

# TRANSMITTER TYPE GAS DETECTOR

## MODEL SD-1series



RoHS  
compliant

CE

**Flameproof enclosure Exd IICT5**  
**Acetylene, Hydrogen**

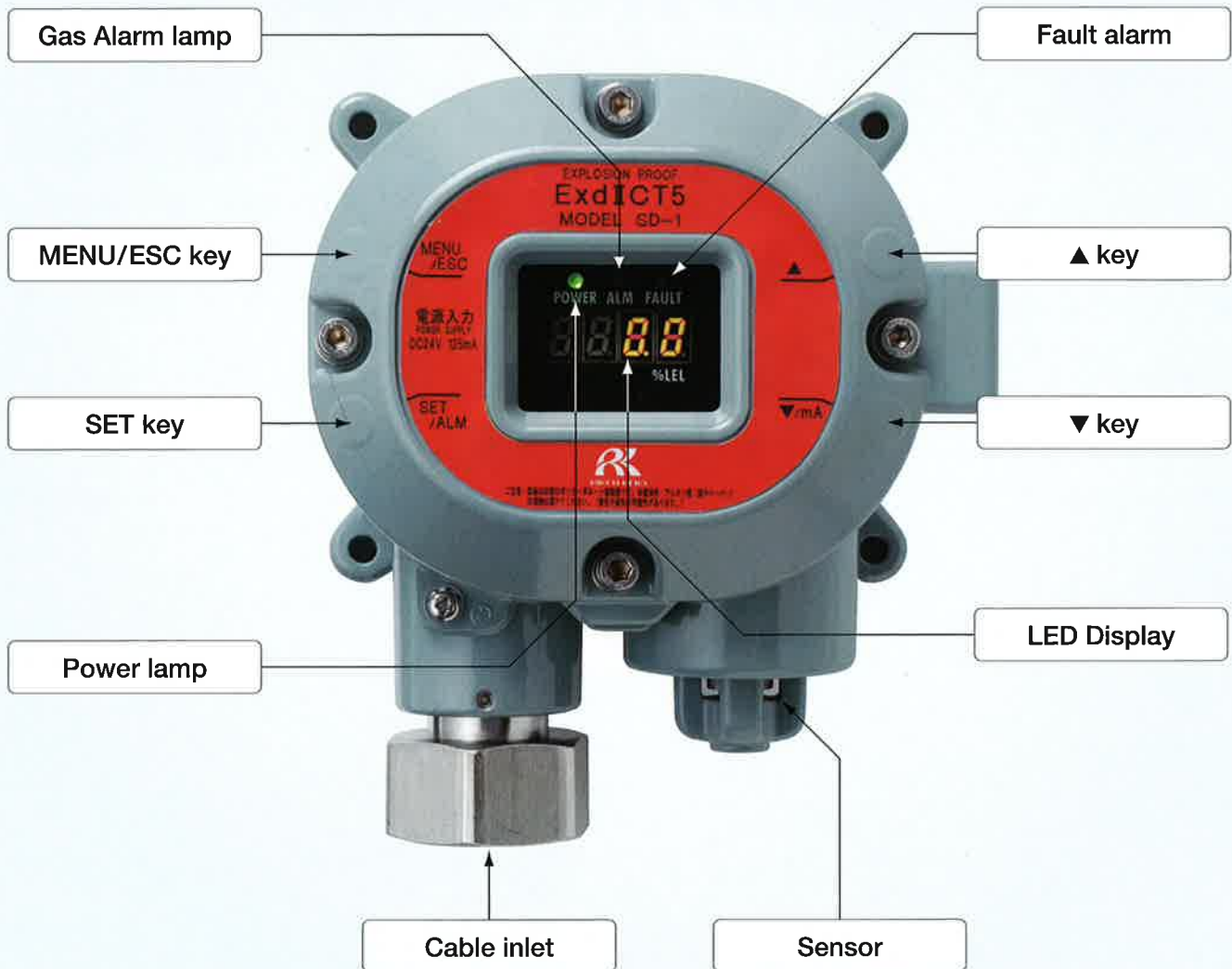
### Applications

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

### Features

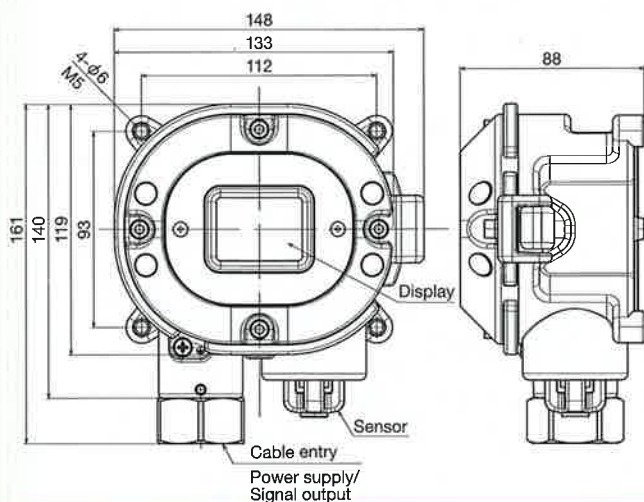
- Explosion class Exd IICT5
- ATEX/IECEX approval
- EN60079-29-1, IEC60079-29-1 by TIS
- IP65/67 ingress class
- 4-20mA linear outputs
- Small, rugged, dust and weather proof construction
- Electrical power saving (Maximum: 3W)
- One man maintenance by magnetic key
- Self diagnosis by microprocessor

## ▷ COMPONENT DESIGNATION

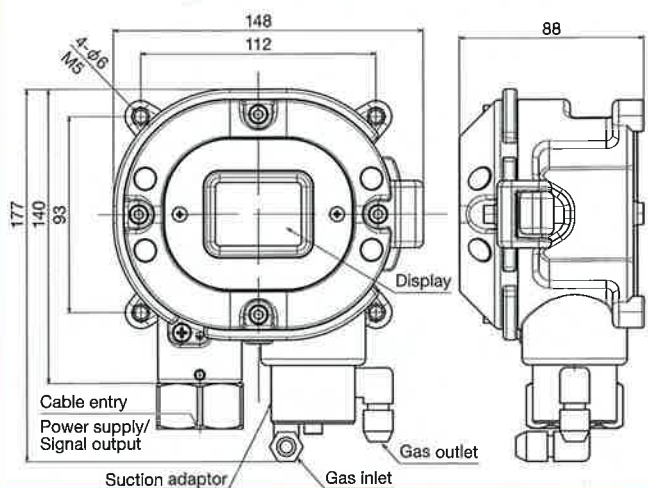


## ▷ Outer Dimensions

### [Diffusion Type]



### [Sample drawing Type]



## ▷ 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		Sample drawing (Remote sampling pump is required)		Air Aspiration		Diffusion	Sample drawing (Remote sampling pump is required)	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 the last page*		
Display	7-seg digital LED (4 digits)								
Alarm setting	25%LEL (Standard)	25%LEL* (Standard)	25%LEL (Standard)	25%LEL* (Standard)	25%LEL (Standard)	25%LEL* (Standard)	depends on the gas		
Alarm delay time	Approx 30 seconds when exposed to gas concentration of 1.6 times alarm level						Approx within 30 to 60 seconds when exposed to gas concentration of 1.6 times alarm level (depends on the gas)		
Output	Analog transmission (4-20mA), load resistance under 300Ω Gas concentration signal / alarm contact (gas alert or fail alert or gas · fail common alert)								
Alarm contacts	Normal open or normal close								
Contact capacity	30VDC 0.5V or 250VAC 0.5A (load resistance)								
Applicable cable	CVVS · 1.25sq or 2.0sq · 3-core or CVVS · 1.25sq or 2.0sq · 5-core (when in contact use)								
Signal transmission distance & cable	MAX 1.25km with CVVS 1.25sq cable, MAX 2.0km with CVVS 2.0sq cable								
Fail alert · Self diagnosis	Circuit failure / Sensor failure								
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 2.0kg Sample drawing = Approx 148(W) x 177(H) x 88(D) mm, Approx 2.2kg Air Aspiration = Approx 400(W) x 265(H) x 102(D) mm, Approx 5.6kg								
Protection level	About IP65 (except the sensor parts)								
Explosion proof	Exd II CT5 ATEX, IECEx **EN60079-29-1, IEC60079-29-1 by TIIS								

\*Please contact RIKEN KEIKI \*\* Applied to SD-1 type GP for H<sub>2</sub>, CH<sub>4</sub>, i-C<sub>4</sub>H<sub>10</sub>, C<sub>3</sub>H<sub>8</sub>

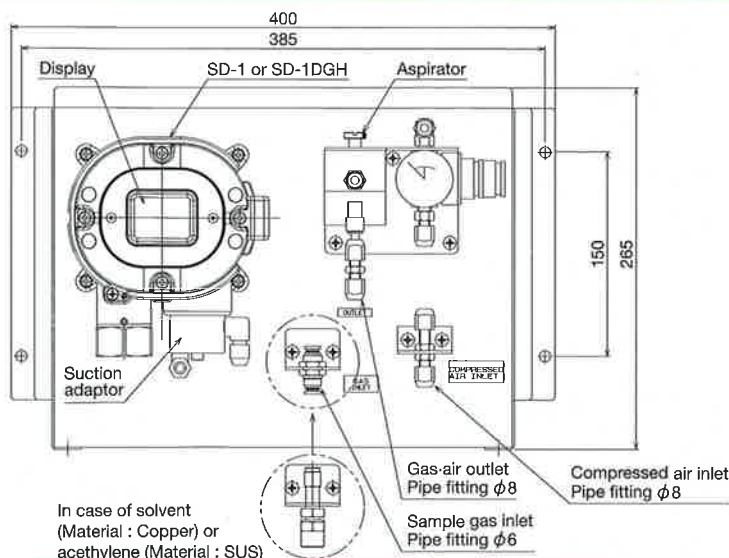
Specification subject to change without notice.

## ▷ Standard accessories

		SD-1/SD-1GH	SD-1D/SD-1DGH	SD-1D-AS/SD-1DGH-AS
Standard accessories	Control lever	●	●	●
	Control key	●	●	●
Optional accessories	Sun shade cover (For pole stand)	●	●	—
	Sun shade cover (For wall)	●	●	—
	Drip proof cap (Round type)	●	—	—
	Calibration cap	●	—	—
	Drip proof cover (Box type)	—	—	●

Specification subject to change without notice.

### 【Air aspiration Type】



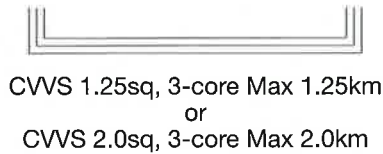
▷ Connection with indicator/alarm unit  
(Connection with RM-590 series)

▷ Connection with Alarm monitoring system

RM-590 series



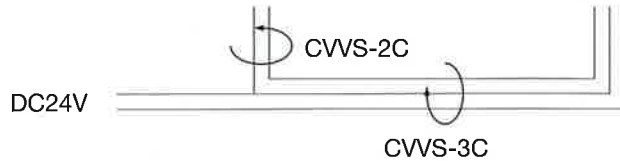
SD-1



Alarm monitoring system



SD-1



▷ TLV/LEL concentration & detectable concentrations for various gases & vapors

Detection gas	Formula	Available full scale		TLV-TWA(ppm)	LEL
		Min(ppm)	Max(ppm)		
Acetic acid	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	500	3000	10	4.0
Acetone	C <sub>3</sub> H <sub>6</sub> O	100	10000	500	2.15
Acetylene	C <sub>2</sub> H <sub>2</sub>	200	3000	-	1.5
Acrylonitrile	C <sub>3</sub> H <sub>3</sub> N	500	1000	2	2.8
Benzene	C <sub>6</sub> H <sub>6</sub>	200	2000	0.5	1.2
Buthyl acetate	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	100	5000	150	1.4
Buthyl acrylate	C <sub>7</sub> H <sub>12</sub> O <sub>2</sub>	50	1000	2	1.5
n-Buthyl alcohol	C <sub>4</sub> H <sub>10</sub> O	100	5000	400	1.4
Chloroform	CHCl <sub>3</sub>	200	5000	10	-
Cyclohexane	C <sub>6</sub> H <sub>12</sub>	200	5000	100	1.3
Cyclohexanone	C <sub>6</sub> H <sub>10</sub> O	50	1000	20	1.1
2-ethoxyethyl acetate	C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	100	3000	5	1.7
Ethyl acetate	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	100	5000	20	2.1
Ethyl alcohol	C <sub>2</sub> H <sub>5</sub> OH	100	5000	1000	3.3
Ethylene	C <sub>2</sub> H <sub>4</sub>	200	5000	200	2.7
Ethylene oxide	C <sub>2</sub> H <sub>4</sub> O	100	1000	1	3.0
Flon 11	CCl <sub>3</sub> F	2000	5000	1000	-
Flon 12	CHClF <sub>2</sub>	300	5000	1000	-
Hydrogen	H <sub>2</sub>	200	10000	-	4.0
Hydrogen sulfide	H <sub>2</sub> S	20	100	1	-
Isopropyl alcohol	IPA	300	5000	200	2.0
LNG(CH <sub>4</sub> base)		2000	100%LEL	-	5.0(CH <sub>4</sub> )
LPG(C <sub>3</sub> H <sub>8</sub> base)		2000	100%LEL	-	2.0(C <sub>3</sub> H <sub>8</sub> )
Methyl alcohol	CH <sub>3</sub> OH	100	5000	200	5.5
Methyl bromide	CH <sub>3</sub> Br	200	1000	5	8.6
Methyl ethyl keton	MEK	30	5000	200	1.8
Methyl isobuthyl keton	MIBK	50	500	50	1.2
Methylene choride	CH <sub>2</sub> Cl <sub>2</sub>	500	5000	50	13.0
n-Hexane	n-C <sub>6</sub> H <sub>14</sub>	100	5000	50	1.2
Tetrahydrofuran	THF	20	2000	200	2.0
Toluene	C <sub>7</sub> H <sub>8</sub>	20	3000	100	1.2
Trichloroethylene	C <sub>2</sub> HCl <sub>3</sub>	300	5000	50	7.9
Vinyl chloride	VCM	200	3000	5	3.8
Xylene	C <sub>8</sub> H <sub>10</sub>	100	2000	100	1.0

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