

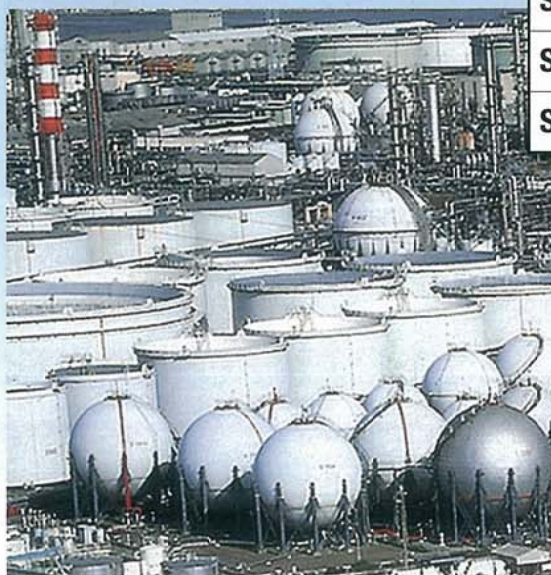
For combustible and toxic gases

SMART TRANSMITTER / GAS DETECTOR

SD-705

series

MODEL	
SD-705GP	Diffusion type for combustible gases
SD-705NC	Diffusion type for combustible gases
SD-705GH	Diffusion type for combustible and toxic gases
SD-705EC	Diffusion type for toxic gases H ₂ S and CO
SD-705RI	Diffusion type for combustible gases
SD-705RID	Sample drawing type for combustible gases
SD-705RID-AS	Air aspirating sampling type for combustible gases
SD-705SC	Remote type



Features

- Alarm contacts provided
- Simple adjustment with magnetic control key
- Remote detector connection capability (SD-705SC series)
- Simple one man calibration
- Self-diagnostics by internal microprocessor
- Back-light LCD provided
- Peakhold function provided (option)

SMART TRANSMITTER/GAS DETECTOR **SD-705** series

SUMMARY

The Model SD-705 series smart transmitter/detector heads are state of the art instruments housed in a flameproof enclosure. A simple magnetic control key is placed over clear marked positions on the surface plate to test and adjust the instrument without opening the transmitter/detector head. Five different detection principles are provided with SD-705 series which enable you to select the most suitable principle according to the detection gas, range and application for use. Especially, the Model SD-705RI can detect combustible gases (CH₄ and i-C₄H₁₀) with 100vol% F.S. in inert gas base.

FEATURES

- ▶ Small, light weight, explosion proof
- ▶ Simple adjustment with magnetic control key
- ▶ Simple one man calibration
- ▶ Microprocessor controlled
- ▶ Self-diagnostics and auto-zero function
- ▶ Remote detector available (SD-705SC series)
- ▶ Operational status display
- ▶ 4-20mA linear output
- ▶ 2 gas alarm contacts (1st & 2nd) provided
- ▶ Trouble alarm contact provided

► DETECTION GAS

• SD-705GH/SD-705SC-GH

Detection gas		Lower Explosive Limit (LEL)	Detection range	
			Lowest F.S.	Highest F.S.
Methane	CH ₄	5.0 VOL%	2000ppm	5 VOL%
iso-Butane	i-C ₄ H ₁₀	1.8 VOL%	500ppm	5000ppm
Gasoline vapor		1.0 VOL%	100ppm	5000ppm
Hydrogen	H ₂	4.0 VOL%	100ppm	1 VOL%
Benzene	C ₆ H ₆	1.2 VOL%	200ppm	2000ppm
Toluene	C ₇ H ₈	1.2 VOL%	300ppm	3000ppm
MEK	C ₄ H ₈ O	1.8 VOL%	30ppm	2000ppm
IPA	C ₃ H ₈ O	2.0 VOL%	300ppm	5000ppm
Xylene	C ₈ H ₁₀	1.0 VOL%	100ppm	1000ppm

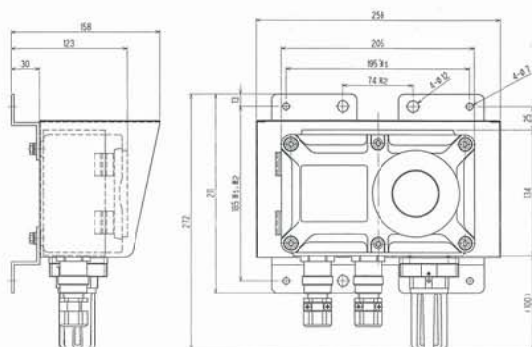
• SD-705RI/SD-705SC-RI

Detection gas		Lower Explosive Limit (LEL)	Detection range	Resolution (digit)
Methane	CH ₄	5.0 VOL%	0~100%LEL	0.5%LEL
			0~100vol%	0.5vol%
Ethylene	C ₂ H ₄	2.7 VOL%	0~100%LEL	0.5%LEL
Ethane	C ₂ H ₆	3.0 VOL%	0~100%LEL	0.5%LEL
Propane	C ₃ H ₈	2.0 VOL%	0~100%LEL	0.5%LEL
iso-Butane	i-C ₄ H ₁₀	1.8 VOL%	0~100%LEL	0.5%LEL
			0~100vol%	0.5vol%
n-Hexane	n-C ₆ H ₁₄	1.2 VOL%	0~100%LEL	0.5%LEL
IPA	C ₃ H ₈ O	2.0 VOL%	0~100%LEL	0.5%LEL
Toluene	C ₇ H ₈	1.2 VOL%	0~100%LEL	0.5%LEL
MEK	C ₄ H ₈ O	1.8 VOL%	0~100%LEL	0.5%LEL
Ethyl alcohol	C ₂ H ₅ OH	3.3 VOL%	0~100%LEL	0.5%LEL

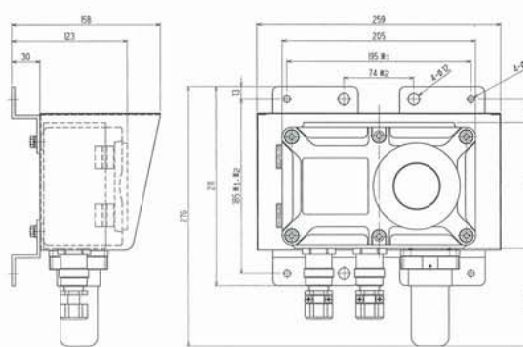
• Cable length between transmitter and detector head

Transmitter	Detector head	Distance
SD-705SC-GP	GD-A8	Max. 10m by CVV, 4-core cable
SD-705SC-NC	GD-A8NC	Max. 10m by CVV, 4-core cable
SD-705SC-GH	GD-A8V	Max. 10m by CVV, 3-core cable
SD-705SC-RI	GD-A45RI	5m by exclusive cable

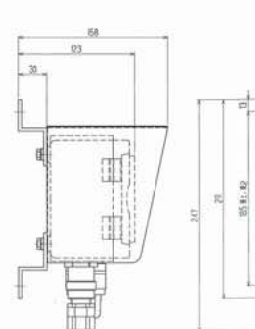
SD-705RI



SD-705RID



SD-705GP/NC/



SMART TRANSMITTER/GAS DETECTOR SD-705 series

SUMMARY

The Model SD-705 series smart transmitter/detector heads are state of the art instruments housed in a flameproof enclosure. A simple magnetic control key is placed over clear marked positions on the surface plate to test and adjust the instrument without opening the transmitter/detector head. Five different detection principles are provided with SD-705 series which enable you to select the most suitable principle according to the detection gas, range and application for use. Especially, the Model SD-705RI can detect combustible gases (CH₄ and i-C₄H₁₀) with 100vol% F.S. in inert gas base.

FEATURES

- ▶ Small, light weight, explosion proof
- ▶ Simple adjustment with magnetic control key
- ▶ Simple one man calibration
- ▶ Microprocessor controlled
- ▶ Self-diagnostics and auto-zero function
- ▶ Remote detector available (SD-705SC series)
- ▶ Operational status display
- ▶ 4-20mA linear output
- ▶ 2 gas alarm contacts (1st & 2nd) provided
- ▶ Trouble alarm contact provided

DETECTION GAS

• SD-705GH/SD-705SC-GH

Detection gas	Lower Explosive Limit (LEL)	Detection range	
		Lowest F.S.	Highest F.S.
Methane CH ₄	5.0 VOL%	2000ppm	5 VOL%
iso-Butane i-C ₄ H ₁₀	1.8 VOL%	500ppm	5000ppm
Gasoline vapor	1.0 VOL%	100ppm	5000ppm
Hydrogen H ₂	4.0 VOL%	100ppm	1 VOL%
Benzene C ₆ H ₆	1.2 VOL%	200ppm	2000ppm
Toluene C ₇ H ₈	1.2 VOL%	300ppm	3000ppm
MEK C ₄ H ₈ O	1.8 VOL%	30ppm	2000ppm
IPA C ₃ H ₈ O	2.0 VOL%	300ppm	5000ppm
Xylene C ₈ H ₁₀	1.0 VOL%	100ppm	1000ppm

• SD-705RI/SD-705SC-RI

Detection gas	Lower Explosive Limit (LEL)	Detection range	Resolution (digit)
Methane CH ₄	5.0 VOL%	0~100%LEL	0.5%LEL
		0~100vol%	0.5vol%
Ethylene C ₂ H ₄	2.7 VOL%	0~100%LEL	0.5%LEL
Ethane C ₂ H ₆	3.0 VOL%	0~100%LEL	0.5%LEL
Propane C ₃ H ₈	2.0 VOL%	0~100%LEL	0.5%LEL
iso-Butane i-C ₄ H ₁₀	1.8 VOL%	0~100%LEL	0.5%LEL
		0~100vol%	0.5vol%
n-Hexane n-C ₆ H ₁₄	1.2 VOL%	0~100%LEL	0.5%LEL
IPA C ₃ H ₈ O	2.0 VOL%	0~100%LEL	0.5%LEL
Toluene C ₇ H ₈	1.2 VOL%	0~100%LEL	0.5%LEL
MEK C ₄ H ₈ O	1.8 VOL%	0~100%LEL	0.5%LEL
Ethyl alcohol C ₂ H ₅ OH	3.3 VOL%	0~100%LEL	0.5%LEL

• Cable length between transmitter and detector head

Transmitter	Detector head	Distance
SD-705SC-GP	GD-A8	Max. 10m by CVV, 4-core cable
SD-705SC-NC	GD-A8NC	Max. 10m by CVV, 4-core cable
SD-705SC-GH	GD-A8V	Max. 10m by CVVS, 3-core cable
SD-705SC-RI	GD-A45RI	5m by exclusive cable

SPECIFICATIONS

MODEL		SD-705GP SD-705NC	SD-705SC-GP (Remote type)	SD-705GH	SD-705RI
Detection gas		Combustible gas (General combustible gas or Methane)		Refer to detection gas list	
Detection principle		Catalytic combustion / New ceramic type		Semiconductor method	
Detection range		0~100%LEL		Refer to detection gas list	
Display		Digital LCD with backlight		Digital LCD with backlight	
Operating conditions		-10°C~+40°C, below 95%R.H. (Non-condensing)		-10°C~+40°C, below 95%R.H. (Non-condensing)	
External output	Alarm contact	Gas alarmNormally open or normally close for both 1st and 2nd alarms Trouble alarm...Normally open or normally close (option)		Gas alarmNormally open or normally close for both 1st and Trouble alarm...Normally open or (option)	
	Signal transmission	Gas concentration ...4-20mA (Linear, Resistance load, below 300Ω) Malfunction...0.5mA At maintenance mode and initial clear time ...2.5mA (Note : Max. 22mA with limiter)		Gas concentration ...4-20mA (Linear, Resistance load, below 300Ω) Malfunction...0.5mA At maintenance mode and initial clear time ...2.5mA (Note : Max. 22mA with limiter)	
Power requirement		24VDC ±10% (Max 6.0W)		24VDC ±10% (Max 6.0W)	
Structure		Flame proof Exd II BT4X approved by authority of Japan		Flame proof Exd II BT4X approved by authority of Japan	
Applicable cable		CVVS, 3-Core		CVVS, 3-Core	
Signal transmission distance		Max 1.25km with CVVS 1.25sq cable Max 2.0km with CVVS 2.0sq cable		Max 1.25km with CVVS 1.25sq cable Max 2.0km with CVVS 2.0sq cable	
Dimensions and weight (Approx.)		205(W) X 134(H) X 92(D) mm, 4.3kg		205(W) X 134(H) X 92(D) mm, 4.3kg	

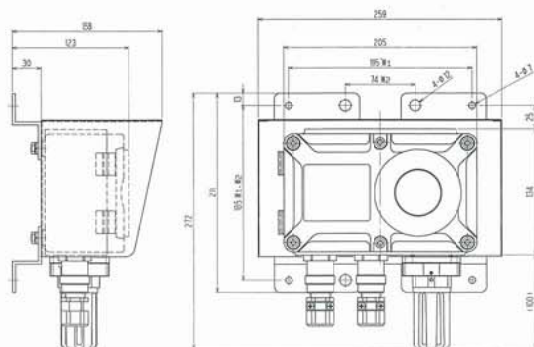
Standard accessories

- 1 Sun shade cover 1pce
- 2 Fuse (1A) 1pce
- 3 Magnetic control key... 1pce/order

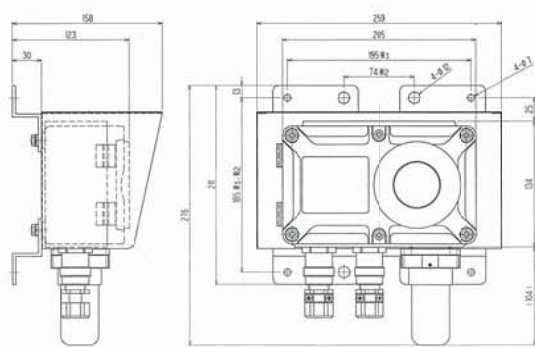
Optional accessories

- Box type drip proof cover
- Water proof rubber cover
- Pole stand
- U-bolt for pole stand mounting
- Calibration kit
- Round type drip proof cap with bump gas check function

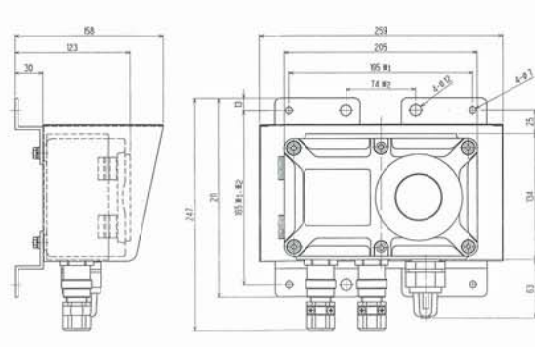
SD-705RI



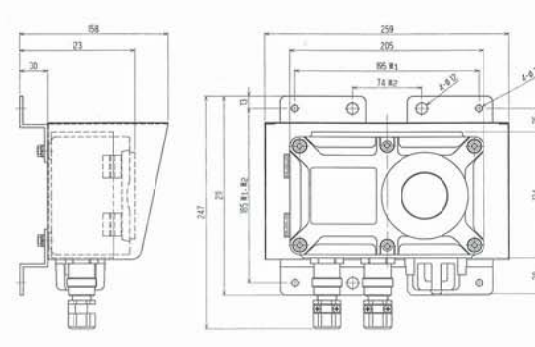
SD-705RID



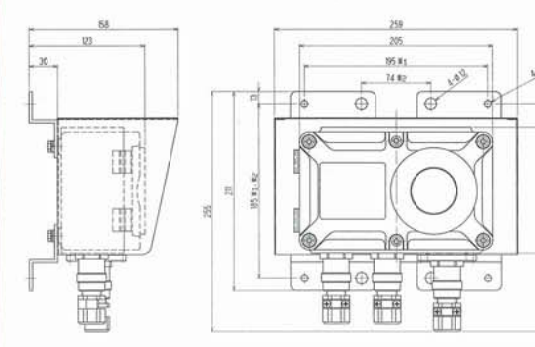
SD-705GP/NC/GH



SD-705EC



SD-705SC (Remote type)



■ SPECIFICATIONS

MODEL		SD-705GP SD-705NC	SD-705SC-GP (Remote type)	SD-705GH	SD-705SC-GH (Remote type)	SD-705RI	SD-705SC-RI (Remote type)	SD-705RID	SD-705EC	
Detection gas		Combustible gas (General combustible gas or Methane)		Refer to detection gas list		Refer to detection gas list		Carbon Monoxide (CO)		Hydrogen Sulfide (H ₂ S)
Detection principle		Catalytic combustion / New ceramic type		Semiconductor method		Non-Dispersive Infrared Ray Absolution (NDIR)		Electrochemical cell		
Detection range		0~100%LEL		Refer to detection gas list		Refer to detection gas list 0-100%LEL, 0-100vol%		0~150 ppm		0~30 ppm
Display		Digital LCD with backlight		Digital LCD with backlight		Digital LCD with backlight		Digital LCD with backlight		
Operating conditions		-10°C~+40°C, below 95%R.H. (Non-condensing)		-10°C~+40°C, below 95%R.H. (Non-condensing)		-10°C~+40°C, below 95%R.H. (Non-condensing)		-10°C~+40°C, below 95%R.H. (Non-condensing)		
External output	Alarm contact	Gas alarmNormally open or normally close for both 1st and 2nd alarms Trouble alarm...Normally open or normally close (option)		Gas alarmNormally open or normally close for both 1st and 2nd alarms Trouble alarm...Normally open or normally close (option)		Gas alarmNormally open or normally close for both 1st and 2nd alarms Trouble alarm...Normally open or normally close (option)		Gas alarmNormally open or normally close for both 1st and 2nd alarms Trouble alarm...Normally open or normally close (option)		
	Signal transmission	Gas concentration ...4-20mA (Linear, Resistance load, below 300Ω) Malfunction...0.5mA At maintenance mode and initial clear time ...2.5mA (Note : Max. 22mA with limiter)		Gas concentration ...4-20mA (Linear, Resistance load, below 300Ω) Malfunction...0.5mA At maintenance mode and initial clear time ...2.5mA (Note : Max. 22mA with limiter)		Gas concentration ...4-20mA (Linear, Resistance load, below 300Ω) Malfunction...0.5mA At maintenance mode and initial clear time ...2.5mA (Note : Max. 22mA with limiter)		Gas concentration ...4-20mA (Linear, Resistance load, below 300Ω) Malfunction...0.5mA At maintenance mode and initial clear time ...2.5mA (Note : Max. 22mA with limiter)		
Power requirement		24VDC ±10% (Max 6.0W)		24VDC ±10% (Max 6.0W)		24VDC ±10% (Max 4W)		24VDC ±10% (Max 2.5W)		
Structure		Flame proof Exd II BT4X approved by authority of Japan		Flame proof Exd II BT4X approved by authority of Japan		Flame proof Exd II BT4X approved by authority of Japan		Flame proof Exd II BT4X approved by authority of Japan		
Applicable cable		CVVS, 3-Core		CVVS, 3-Core		CVVS, 3-Core		CVVS, 3-Core		
Signal transmission distance		Max 1.25km with CVVS 1.25sq cable Max 2.0km with CVVS 2.0sq cable		Max 1.25km with CVVS 1.25sq cable Max 2.0km with CVVS 2.0sq cable		Max 1.25km with CVVS 1.25sq cable Max 2.0km with CVVS 2.0sq cable		Max 1.25km with CVVS 1.25sq cable Max 2.0km with CVVS 2.0sq cable		
Dimensions and weight (Approx.)		205(W) X 134(H) X 92(D) mm, 4.3kg		205(W) X 134(H) X 92(D) mm, 4.3kg		205(W) X 134(H) X 92(D) mm, SD-705RI/SD-705SC-RI Approx · 5.0kg SD-705RID Approx · 5.2kg		205(W) X 134(H) X 92(D) mm, 4.3kg		

•Specifications subject to change without notice.

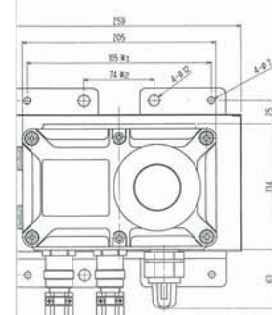
Standard accessories

- ① Sun shade cover 1pce
- ② Fuse (1A) 1pce
- ③ Magnetic control key... 1pce/order

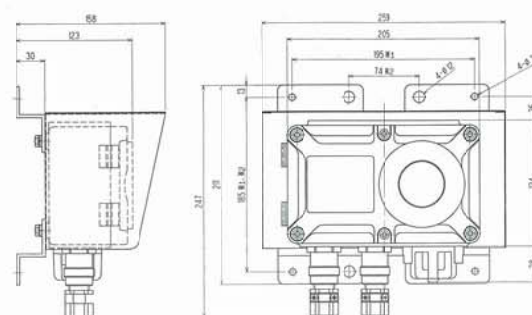
Optional accessories

- Box type drip proof cover
- Water proof rubber cover
- Pole stand
- U-bolt for pole stand mounting
- Calibration kit
- Round type drip proof cap with bump gas check function

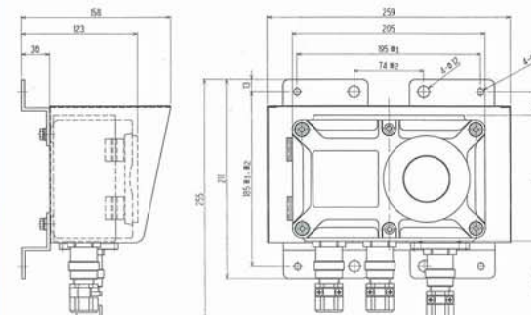
GH



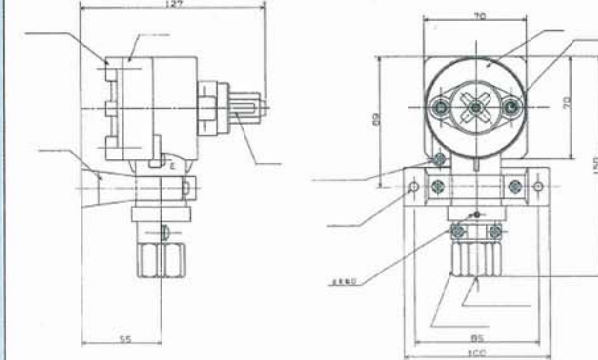
SD-705EC



SD-705SC (Remote type)

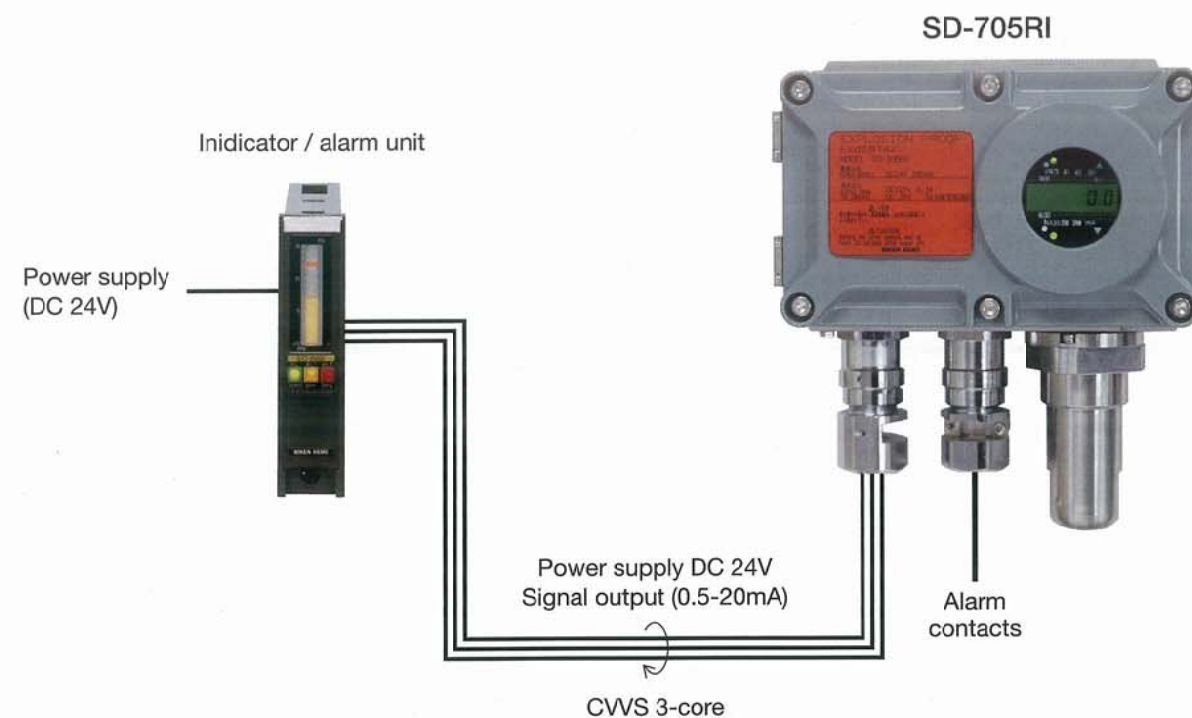


GD-A8/A8NC/A8V (Remote detector head)

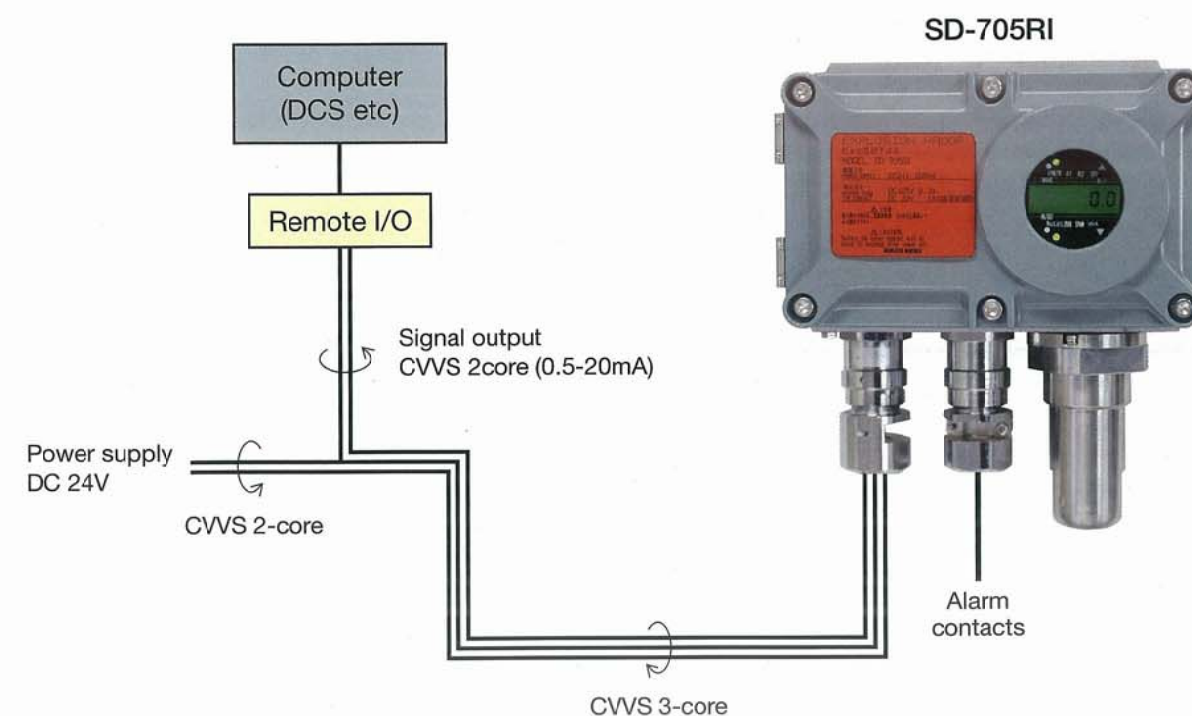


►► SYSTEM APPLICATIONS

■ Connection with indicator / alarm unit

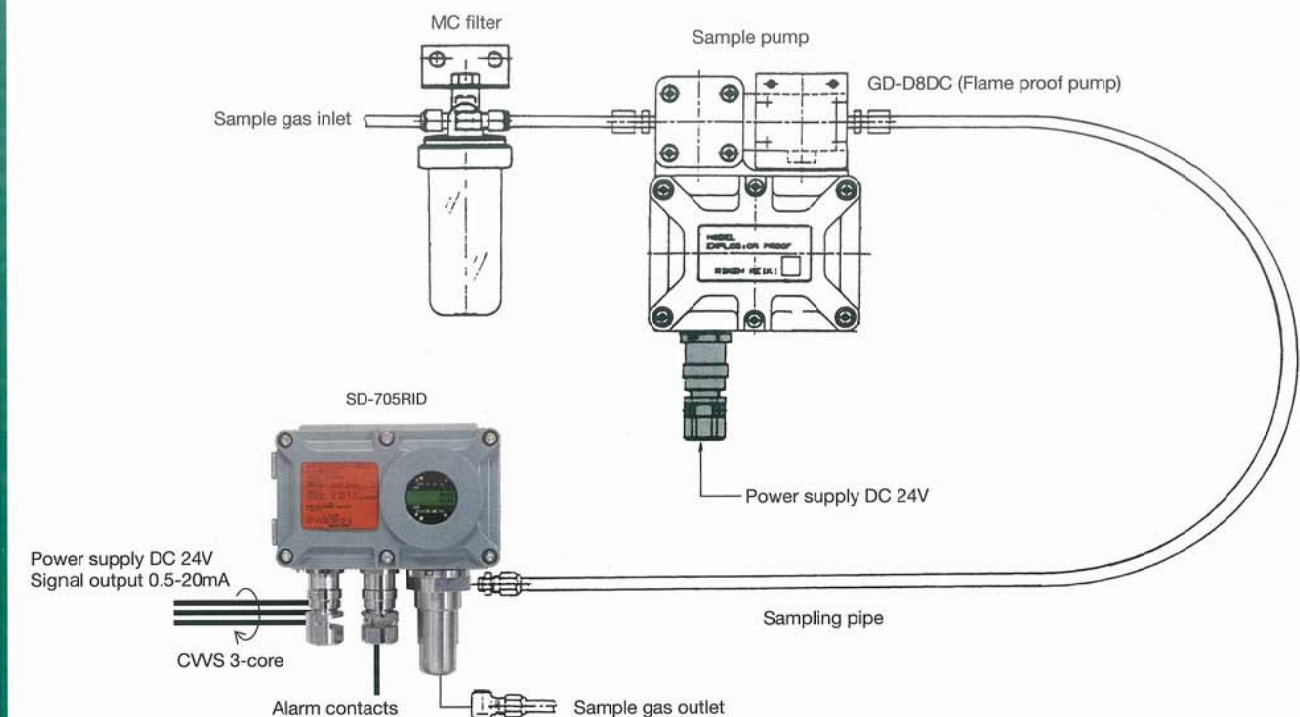


■ Connection with DCS

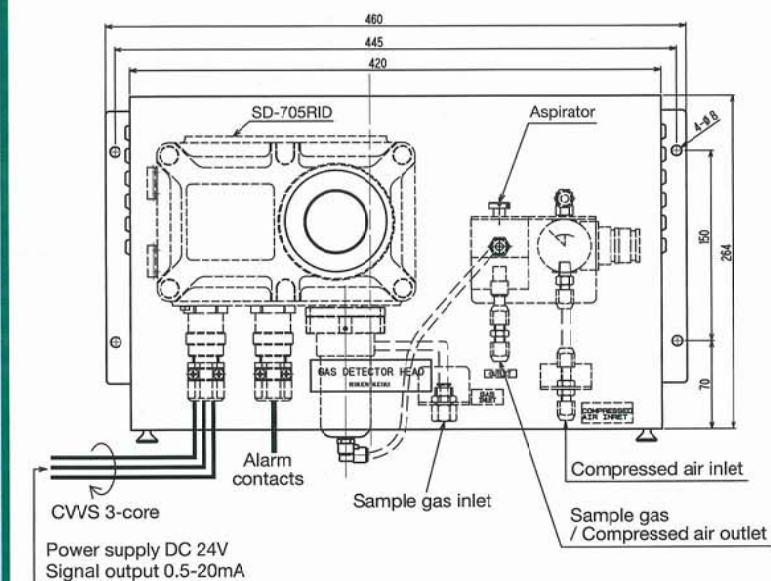


▶▶ SAMPLE DRAWING APPLICATION

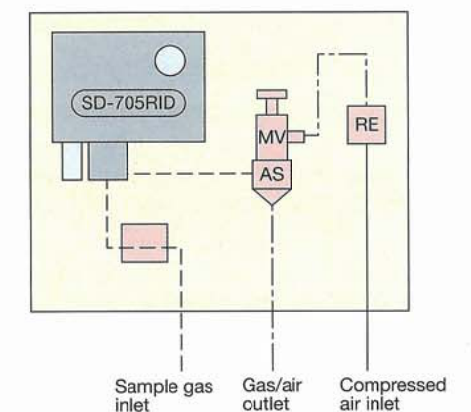
■ **SD-705RID** with remote sample drawing pump (Flame-proof type)



■ **SD-705RID-AS** (Air aspiration type)



- **Piping diagram**



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