

# **Model GD-K7D24X Supplement to the GD-K7D2 Operator's Manual**

***Part Number: 71-0086RK***

***Revision: 0***

***Released: April 22, 2003***

# 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.

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## Overview

This supplement describes the differences and additional features of the Model GD-K7D24X compared to the GD-K7D2. It also describes how to install, startup, maintain, and calibrate the GD-K7D24X.

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## Specifications

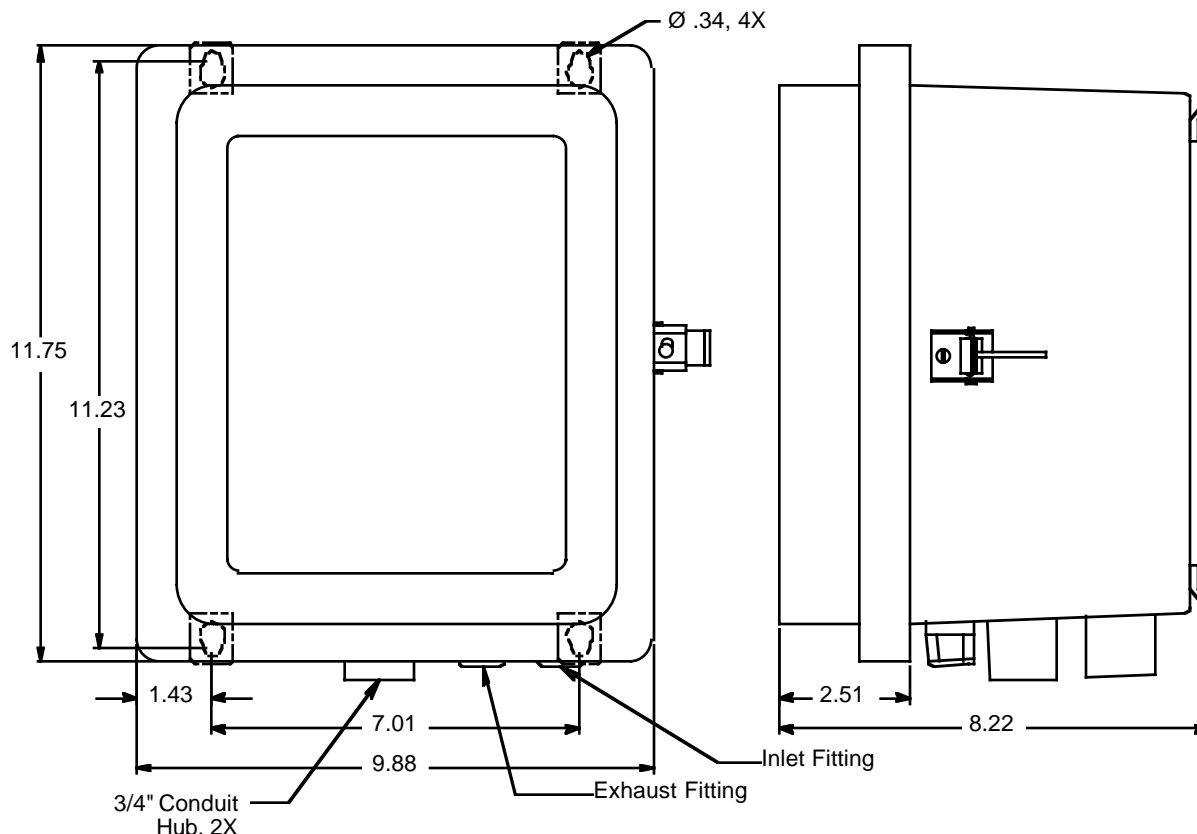
Table 1 lists specifications for the GD-K7D24X.

**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                      | See GD-K7D2 manual (115 VAC or 24 VDC version)                 |
| Signal Output                    | 4 to 20 mA                                                     |
| Response Time                    | 90% in 60 seconds                                              |
| Accuracy                         | ± 10% of fullscale                                             |
| Flow Rate                        | Approximately 0.5 liters/minute                                |
| Recommended Sample Tubing        | 1/4" O.D. x 1/8" I.D. Teflon PTFE                              |
| Recommended Sample Tubing Length | See Table 2 in the Installation section of the GD-K7D2 manual. |

## Description

This section describes the components of the GD-K7D24X. It consists of the enclosure and a GD-K7D2 mounted inside.



**Figure 1: Outline & Mounting Dimensions/Component Location**

A hydrophobic sample filter is also provided with the GD-K7D24X for installation near the inlet fitting. The filter scrubs particulates out of the sample stream and keeps water and many other liquids from entering the GD-K7D24X 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.

### 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-K7D2

The GD-K7D2 sample draw detector head is mounted to a plate inside the enclosure. The GD-K7D2 sample fittings are factory connected to the sample fittings on the NEMA 4X enclosure. There are two types of GD-K7D2's that can be mounted in the enclosure: a 24VDC version and a 115 VAC version. See the GD-K7D2 Operator's Manual for a complete description of the GD-K7D2.

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## Installation

This section describes how to install the GD-K7D24X at the monitoring site.

### Mounting the GD-K7D24X

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-K7D24X 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-K7D24X. Also make sure there is sufficient room to perform start-up, maintenance, and calibration procedures.
  - Select a site near the sampling area. The GD-K7D24X is designed to detect a variety of toxic gases many of which are easily absorbed in sample tubing. See Table 2 from the GD-K7D2 Operator's Manual for appropriate tubing lengths. Teflon PTFE tubing is recommended.
  - Use four 1/4" screws through the mounting feet to mount the GD-K7D24X to a vertical surface. See Figure 1 for the mounting dimensions.

### Connecting Sample Lines to the GD-K7D24X

1. Install a short piece, up to 8" long, of 1/4" O.D. x 1/8" I.D. Teflon PTFE sample tubing to the inlet fitting.
2. Connect the sample filter to the tube. The sample filter has flexible tube stubs on each end. Push one end onto the sample tube.
3. Connect another length of sample tubing to the other side of the sample filter and route it to the sampling area. Be sure not to exceed the maximum sample tubing length listed in Table 2 of the GD-K7D2 Operator's Manual.

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

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4. 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-K7D2 to a Controller

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**WARNING:** *Always verify that power to the GD-K7D24X and to the controller are off and that the controller's and GD-K7D24X's power switches are in the off position before making wiring connections or adjustments.*

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1. Turn off power to the controller and the GD-K7D24X.

2. Place the controller's and GD-K7D24X's power switches in the OFF position.
3. Use the conduit hubs at the bottom of the GD-K7D24X for routing shielded cable into the enclosure and then route the cable through the cable bushing on the GD-K7D2. See the Installation sections of the GD-K7D2 Operator's Manual for wiring connections between the GD-K7D2 and the controller.

Two conduit hubs are provided on the enclosure. One of them may be used for AC power if a 115 VAC GD-K7D2 is installed. Plug any unused conduit hub with a 3/4" conduit plug.

4. Connect the cable shield's drain wire to a chassis ground at the controller, but do not connected it at the GD-K7D24X.

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**CAUTION:** *Leave the cable shield's drain wire insulated and disconnected at the GD-K7D24X. You will connect the opposite end of the cable shield's drain wire at the controller.*

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**CAUTION:** *At the controller, do not route power and GD-K7D24X wiring through the same conduit hub. The power cable may disrupt the transmission of the GD-K7D2's signal to the controller.*

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## Start Up

See the GD-K7D2 Operator's Manual for GD-K7D2 startup instructions.

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## Operation

See the GD-K7D2 Operator's Manual for an operational description of the GD-K7D2 that is mounted inside the enclosure.

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## Maintenance/Calibration

See the GD-K7D2 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-K7D2.

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## Parts List

Table 4 lists replacement parts and accessories for the GD-K7D2.

**Table 2: Parts List**

| Part Number | Description                              |
|-------------|------------------------------------------|
| 06-1273RK   | 1/4" O.D. x 1/8" I.D. Teflon PTFE tubing |

**Table 2: Parts List**

| <b>Part Number</b> | <b>Description</b>                       |
|--------------------|------------------------------------------|
| 17-4820RK          | Sample fitting, 1/4" tube bulkhead union |
| 18-0107RK          | 3/4" conduit hub                         |