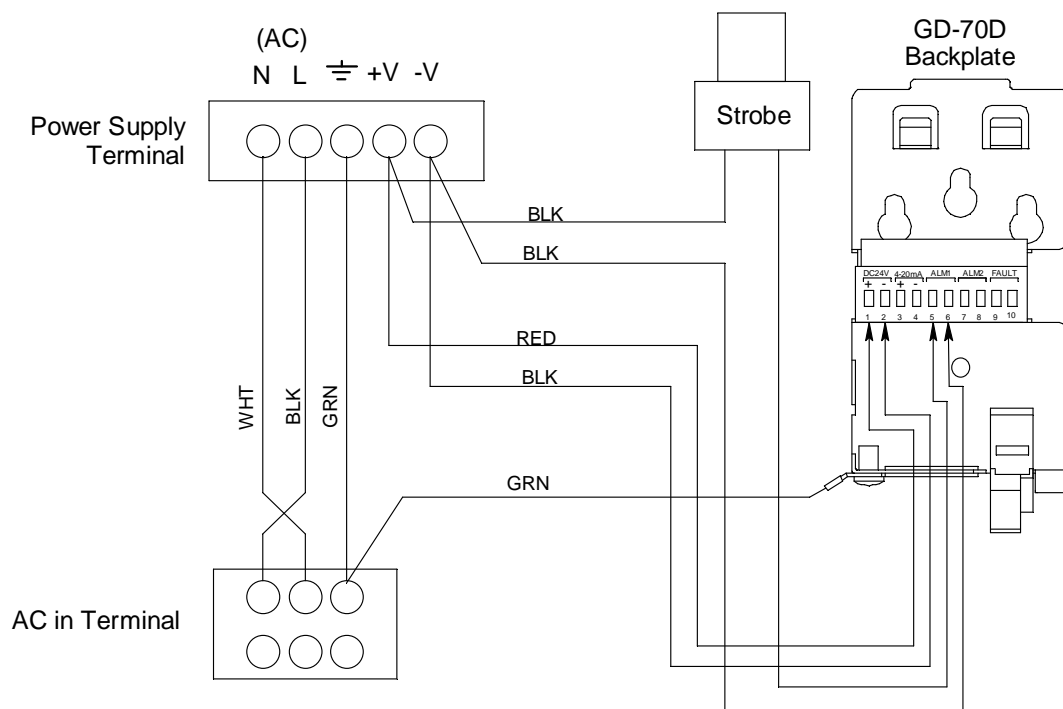


Figure 2: Factory Wiring

Installation

This section describes how to install the GD-70D4XAC-XXS at the monitoring site.

Mounting the GD-70D4XAC-XXS

1. Select a mounting site that is representative of the monitoring environment. Consider the following when you select the mounting site.
 - Select a site that is easily accessible for servicing.
 - Select a site where the GD-70D4XAC-XXS is not likely to be bumped or disturbed. Make sure there is sufficient room to make wiring and sample line connections at the bottom of the GD-70D4XAC. Also make sure there is sufficient room to perform start-up, maintenance, and calibration procedures.
 - Select a site near the sampling area. The GD-70D4XAC-XXS is designed to detect a variety of toxic gases many of which are easily absorbed in sample tubing. Keep the sample line length to a minimum. Teflon PTFE tubing is recommended.
 - Use four 1/4" screws through the mounting feet to mount the GD-70D4XAC-XXS to a vertical surface. See Figure 1 for the mounting dimensions.

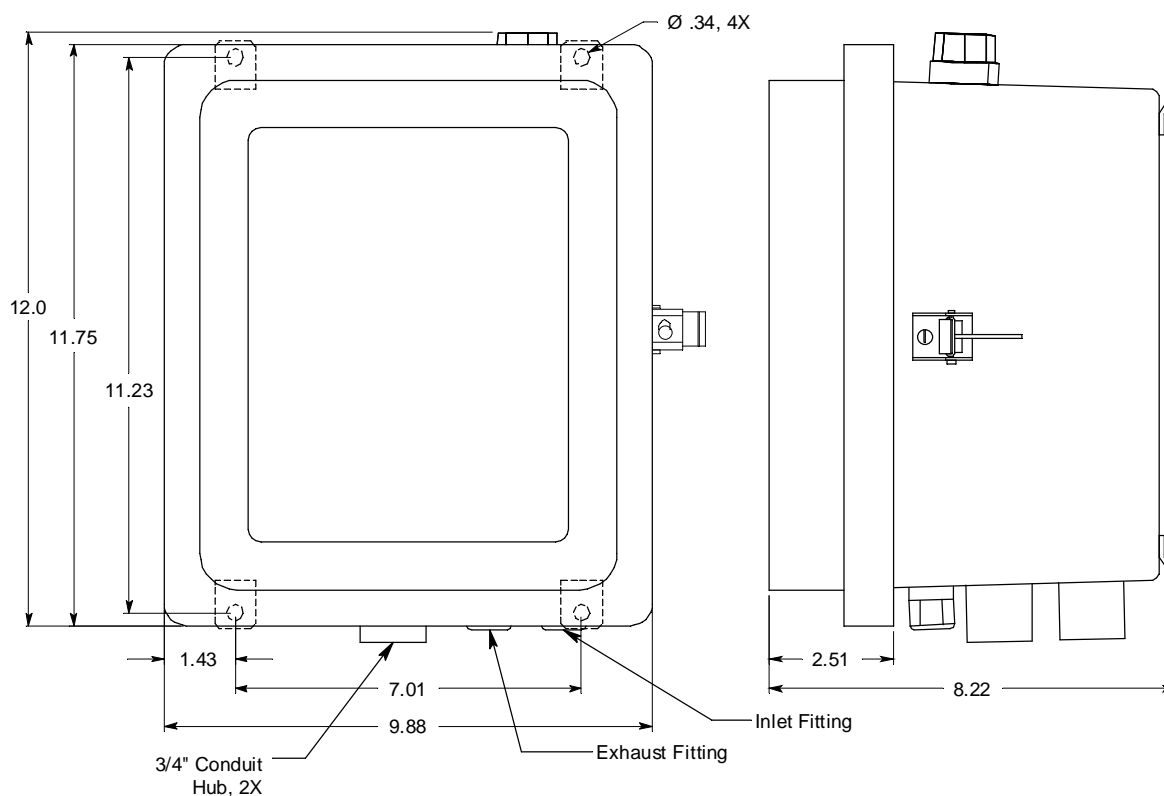


Figure 3: Outline & Mounting Dimensions

Connecting Sample Lines to the GD-70DD4XAC-XXS

1. Connect the hydrophobic filter to the tubing stub on the inlet
2. Connect a length of sample tubing to the other side of the hydrophobic filter and route it to the sampling area. Be sure not to keep the length to a minimum. Consult RKI

Instruments, Inc. for lengths of more than 20 feet.

CAUTION: *Avoid loops or slumps in the incoming sample line. To reduce response time, keep the incoming sample line as short as possible.*

3. Attach 1/4" O.D. x 1/8" I.D. Teflon PTFE sample tubing to the gas out fitting. Route the opposite end of the tubing to an open area where the sample can safely disperse or to an exhaust duct.

Wiring the GD-70D to a Controller and AC Power

WARNING: *Always verify that power to the GD-70D4XAC-XXS and to the controller are off and that the controller's and GD-70D's power switches are in the off position before making wiring connections or adjustments.*

1. Turn off power to the controller and the GD-70D4XAC-XXS.
2. Place the controller's and GD-70D's power switches in the OFF position.
3. Use the conduit hubs at the bottom of the GD-70D4XAC-XXS for routing power and signal cables into the enclosure. Route a 3-wire power cable (18 AWG) and any relay wiring through one conduit hub, and 2-conductor shielded cable, or two wires in conduit through the other conduit hub to minimize crosstalk.

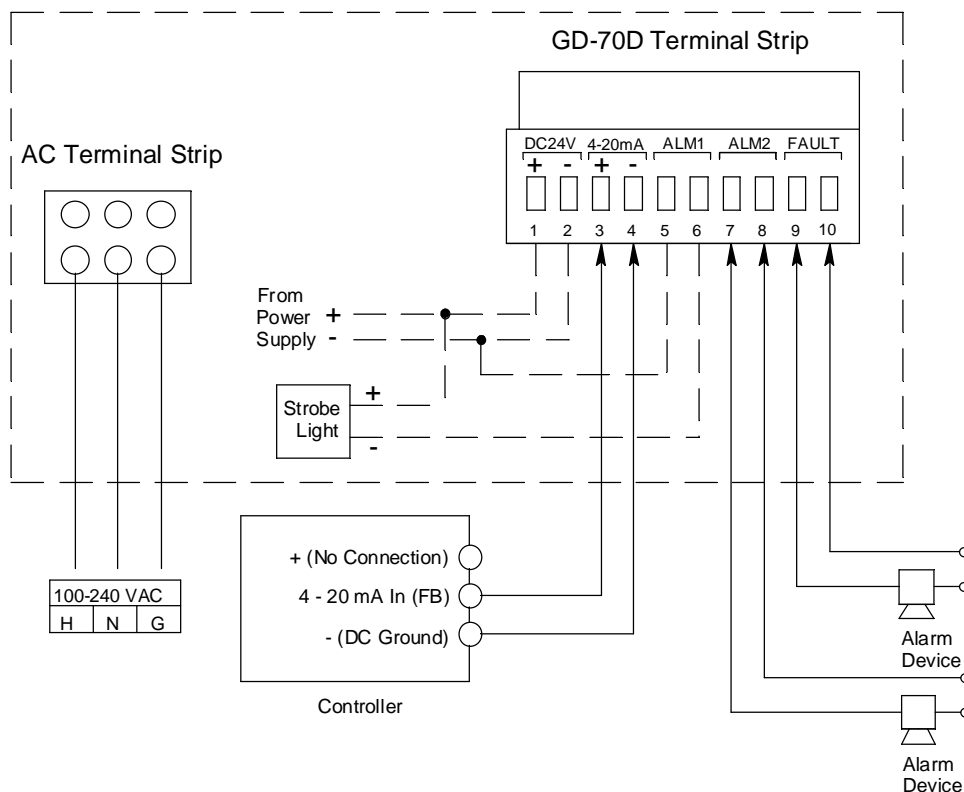


Figure 4: External Wiring

4. If shielded cable is used for controller wiring, connect the signal cable shield's drain wire to a chassis ground at the controller, but do not connect it at the GD-70D4XAC-XXS.

CAUTION: Leave the cable shield's drain wire insulated and disconnected at the GD-70D4XAC-XXS. You will connect the opposite end of the cable shield's drain wire at the controller.

CAUTION: At the controller, do not route power and GD-70D wiring through the same conduit hub. The power cable may disrupt the transmission of the GD-70D's signal to the controller.

Start Up

1. Turn on power (100 - 240 VAC) to the GD-70D4XAC-XXS.
2. See the GD-70D Operator's Manual for GD-70D startup instructions.

Operation

See the GD-70D Operator's Manual for an operational description of the GD-70D that is mounted inside the enclosure.

Maintenance/Calibration

See the GD-70D Operator's Manual for maintenance and calibration instructions. Use the inlet fitting on the NEMA 4X enclosure to apply gas instead of the fittings inside the enclosure on the GD-70D.

Parts List

Table 4 lists replacement parts and accessories for the GD-70D4XAC-XXS.

Table 2: Parts List

Part Number	Description
06-1273RK	1/4" O.D. x 1/8" I.D. Teflon PTFE tubing
17-4820RK	Sample fitting, 1/4" tube bulkhead union
18-0107RK	3/4" conduit hub
49-0108RK	Power Supply, 24 VDC
80-0226RK	Hydrophobic filter with push fittings for 1/4 inch O.D. tubing