



RKI Analytical
Instruments
The Analyser People

SD-1

Smart Gas Detector



Features

- Detection of toxic and combustible gases
- Longlife RKI sensors
- Built-in relay
- 4-20mA linear output signal
- Self diagnosis + One-Man-Calibration
- Flameproof enclosure Exd II CT5, IP65
- ATEX approved



RIKEN KEIKI
For a Safer World

Description

The Model SD-1 is a smart gas detector head that uses a state of the art instrument housed in a flameproof enclosure. It is compact in size, weighing only 1.9kg. Model SD-1 detects combustible gases (CH₄) or general hydrocarbons (HC) using the catalytic combustion type method, SD-1GH using a semiconductor sensor for a wide range of toxic gases detecting in ppm. The SD-1 can be installed and wired up easily without any additional accessories needed as compared to a conventional one. The output is standard 4-20mA signal, using a 3-wire type analogue transmission. Calibration adjustments are made through the control housing window using the included magnetic control key. This keeps the explosion-proof housing shut during normal adjustments, allowing for greater flexibility in maintenance scheduling.

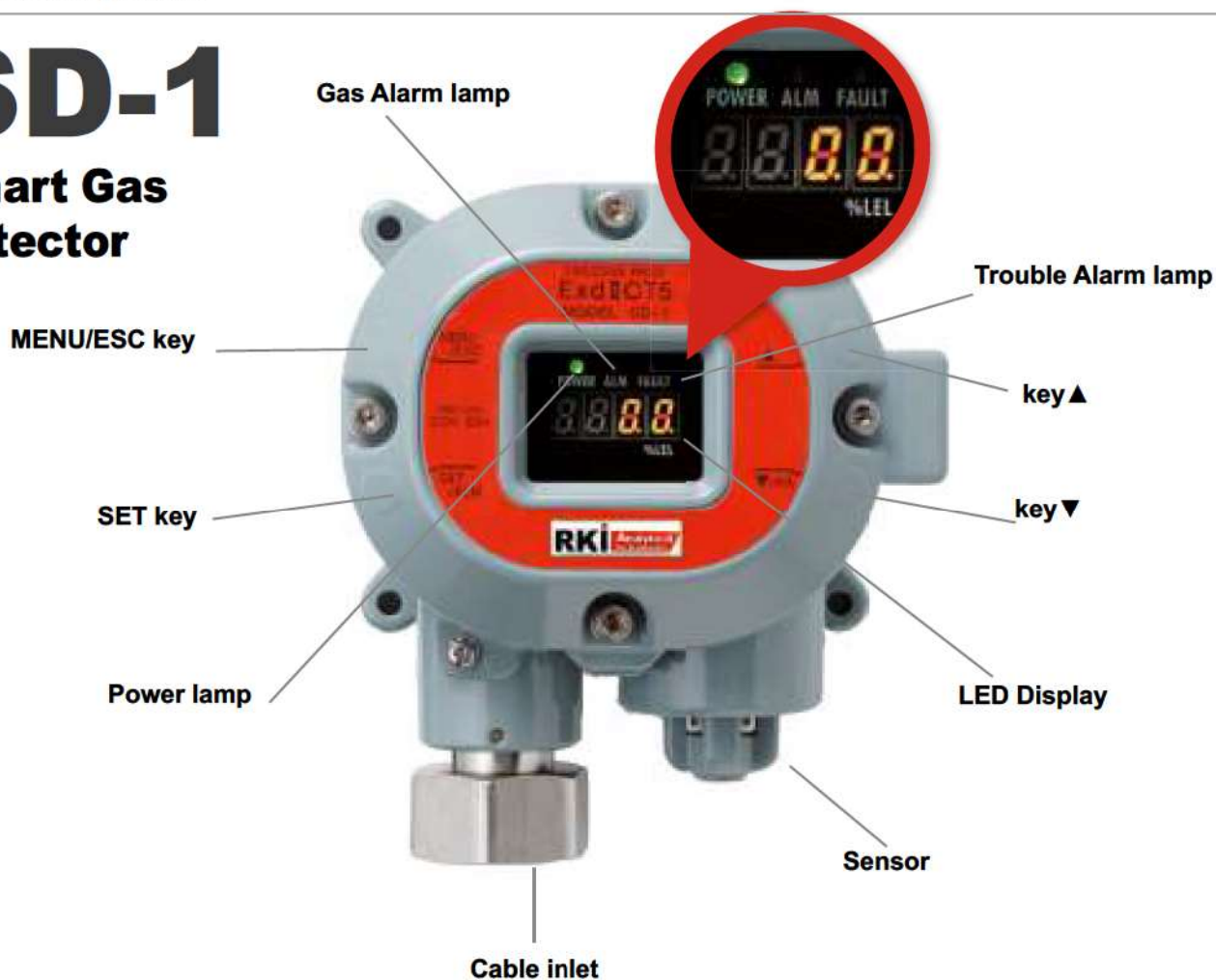
To meet many special sampling conditions that are encountered in different applications and different environments a sample drawing type detector head (SD-1DGH) including air aspiration type (SD-1DGH-AS) is recommended for applications where diffusion detection technique may not be suitable. To protect full functionality of SD-1 detector RKI offers the TOP Service Program for complete maintenance systems in worldwide supply network.

Applications

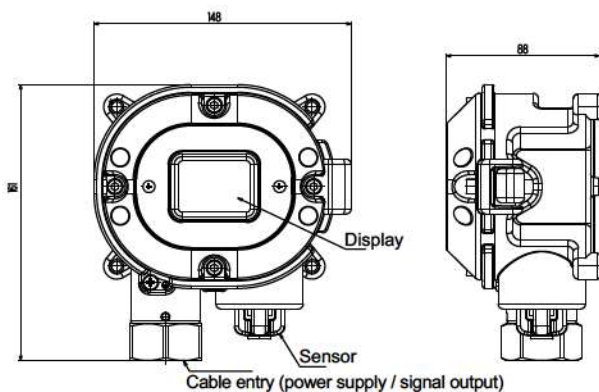
- Chemical plants
- LNG Terminal
- Petro-refinery, petrochemical plants
- Power station, gas utilities
- Iron and steel works

SD-1

Smart Gas Detector



SD-1 Outer Dimensions



Simply magnetic control key operation

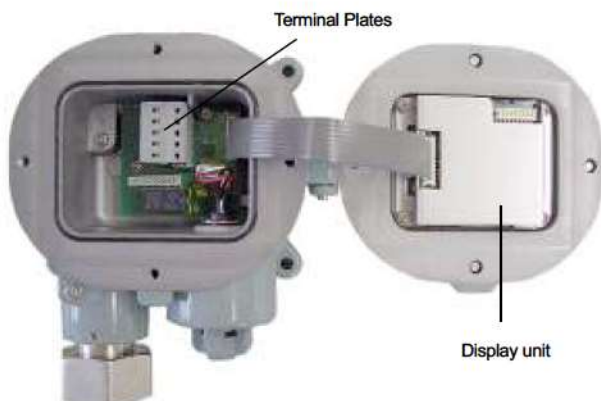


Measuring Gases

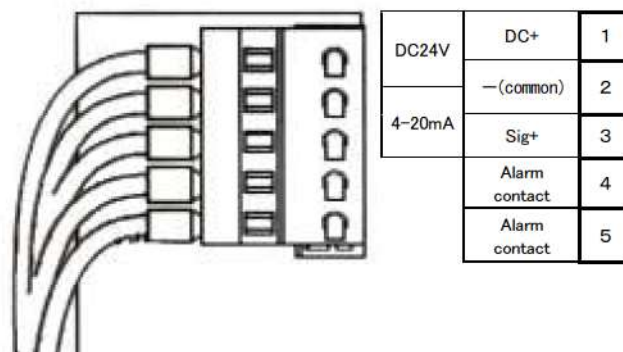
Detection gas	Formula	Detection range	LEL
Acetic acid	$C_2H_4O_2$	0-3000ppm	4,0
Acetone	C_3H_6O	0-10000ppm	2,15
Acetylene	C_2H_2	0-3000ppm	1,5
Acrylonitrile	C_3H_3N	0-1000ppm	2,8
Benzene	C_6H_6	0-2000ppm	1,2
Buthyl acetate	$C_6H_{12}O_2$	0-5000ppm	1,4
Buthyl acrylate	$C_7H_{12}O_2$	0-1000ppm	1,5
n-Buthyl alcohol	$C_4H_{10}O$	0-5000ppm	1,4
Chloroform	$CHCl_3$	0-5000ppm	
Cyclohexane	C_6H_{12}	0-5000ppm	1,3
Cyclohexanone	$C_6H_{10}O$	0-1000ppm	1,1
2-ethoxyethyl acetate	$C_6H_{12}O_3$	0-3000ppm	1,7
Ethyl acetate	$C_4H_8O_2$	0-5000ppm	2,1
Ethyl alcohol	C_2H_5OH	0-5000ppm	3,3
Ethylene	C_2H_4	0-5000ppm	2,7
Ethylene oxide	C_2H_4O	0-1000ppm	3,0
Flon 11	CCl_3F	0-5000ppm	
Flon 12	$CHClF_2$	0-5000ppm	
Hydrogen	H_2	0-10000ppm	4,0
		0-100%LEL	4,0
Hydrogen Sulfide	H_2S	0-100ppm	
Isopropyl alcohol	IPA	0-5000ppm	2,0
LNG (CH4 base)		0-100%LEL	5,0
LNG (C3H8 base)		0-100%LEL	2,0
Methyl alcohol	CH_3OH	0-5000ppm	5,5
Methyl bromide	CH_3Br	0-1000ppm	8,6
Methyl ethyl keton	MEK	0-5000ppm	1,8
Methyl isobuthyl keton	MIBK	0-500ppm	1,2
Methylene chloride	CH_2Cl_2	0-5000ppm	13,0
n-Hexane	$n-C_6H_{14}$	0-5000ppm	1,2
Tetrahydrofuran	THF	0-2000ppm	2,0
Toluene	C_7H_8	0-3000ppm	1,2
Trichloroethylene	C_2HCl_3	0-5000ppm	7,9
Vinyl chloride	VCM	0-3000ppm	3,8
Xylene	C_8H_{10}	0-2000ppm	1,0

Release July 2013

Inside view SD-1



Terminal Plates



Specification

Model	SD-1		SD-1D		SD-1D-AS		SD-1GH	SD-1DGH	SD-1DGH-AS
Type	Type GP	Type NC	Type GP	Type NC	Type GP	Type NC	-		
Detection Principle	Catalytic combustion	New Ceramic	Catalytic combustion	New Ceramic	Catalytic combustion	New Ceramic	Semiconductor		
Measuring gas	Combustible gases						Toxic or combustible gases		
Sampling method	Diffusion		Sampling drawing (Remote sampling pump is required)		Air Aspiration		Diffusion	Sampling drawing	Air Aspiration
Flow rate	-		0.8~2.0l/min				-	0.8~2.0l/min	
Measuring range	0~100% LEL	0~100% LEL	0~100% LEL	0~100% LEL	0~100% LEL	0~100% LEL	Refer to the list on page 3		
Display	7-seg digital LED (4 digits)								
Alarm setting	25%LEL	25%LEL	25%LEL	25%LEL	25%LEL	25%LEL	depends on the gas		
Output	Analog transmission (4-20mA), load resistance under 300 Ω								
Alarm contacts	Gas concentration signal / alarm contact (gas alert or fail alert or gas, fail common alert)								
Contact capacity	Normal open or normal close								
Applicable cable	30VDC 0.5A or 250VAC 0.5A (load resistance)								
Signal transmission distance & cable	CVS, 1.25sq or 2.0sq, 3-core or CWS, 1.25sq or 2.25sq, 5-core (when in contact use)								
Fail alert, Self diagnosis	MAX 1.25km with CWS 1.25sq cable, MAX 2.0km with Cws 2.0sq cable								
Fail alert display	Fail lamp (yellow) / content indication								
Power source	24VDC (17VDC~26.4VDC), consumed power approx 3W (MAX)						24VDC (17VDC~26.4VDC), consumed power approx 3.1W (MAX)		
Operating temperature & humidity	-20~+60°C / below 95%RH (non condensing)								
Dimension & Weight	Diffusion = Approx. 148(W) x 161(H) x 88(D) mm, Approx. 2.0 kg		Sampling drawing = Approx 148(W) x 177(H) x 88(D) mm, Approx. 2.2 kg		Air Aspiration = Approx. 400(W) x 265(H) x 102(D) mm, Approx 5.6 kg				
Protection level	IP65 (except the sensor parts)								
Explosion proof	CE, Exd II CT5 ATEX, IECEx EN60079-29-1								



Features

- For 4 years
- No additional costs
- Prolongation possible

Service content

Complete maintenance, change of sensors and filters, preventive service, calibration with test gas, test of all electric functions, test of alarm function, check of pneumatic units, test report, worldwide supply network

Specifications subject to change without notice.



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