

INTELLIGENT GAS DETECTOR

GD-70D Series

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.

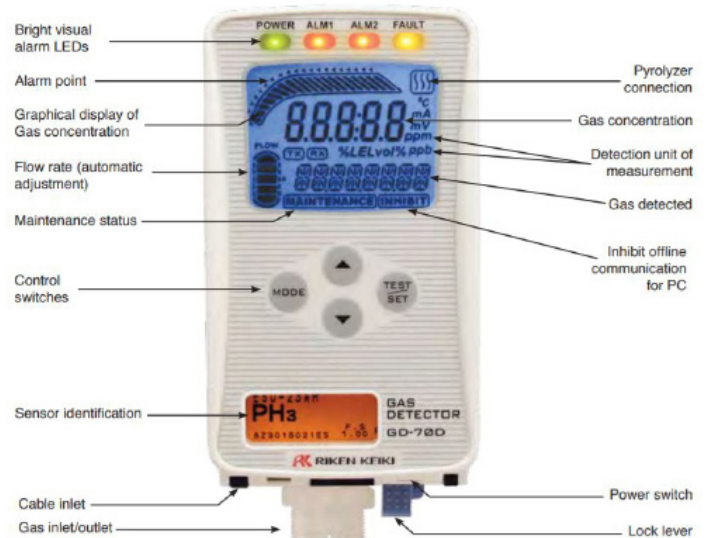
The long life high capacity pump and wide variety of sensing elements are replaceable in a few seconds, with no tools required! The smart sensors retain all calibration and sensor-specific data in non-volatile memory, so sensors can be hot-swapped in the field with no programming required. The sensors 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.

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



Tool Free Maintenance



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	• Large LCD display (white backlight) • Gas concentration • Flow rate, communication status, pyrolyzer status, gas detected • 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	OSU	NCU
Detection principle	Electrochemical cell	Semiconductor	Pyrolysis-particle	Galvanic cell	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	0-25% O ₂ 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)

ESU Gas Detected	Detection Range	ACGIH TLV-TWA
Ammonia NH3	75 ppm	25 ppm
Arsine AsH3	0.2 ppm	5 ppb
Boron Trichloride BCl3	15 ppm	
Boron Trifluoride BF3	9 ppm	0.1 ppm
Bromine BR2	1 ppm	0.1 ppm
Carbon Monoxide CO	75 ppm * 150 ppm 300 ppm *	25 ppm
Chlorine Cl2	3 ppm 1.5 ppm *	0.5 ppm
Chlorine Trifluoride ClF3	0.6 ppm	(C) 0.1 ppm
Diborane B2H6	0.3 ppm	0.1 ppm
Dichlorosilane DCS	15 ppm	
Disilane Si2H6	15 ppm	(C) 2 ppm
Dimethylamine (CH3)2NH	15 ppm	5 ppm
Diethylamine (CH3CH2)2NH	15 ppm	5 ppm
Fluorine F2	3 ppm	1 ppm
Germane GeH4	0.8 ppm	(C) 2 ppm
Hydrogen Bromide HBr	6 ppm, 9 ppm *	(C) 2 ppm
Hydrogen Chloride HCl	6 ppm, 15 ppm *	(C) 2 ppm
Hydrogen Cyanide HCN	15 ppm	
Hydrogen Fluoride HF	9 ppm, 3 ppm *	0.5 ppm
Hydrogen Selenide H2Se	0.2 ppm	0.05 ppm
Hydrogen Sulfide H2S	1 ppm 30 ppm	1 ppm
Methylamine CH3NH2	15 ppm	5 ppm
Nitric Oxide NO	100 ppm	25 ppm
Nitrogen Dioxide NO2	9 ppm 15 ppm	3 ppm
Nitrogen Tetraoxide N2O4	15 ppm	
Nitrogen Trifluoride NF3	30 ppm	10 ppm
Ozone O3	0.6 ppm	0.1 ppm
Phosphine PH3	1 ppm	0.3 ppm
Silane SiH4	15 ppm	5 ppm
Silicon Tetrachloride SiCl4	15 ppm	
Silicon Tetrafluoride SiF4	9 ppm	
Sulfur Dioxide SO2	6 ppm	—
Sulfur Tetrafluoride SF4	9 ppm	
Tetraethyl Orthosilicate TEOS	15 ppm	
trichlorosilane TCS	15 ppm	
Trimethylamine (CH3)3N	15 ppm	5 ppm
Tungsten Hexafluoride WF6	9 ppm	

SGU Gas Detected	Detection Range	ACGIH TLV-TWA
Carbonyl Sulfide COS	2,000 ppm	—
Dichloroethene C2H2CL2	600 ppm	200 ppm
Dichlorethylene DCE	600 ppm	
Dichloromethane CH2CL2	2,000 ppm	50 ppm
Difluoromethane R-32	2,000 ppm	1,000 ppm
Fluoro Methane R-41	2,000 ppm	1,000 ppm
Hydrogen H2	500 ppm * 1,000 ppm * 2,000 ppm 2% Vol.	—
Isopropyl Alcohol CH3CHOHCH3	2,000 ppm	200 ppm
Methane CH4	2,000 ppm 5,000 ppm *	—
Methyl Alcohol CH3OH	1,000 ppm 2,000 ppm *	200 ppm
Propane CH3H8	2,000 ppm 5,000 ppm *	1,000 ppm
NCU Gas Detected	Detection Range	LEL % Vol. Levels
Hydrogen H2	100% LEL	—
Hydrogen H2	2% Vol.	—
Isobutane i-C4H10	100% LEL	—
Methane CH4	100% LEL	—
Methane CH4	2% Vol	—
SSU Gas Detected	Detection Range	ACGIH TLV-TWA
Trimethyl Silane TMS	15 ppm	—
Trimethoxysilane TRIMOS	15 ppm	—
Tetraethyl Orthosilicate TEOS	15 ppm	10 ppm
OSU Gas Detected	Detection Range	ACGIH TLV-TWA
Oxygen O2	25% Vol.	—