



INTELLIGENT GAS DETECTOR

Gas Detection For Life

GD-70D Series



Features

- Monitor combustibles, O₂, and a wide range of toxics
- Plug and play intelligent sensors retain calibration and sensor data
- Common platform (main unit / sensor / pump) for all detection methods
- Universal main unit (all sensor types)
- Multifunctional sensor unit (new Intelligent sensor)
- No internal tubing (main unit) / No coil (pump)
- Front access, no tools required, easy sensor and pump replacement
- Large size LCD screen
- Various communication methods available (4-20mA, LonWorks, and PoE)
- Minimal maintenance cost through enhanced troubleshooting firmware functions
- Small mounting space
- Environmentally friendly
- Wide variety of sensors available

The new Model GD-70D smart gas detection transmitter series sets a new standard for performance, flexibility, and versatility. The GD-70D sample-draw transmitter offers an array of sensor technologies unmatched in the industry, including unique offerings, such as our hydrogen-specific or LEL versions.

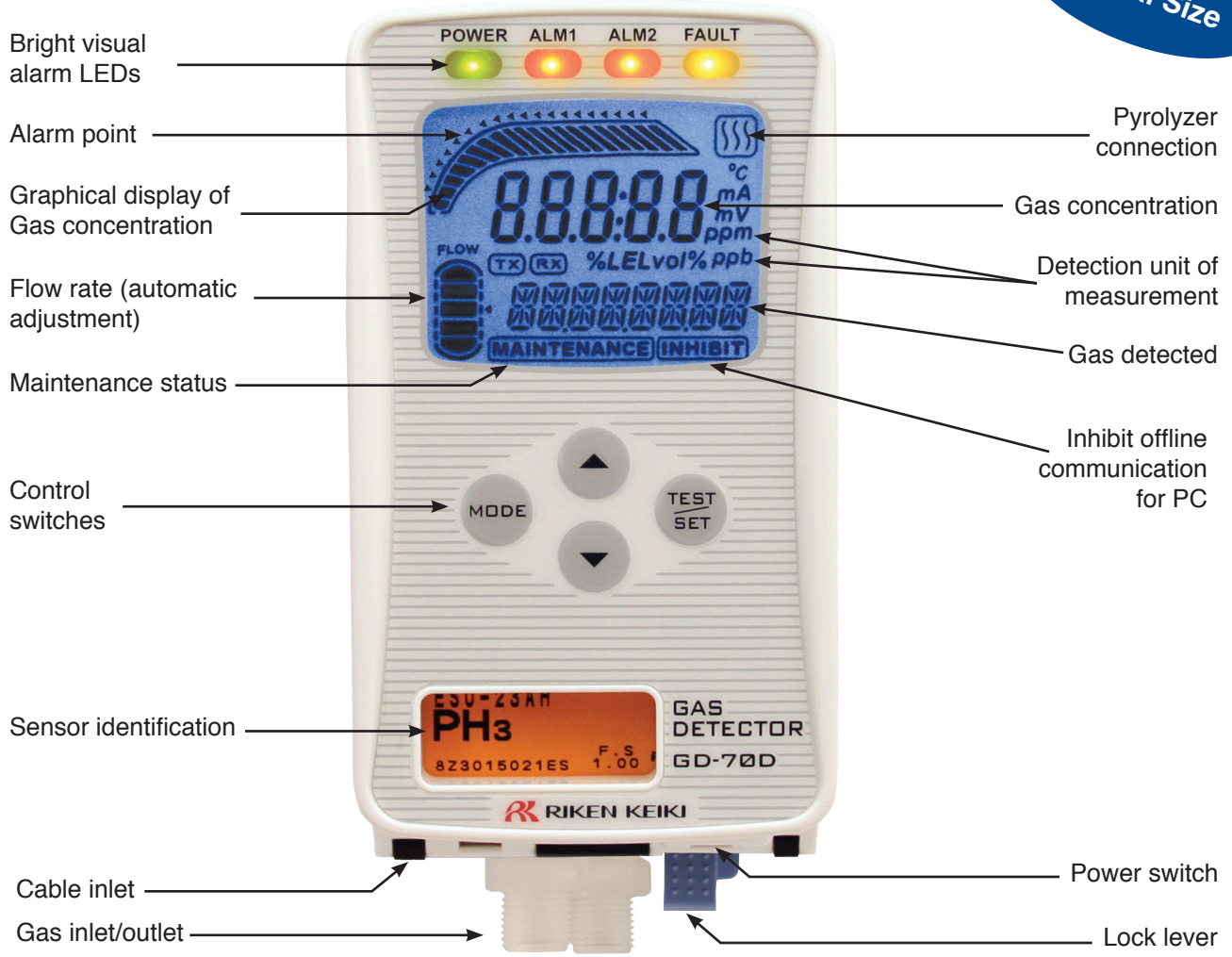
The long life high capacity pump and wide variety of sensing elements are replaceable in a few seconds, with no tools required! The smart sensors retain all calibration and sensor-specific data in non-volatile memory, so sensors can be hot-swapped in the field with no programming required. The sensors also retain calibration information, which means they can be conveniently calibrated separate from the transmitter, avoiding transport of calibration gases to field locations. The GD-70D firmware automatically corrects for long-term zero and span “drift” minimizing maintenance and maximizing reliability.

The GD-70D can be used as a stand-alone device, offering a number of communication protocols to existing PLC systems, or can be integrated with RKI’s Beacon series of single and multi-channel controllers.

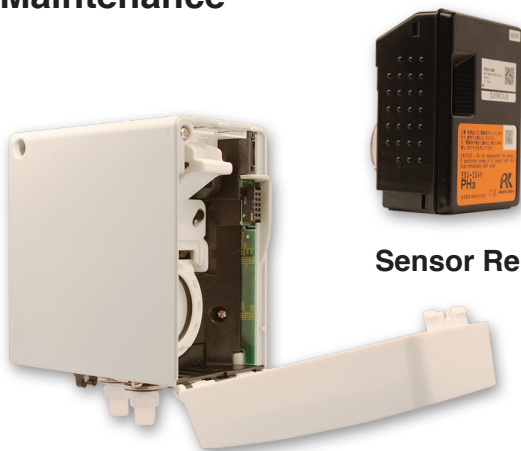
All GD-70D transmitters include a large, easy to read integral LCD display, tri-color bar graph for visual notification of alarm status, programmable low and high alarm relays, and fault relay. Pump flow is self-tuning for maintenance-free operation. Because all GD-70D base units are identical, sensors can be interchanged with no programming or tools required, resulting in maximum flexibility to the user. NEMA 4X 115 VAC versions available.

GD-70D Series

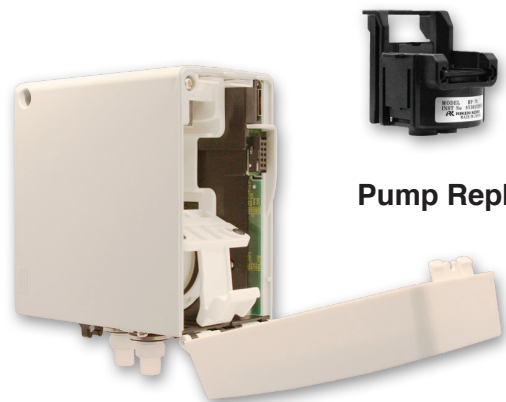
Actual Size



Tool Free Maintenance



Sensor Replacement



Pump Replacement

Specifications subject to change without notice.

| MAIN UNIT | | | |
|----------------------------|--|-----------------------------|---|
| Model | GD-70D | GD-70D-NT | GD-70D-ET |
| Communication | 4-20mA DC | DC power line communication | PoE method |
| Detection principle | Different type depending upon sensor unit and detectable gas (see table) | | |
| Sampling method | Sample draw (auto-adjustment of flow rate) 0.5 L / min +/-10% | | |
| Display | <ul style="list-style-type: none"> • Large LCD display (white backlight) • Flow rate, communication status, pyrolyzer status, gas detected | | <ul style="list-style-type: none"> • Gas concentration • Error code, content of error |
| Gas alarms | Two alarm levels: 1st alarm - Red | 2nd alarm - Red | Fault alarm - Yellow |
| External output | 1st, 2nd, and trouble alarms: Relay contact output for each alarm | | |
| Self diagnostic function | System failure, sensor failure, flow failure, communication error NT / ET / Analog | | |
| Datalogging | Event history, alarm history, calibration history. Alarm trend (180 sec before / after 1st alarm) | | |
| Operation temp. & humidity | 0 ~ 40°C, 30 ~ 70% RH (non-condensing) | | |
| Operating settings | All operational settings are user adjustable through front panel | | |
| Power requirements | DC 24V+/- 10%, approx 1.5W (Max 4W including sensor unit) Note: Approx. 2.5W (Max 5W) with SGU sensor unit | | PoE standard arrangement |
| Dimensions | 2.8"W x 4.7"H x 5.9"D (70W x 120H x 150Dmm) | | |
| Weight | Approx. 0.9kg (2.0lbs), including sensor unit | | |
| Mounting | Wall-mounting base plate by 2 or 3 screws | | |
| Sampling tubing | 4 x 6mm PTFE tubing recommended. Tube fittings provided as standard accessories | | |
| Bushing | Cable type varies depending on communication method (Cable bushing optional) | | |

| SENSOR UNIT | | | | |
|----------------------------------|---|---|---------------------|--|
| Model | ESU | SGU | SSU | NCU |
| Detection principle | Electrochemical cell | Semiconductor | Pyrolysis-particle | Catalytic combustion |
| Gas detected and detection range | Refer to list of detectable gases | 0-2000ppm H ₂ , CH ₄ , or CH ₂ F ₂ (R-32) in air and others | 0-15ppm TEOS in air | 0-100% LEL H ₂ , CH ₄ , and others |
| Self diagnosis function | Sensor trouble, system failure | | | |
| Date logging function | Event history, alarm history, calibration history, Alarm trend (60 sec. before/after 1st alarm) | | | |

| PYROLYZER UNIT | |
|----------------------------|--|
| Model | PLU-70 |
| Application | NF ₃ / TEOS gases detected in air |
| Usage | Used by connecting to "GD-70D" (Main unit) |
| Power Lamp | LED (Green color) Normal: Light-on Warming-up: Flashing at every 1 sec interval Trouble: Flashing at every 0.2 sec interval |
| Self-diagnostic function | Pyrolyzer unit trouble Fan trouble System trouble |
| Operating temp. & humidity | 0-40° C, 30-70% RH (non-condensing) |
| Operational settings | All operational settings are user adjustable through front panel |
| Power requirements | DC 24V+/- 10%, approx. 25W (max) |
| Dimensions | 2.8"W x 4.7"H x 5.9"D (70W x 120H x 150Dmm) |
| Weight | Approx. 1.2kg (2.6lbs) |
| Mounting | Wall-mounting base plate by 2 or 3 screws |
| Sampling | 4x6mm PTFE tubing recommended. Tube fittings provided as standard accessories |
| Bushing | 1.25sq 2 core cable for power supply DC24V (Cable bushing optional) |

GD-70D Series

| ESU Gas Detected | | Detection Range | ACGIH TLV-TWA | Part # |
|--------------------------|-------------|------------------------------------|---------------|-----------------------------|
| Ammonia | NH3 | 75 ppm | 25 ppm | GD-70D-NH3 |
| Arsine | AsH3 | 0.2 ppm | 5 ppb | GD-70D-ASH3 |
| Boron Trichloride | BCl3 | 15 ppm | | GD-70D-BCl3 |
| Boron Trifluoride | BF3 | 9 ppm | 0.1 ppm | GD-70D-BF3 |
| Bromine | BR2 | 1 ppm | 0.1 ppm | GD-70D-BR2 |
| Carbon Monoxide | CO | 75 ppm * 150 ppm * 300 ppm * | 25 ppm | GD-70D-CO-01/02/03/11/12/13 |
| Chlorine | Cl2 | 3 ppm 1.5 ppm * | 0.5 ppm | GD-70D-Cl2 |
| Chlorine Trifluoride | ClF3 | 0.6 ppm | (C) 0.1 ppm | GD-70D-ClF3-A |
| Diborane | B2H6 | 0.3 ppm | 0.1 ppm | GD-70D-B2H6 |
| Dichlorosilane | DCS | 15 ppm | | GD-70D-DCS |
| Disilane | Si2H6 | 15 ppm | (C) 2 ppm | GD-70D-Si2H6 |
| Dimethylamine | (CH3)2NH | 15 ppm | 5 ppm | GD-70D-DMA |
| Diethylamine | (CH3CH2)2NH | 15 ppm | 5 ppm | GD-70D-DEA |
| Fluorine | F2 | 3 ppm | 1 ppm | GD-70D-F2 |
| Germane | GeH4 | 0.8 ppm | (C) 2 ppm | GD-70D-GeH4 |
| Hydrogen Bromide | HBr | 6 ppm, 9 ppm * | (C) 2 ppm | GD-70D-HBR-06/-09 |
| Hydrogen Chloride | HCl | 6 ppm, 15 ppm * | (C) 2 ppm | GD-70D-HCL-06E/15E |
| Hydrogen Cyanide | HCN | 15 ppm | 1 ppm | GD-70D-HCN |
| Hydrogen Fluoride | HF | 9 ppm, 3 ppm * | 0.5 ppm | GD-70D-HF-03/-09 |
| Hydrogen Peroxide | H2O2 | 3 ppm | | GD-70D-H2O2 |
| Hydrogen Selenide | H2Se | 0.2 ppm | 0.05 ppm | GD-70D-H2Se |
| Hydrogen Sulfide | H2S | 1 ppm 30 ppm | 1 ppm | GD-70D-H2S-01/-30 |
| Methylamine | CH3NH2 | 15 ppm | 5 ppm | GD-70D-CH3NH2 |
| Nitric Oxide | NO | 100 ppm | 25 ppm | GD-70D-NO |
| Nitrogen Dioxide | NO2 | 9 ppm 15 ppm | 3 ppm | GD-70D-NO2-09 |
| Nitrogen Tetraoxide | N2O4 | 15 ppm | | GD-70D-N2O4 |
| Nitrogen Trifluoride | NF3 | 30 ppm | 10 ppm | GD-70D-NF3 |
| Oxygen | O2 | 25% Vol. | — | GD-70D-OXY-EC |
| Ozone | O3 | 0.6 ppm | 0.1 ppm | GD-70D-O3 |
| Phosphine | PH3 | 1 ppm | 0.3 ppm | GD-70D-PH3-AH |
| Silane | SiH4 | 15 ppm | 5 ppm | GD-70D-SiH4-AH/DH |
| Silicon Tetrachloride | SiCl4 | 15 ppm | | GD-70D-SiCl4 |
| Silicon Tetrafluoride | SiF4 | 9 ppm | | GD-70D-SiF4 |
| Sulfur Dioxide | SO2 | 6 ppm | — | GD-70D-SO2 |
| Sulfur Tetrafluoride | SF4 | 9 ppm | | GD-70D-SF4 |
| Tetraethyl Orthosilicate | TEOS | 15 ppm | | GD-70D-TEOS |
| Trichlorosilane | TCS | 15 ppm | | GD-70D-TCS |
| Trimethylamine | (CH3)3N | 15 ppm | 5 ppm | GD-70D-TMA |

| SGU Gas Detected | | Detection Range | ACGIH TLV-TWA | Part # |
|--------------------------|------------|--|-------------------|---|
| Carbonyl Sulfide | COS | 2,000 ppm | — | GD-70D-MCOS |
| Dichloroethene | C2H2CL2 | 600 ppm | 200 ppm | GD-70D-MC2H2Cl2 |
| Dichlorethylene | DCE | 600 ppm | | GD-70D-MDCE |
| Dichloromethane | CH2CL2 | 2,000 ppm | 50 ppm | GD-70D-MDCM |
| Difluoromethane | R-32 | 2,000 ppm | 1,000 ppm | GD-70D-MR32 |
| Fluoro Methane | R-41 | 2,000 ppm | 1,000 ppm | GD-70D-MR41 |
| Hydrogen | H2 | 500 ppm * 1,000 ppm * 2,000 ppm 2% Vol. | — | GD-70D-MH2-S500 GD-70D-MH2-S1K GD-70D-MH2-S2K GD-70D-MH2-20K |
| Isopropyl Alcohol | CH3CHOHCH3 | 2,000 ppm | 200 ppm | GD-70D-MIPA-2K |
| Methane | CH4 | 2,000 ppm 5,000 ppm * | — | GD-70D-MCH4-2K GD-70D-MCH4-5K GD-70D-MCH4-20K GD-70D-MCH3OH-1 GD-70D-MCH3OH-2 |
| Methyl Alcohol | CH3OH | 1,000 ppm 2,000 ppm * | 200 ppm | GD-70D-MCH3CH |
| Propane | CH3H8 | 2,000 ppm 5,000 ppm * | 1,000 ppm | GD-70D-MC3H8-2K GD-70D-MC3H8-2K |
| NCU Gas Detected | | Detection Range | LEL % Vol. Levels | |
| Hydrogen | H2 | 100% LEL | — | GD-70D-LEL-H2 |
| Hydrogen | H2 | 2% Vol. | — | GD-70D-H2-20K |
| Isobutane | i-C4H10 | 100% LEL | — | GD-70D-ISOB |
| Methane | CH4 | 100% LEL | — | GD-70D-LEL-CH4 |
| Methane | CH4 | 2% Vol. | — | GD-70D-CH4-20K |
| SSU Gas Detected | | Detection Range | ACGIH TLV-TWA | |
| Trimethyl Silane | TMS | 15 ppm | — | GD-70D-TMS |
| Trimethoxysilane | TRIMOS | 15 ppm | — | GD-70D-TRIMOS |
| Tetraethyl Orthosilicate | TEOS | 15 ppm | 10 ppm | GD-70D-TEOS |

Sensor accuracy= +/- 10% of reading or +/- 5% of full scale, whichever is greater.

* Special order for non-standard range

