



# EXPLOSION PROOF TRANSMITTER

Gas Detection For Life

MODEL SD-1 SERIES



## Features

- **Wide range of detectable gases**
  - % LEL Combustibles, catalytic
  - % LEL Combustibles & CO<sub>2</sub>, IR
  - H<sub>2</sub>S, CO, & O<sub>2</sub>
  - PPM for acrylonitrile, hydrogen, ethylene oxide, n-methyl pyrrolidone, methylene chloride, and many others
- **Sensor types include**
  - Catalytic, Galvanic Cell, MOS, IR, & Electrochemical
- **Direct digital display of gas readings**
- **HART Communication protocol**
  - HART over 4-20mA or 4-20mA linear output
- **Available with SIL2 approval (IR, EC, OX versions)**
- **Easy maintenance using a magnetic key**
- **Self-diagnosis by microprocessor**
- **Low power operation (Maximum: 3W)**
- **Explosion proof: ATEX, IECEx, ExdIICT5**

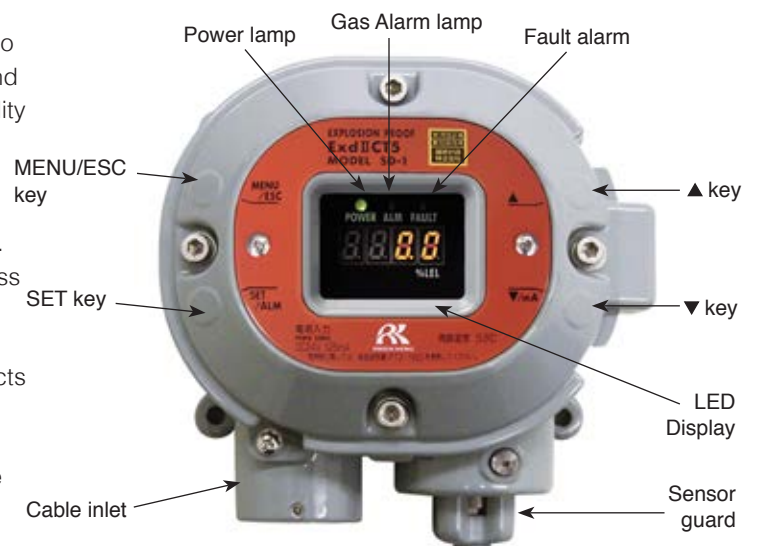
## Applications

- LNG Terminal
- Petrochemical/Chemical plants
- Power plant
- Utilities
- Iron and steel works



RKI Instrument's model SD-1 Series smart combustible gas, toxic gas, oxygen, and organic vapor detector/transmitter is a robust and reliable explosion proof design for detecting LEL and ppm levels of hazardous atmospheres. In addition to measuring the common % LEL levels of methane, hexane and isobutane, for example, the SD-1 Series also has the capability of measuring a wide variety of toxic organic compounds in a PPM range such as acrylonitrile, ethylene oxide, n-methyl pyrrolidone, methylene chloride and many others. This gives the SD-1 Series a unique niche in RKI's gas detector line-up. The SD-1 has an ATEX/IECEX approval for the explosion class ExdIICT5 and has an IP-65/67 ingress protection rating.






The SD-1 has a 4-20mA signal output as well as relay contacts for interfacing with other control systems or monitoring facilities. **All SD-1 types are also available with HART communication instead of 4-20mA relay. SIL2 is available for the IR, EC and OX types.** In facilitating non-intrusive conditions in hazardous atmospheres, the SD-1 can be calibrated and it's menus navigated with magnetic switches and a magnetic key.



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World Leader In Gas Detection & Sensor Technology  
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# MODEL SD-1 SERIES

<b>Model</b>	SD-1GP 	SD-1RI 	SD-1GH 	SD-1EC 	SD-10X 
<b>Detection principle</b>	Catalytic	Infrared	Semiconductor	Electrochemical	Galvanic Cell
<b>Measuring gas</b>	Variety of hydrocarbons		CO2	CO/H2S	Oxygen
<b>Measuring range</b>	0 -100% LEL		0-10,000 ppm 0-20% vol	See chart below	CO: 0-75 ppm H2S: 0-30 ppm 0 -25% vol
<b>Alarm setting</b>	2 programmable alarm set points/increasing/decreasing/latching/ self resetting/on delays/off delays/energized/de-energized				
<b>Alarm contacts</b>	Normally open or normally closed				
<b>Sampling method</b>	Diffusion (Flow adapter and air aspiration available)				
<b>Display</b>	4 digit Digital LED				
<b>Output</b>	4-20 mA or HART (optional)				
<b>Relay</b>	1 Relay with 4-20 mA versions or No relay with HART versions				
<b>Contact capacity</b>	30 VDC 0.5A or 120 VAC 0.5A (load resistance)				
<b>Fail alert Self diagnosis</b>	Circuit failure / Sensor failure				
<b>Fail alert display</b>	Fail lamp (Yellow)				
<b>Power source</b>	24VDC (17VDC ~ 26.4VDC)				
<b>Operating Temperature &amp; humidity</b>	-4 ~ + 140°F / below 95% RH (non condensing) [-20 ~ + 60°C], (SD-1EC Below 80% RH)				
<b>Dimension &amp; Weight</b>	5.8"(W) x 6.3"(H) x 3.5" (D) , Approx. 4.4 lbs [148(W) x 161(H) x 88(D) mm, Approx. 2.0kg]				
<b>Approvals</b> <small>** Applied to SD-1GP for H2, CH4, i-C4H10, C3H8</small>	Exd II CT5,ATEX **	CML 15ATEX1034 IECEX, SIL2	Exd II CT5,ATEX, IECEX	DEKRA 13ATEX0035 IECEX DEK 13.0024X, SIL2	

## SD-1GH Detectable Gases & Measuring Ranges

Detection Gas	Formula	Full Scale Ranges		TLV-TWA (ppm)	LEL	Detection Gas	Formula	Full Scale Ranges		TLV-TWA (ppm)	LEL
		Low (ppm)	High (ppm)					Low (ppm)	High (ppm)		
Acetic acid	C2H4O2	500	3000	10	4.0	R-12	CHCIF2	300	5000	1000	-
Acetone	C3H6O	100	10000	500	2.15	Hydrogen	H2	200	10000	-	4.0
Acetylene	C2H2	200	3000	-	1.5	Hydrogen Specific	H2	200	2000	-	4.0
Acrylonitrile	C3H3N	500	1000	2	2.8	Hydrogen sulfide	H2S	20	100	1	-
Ammonia	NH3	500	1000	25	15	Isopropyl alcohol	C3H8O	300	5000	200	2.0
Benzene	C6H6	200	2000	0.5	1.2	Methane	CH4	2000	100%LEL	-	5.0(CH4)
Buthylacetate	C6H12O2	100	5000	150	1.4	Propane	C3H8	2000	100%LEL	-	2.0(C3H8)
Buthylacrylate	C7H12O2	50	1000	2	1.5	Methyl alcohol	CH3OH	100	5000	200	5.5
n-Buthyl alcohol	C4H10O	100	5000	400	1.4	Methyl bromide	CH3Br	200	1000	5	8.6
Chloroform	CHCL3	200	5000	10	-	Methyl ethyl ketone	C4H8O	30	5000	200	1.8
Cyclohexane	C6H12	200	5000	100	1.3	Methyl isobutyl ketone	C6H12O	50	500	50	1.2
Cyclohexanone	C6H10O	50	1000	20	1.1	Methylene choride	CH2Cl2	500	5000	50	13.0
2-ethoxyethyl acetate	C6H12O3	100	3000	5	1.7	n-Hexane	n-C6H14	100	5000	50	1.2
Ethyl acetate	C4H8O2	100	5000	20	2.1	Tetrahydrofuran	C4H8O	20	3000	100	1.2
Ethyl alcohol	C2H5OH	100	5000	1000	3.3	Toluene	C7H8	20	3000	100	1.2
Ethylene	C2H4	200	5000	200	2.7	Trichloroethylene	C2HCl3	300	5000	50	7.9
Ethylene oxide	C2H4O	100	1000	1	3.0	Vinyl chloride	C2H3Cl	200	3000	5	3.8
R-11	CCl3F	2000	5000	1000	-	Xylene	C8H10	100	2000	100	1.0



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