<u>Gas Detector with Signal Converter SD-3EC Series SPECIFICATION</u>

Detection principle Detection gase* Display 7-segment LED (5 digita), 3-color lamp (red. green, yellow) Detection range* Depends on sensor specifications Sampling method Diffusion type Power supply indication Fault alarm Reset type* Alarm stay Alarm lamp lit (green) Reset type* Alarm lamp lit (green) Fault alarm Reset type* Alarm lamp lit (green) Reset type* Alarm lamp lit (green) Fault alarm Reset type* Alarm lamp lit (green) Reset type* Alarm lamp lit (green) Reset type* Alarm lamp lit (green) Fault alarm Reset type* Alarm lamp lit (green) Reset type Self-diagnosis Sensor abnormality: Self-latching Self-diagnosis Sensor abnormality: Self-latching if sensor is disconnected) Self-diagnosis Sensor abnormality: Self-latching if sensor is disconnected) Self-diagnosis Sensor abnormality: Self-latching if sensor is disconnected) Self-diagnosis Sensor life assessment, clock abnormality diagnosis, communication diagnosis, sensor ware propertion of the pr	Mode I		SD-3EC SD-3DEC		
Detection gas*					
Display Detection range nd Depends on sensor specifications Alarm set points nd Depends on sensor specifications Sampling method Diffusion type Opends on sensor specifications Suction type (pour into by external unit) Alarm set points nd Depends on sensor specifications Suction type (pour into by external unit) Alarm set points nd Depends on sensor specifications Suction type (pour into by external unit) Alarm set points nd Depends on sensor specifications Suction type (pour into by external unit) Alarm set points nd Display Alarm lamp lit (red) Alarm lamp lit (red) Alarm lamp lit (red) Alarm lamp lit (red) Reset type nd Reset type nd Alarm lamp lit (red) Reset type nd Alarm lamp lit (red) Reset type nd Alarm lamp lit (red) Reset type nd System abnormality: Self-latching Sensor abnormality (E-1), sensor abnormality (E-1) Indication Functions External output nd Ges concentration same as normal operation Alarm delay, suppression, zero follower, sensitivity correction, communication Alarm delay, suppression, zero follower, sensitivity correction, communication Specifications Alarm delay, suppression, zero follower, sensitivity correction, communication Specifications Transmission Specifications Alarm delay suppression (common power supply (power supply, signal, common) or were analog transmission (common power supply (power supply signal, common) or were analog transmission (common power supply (power supply signal, common) or cable nd 2.0 sq (2.0 sm nd /AMG16): Not exceeding 1.25 km Distance For 2.0 sq (2.0 sm nd /AMG16): Not exceeding 1.25 km Distance For 2.0 sq (2.0 sm nd /AMG16): Not exceeding 1.25 km Distance For 2.0 sq (2.0 sm nd /AMG16): Not exceeding 1.25 km Distance For 2.0 sq (2.0 sm nd /AMG16): Not exceeding 1.25 km Distance Power supply cable nd Power s					
Depends on sensor specifications	Display		7-segment LED (5 digits), 3-color lamp (red, green, yellow)		
Alarm set points** Depends on sensor specifications					
Setting flow rate Power supply indication Power lamp lit (green)	Alarm set point	CS*1	Depends on sensor specifications		
Power supply indication Power lamp lit (green)	Sampling method	1	Diffusion type Suction type (pour into by external unit)		
Alarm type Alarm type	Setting flow ra	ite	- 0.4 - 1.5 L/min		
Indication Alarm lamp lit (red) Reset type" Auto reset or self-latching Self-diagnosis System abhormality (E-9), sensor abnormality (E-1) Auto reset type Self-diagnosis System abhormality (F-9), sensor abnormality (E-1) Auto reset type Sensor abhormality (Self-diagnosis Sensor abhormality (Self-diagnosis Sensor abhormality (Self-diagnosis Sensor abhormality (Self-latching Sensor abhormality (Sensor abhormality (Sensor abhormality (Self-latching Sensor abhormality (Sensor abhor	Power supply in	ndication	Power lamp lit (green)		
Fault alarm Reset type* Autor reset or self-latching	Gas	Alarm type	Two-step alarm (L-LL, L-H, or H-HH)		
Reset type** Auto reset or self-latching Self-diagnosis System abnormality (E-9), sensor abnormality (E-1)			Alarm lamp lit (red)		
Fault alarm	ararııı	Reset type*1	Auto reset or self-latching		
Reset type					
Reset type	Fault alarm	Indication			
Sensor abnormality: Auto reset (selT-latching it sensor is disconnected) Sensor life assessment, clock abnormality diagnosis, communication diagnosis, sensor war Display Blinking display alternating between gas concentration and error code Operation Functions External output*¹ Gas concentration signal (4-20 mA DC + HART output), contact output (optional) Transmission Method 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply, signal, common⟩) or 2-wire analog transmission (common power supply ⟨power supply (power supply (raure ararın	Reset type			
Display Display Display Operation Operatio					
Functions Functions	-	·			
Functions Alarm delay, suppression, zero follower, sensitivity correction, communication	Warnings	<u> </u>			
External output¹¹ Gas concentration signal (4-20 mA DC + HART output), contact output (optional) Transmission Method 3-wire analog transmission (common power supply <pre></pre>		Uperation	'		
Transmission Method 2-wire analog transmission (common power supply <pre>yower supply, signal, common</pre>) or 2-wire analog transmission (current source)		ابد			
Method 2-wire analog transmission (current source)	External output				
Transmission Specifications A = 20 mA DC (non-insulated linear output)					
Gas concentration Specifications Maximum load resistance 600 Ω (with derating depending on power supply voltage) Resolution: max. 250 divisions (depending on specifications)	-	metnoa			
Specifications Specifications Specifications Maximum load resistance 600 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Transmission	· · ·		
Resolution: max. 250 divisions (depending on specifications) Shielded cable 1.25 sq (1.38 mm²/AWG16) or cable*2 2.0 sq (2.08 mm²/AWG16) : Not exceeding 1.25 km					
Cable *2 2. 0 sq (2.08 mm²/AWG14) (same as power supply cable) Transmission For 1.25 sq (1.38 mm²/AWG16): Not exceeding 1.25 km For 2.0 sq (2.08 mm²/AWG14): Not exceeding 2 km (with derating depending on supply volt					
Transmission Distance For 1.25 sq (1.38 mm²/AWG16): Not exceeding 1.25 km	signal				
Distance For 2.0 sq (2.08 mm²/AWG14): Not exceeding 2 km (with derating depending on supply volt. SPDT (× 3): 2 alarms, 1 fault output, non-exciting at normal (exciting at alarm) or excitant normal (non-exciting at alarm), 250 V AC, 2 A: 30 V DC, 1 A (resistance load), Minimum 5V DC, 0.1A		cable*2			
SPDT (× 3): 2 alarms, 1 fault output, non-exciting at normal (exciting at alarm) or exciting at normal (exciting at alarm) or excitant). Degree of protection			For 1.25 sq (1.38 mm²/AWG16): Not exceeding 1.25 km		
at normal (non-exciting at alarm), 250 V AC, 2 A: 30 V DC, 1 A(resistance load), Minimum 5V DC, 0.1A Power supply	Distance		For 2.0 sq (2.08 mm²/AWG14): Not exceeding 2 km (with derating depending on supply voltage)		
Power supply Power supply cable*2 Shielded cable 1.25 sq (1.38 mm²/AWG16) or 2.0 sq (2.08 mm²/AWG14) (same as transmission cable)					
Power supply Power supply cable*2 Power supply cable*2 Power consumption Power consumption Max. 2.8 W	Alarm contact(C	Optional)*			
Power supply Power supply cable*2 Power consumption Max. 2.8 W Material Cable connectors*1 Tube connecting port Degrees of protection Installation type*1 External dimensions (excluding projections) Weight Approx. 171 (W) × 277 (H) × 127 (D) mm Operating temperature range*4 Operating humidity range*4 Operation method Degrees of protection Operation method Dedicated magnet control key Flameproof enclosures Shielded cable 1.25 sq (1.38 mm²/AWG16) or 2.0 sq (2.08 mm²/AWG14) (same as transmission cable) Nax. 2.8 W Stainless steel: SCS14 (equivalent to SUS316) NPT3/4, NPT1/2, M20 × 1.5 NPT1/4 (with SUS elbow union for 0.D φ8-1t) NPT1/4 (with SUS elbow union for 0.D φ8-1t) Approx. 171 (W) × 277 (H) × 127 (D) mm Approx. 171 (W) × 289 (H) × 127 (D) mm Operation method Dedicated magnet control key Type of protection Flameproof enclosures The 26 Fx db, TC T4 Gb, -50°C ≤ Ta ≤ +70°C (when lightning arrester is not installed)		* 1 11 *3	·		
Power supply cable ^{2.2} 2. 0 sq (2.08 mm²/AWG14) (same as transmission cable) Power consumption Max. 2.8 W Material Cable connectors*1 M25 × 1.5, conversion adapter (optional): NPT3/4, NPT1/2, M20 × 1.5 Tube connecting port Degrees of protection Installation type*1 Wall mounting (standard)/2B pole mounting (optional) External dimensions (excluding projections) Weight Approx. 171 (W) × 277 (H) × 127 (D) mm Approx. 7.0 kg Operating temperature range*4 O %C − +70 °C (no sudden changes) Operation method Operation method Type of protection Table connectors*1 M25 × 1.5, conversion adapter (optional): NPT3/4, NPT1/2, M20 × 1.5 NPT1/4 (with SUS elbow union for 0.D φ8-1t) NPT1/4 (with SUS elbow union for 0.D φ8-1t) NPT1/4 (with SUS elbow union for 0.D φ8-1t) Approx. 171 (W) × 277 (H) × 127 (D) mm Approx. 171 (W) × 289 (H) × 127 (D) mm Operation method Dedicated magnet control key Type of protection Table connectors*1 M26 Fx db TC T4 6b −50°C ≤ Ta ≤ +70°C (when lightning arrester is not installed)	-	Input voltage range™			
Power consumption Power consumption	Power supply	Power supply cable*2			
Material Stainless steel: SCS14 (equivalent to SUS316)	,, ,				
Housing Cable connectors*! M25 × 1.5, conversion adapter (optional): NPT3/4, NPT1/2, M20 × 1.5 Tube connecting port — NPT1/4 (with SUS elbow union for 0.D ϕ 8-1t) Degrees of protection Equivalent to IP66/67 Installation type*! Wall mounting (standard)/2B pole mounting (optional) External dimensions (excluding projections) Weight Approx. 171 (W) × 277 (H) × 127 (D) mm Approx. 171 (W) × 289 (H) × 127 (D) mm Operating temperature range*4 -40 °C - +70 °C (no sudden changes) Operating humidity range*4 0 %RH - 95 %RH (no condensation) Operation method Dedicated magnet control key Type of protection Flameproof enclosures II 26 Ex db II C T4 6b -50°C \leq Ta \leq +70°C (when lightning arrester is not installed)					
Housing Tube connecting port —					
Housing Degrees of protection					
Installation type*1 Wall mounting (standard)/2B pole mounting (optional) External dimensions (excluding projections) Weight Approx. 171 (W) × 277 (H) × 127 (D) mm Approx. 171 (W) × 289 (H) × 127 (D) mm Operating temperature range*4 -40 °C - +70 °C (no sudden changes) Operating humidity range*4 O %RH - 95 %RH (no condensation) Operation method Dedicated magnet control key Type of protection Flameproof enclosures II 26 Fx db II C T4 6b -50°C <ta (when="" +70°c="" <="" arrester="" installed)<="" is="" lightning="" not="" td=""><td></td><td></td><td></td></ta>					
External dimensions (excluding projections) Weight Approx. 171 (W) × 277 (H) × 127 (D) mm Approx. 171 (W) × 289 (H) × 127 (D) mm Approx. 7.0 kg Operating temperature range*4 Operating humidity range*4 Operation method Operation method Dedicated magnet control key Type of protection The approx of the state	Housing		· · · · · · · · · · · · · · · · · · ·		
Approx. 171 (W) × 277 (H) × 127 (D) mm Approx. 171 (W) × 289 (H) × 127 (D) mm Weight Approx. 6.7 kg Approx. 7.0 kg Operating temperature range*4 -40 °C - +70 °C (no sudden changes) Operating humidity range*4 O %RH - 95 %RH (no condensation) Operation method Dedicated magnet control key Type of protection Flameproof enclosures II 26 Fx dh II C T4 Gb -50°C ≤Ta≤+70°C (when lightning arrester is not installed)					
Weight Approx. 6.7 kg Approx. 7.0 kg Operating temperature range*4 -40 °C - +70 °C (no sudden changes) Operating humidity range*4 0 %RH - 95 %RH (no condensation) Operation method Dedicated magnet control key Type of protection Flameproof enclosures II 26 Fx dh II C T4 Gb -50°C ≤Ta≤+70°C (when lightning arrester is not installed)			Approx. 171 (W) \times 277 (H) \times 127 (D) mm Approx. 171 (W) \times 289 (H) \times 127 (D) mm		
Operating temperature range*4 -40 °C - +70 °C (no sudden changes) Operating humidity range*4 O %RH - 95 %RH (no condensation) Operation method Dedicated magnet control key Type of protection Flameproof enclosures II 26 Fx dh II C T4 Gb -50°C < Ta ≤ +70°C (when lightning arrester is not installed)					
Operating humidity range*4 O %RH - 95 %RH (no condensation) Operation method Dedicated magnet control key Type of protection Flameproof enclosures II 26 Fx dh II C T4 Gh -50°C ≤Ta≤+70°C (when lightning arrester is not installed)			-40 °C - +70 °C (no sudden changes)		
Type of protection Flameproof enclosures II 26 Fx dh II C T4 Gh -50°C ≤ Ta ≤ +70°C (when lightning arrester is not installed)	Operating humic	lity range*4			
II 2G Fx dh II C T4 Gh -50° C \leq Ta \leq +70°C (when lightning arrester is not installed)	Operation metho	od	Dedicated magnet control key		
Evalogion— ATEX II 2G Ex db II C T4 Gb, -50°C≤Ta≤+70°C (when lightning arrester is not installed),	Type of protection				
	Explosion-	ATEX	II 2G Ex db IIC T4 Gb, -50°C≦Ta≦+70°C (when lightning arrester is not installed),		
reof -40°C ≤ Ia ≤ +/0°C (when lightning arrester is installed)	•	AILA			
enprovals IECEV EX db II C 14 Gb, -50°C≤Ia≤+70°C (when lightning arrester is not installed),	•	IFCFx			
-40°C ≤ Ta≤+70°C (when lightning arrester is installed)		LULA	-40°C≦Ta≦+70°C (when lightning arrester is installed)		
CE marking ATEX directive, EMC directive, RoHS directive					
HART communication HART7		ion your request when ordering.			

^{*1} Please specify your request when ordering.

^{*2} To ensure explosion protection, use a cable designed for use in temperatures at least 5 °C above the maximum anticipated ambient temperature.

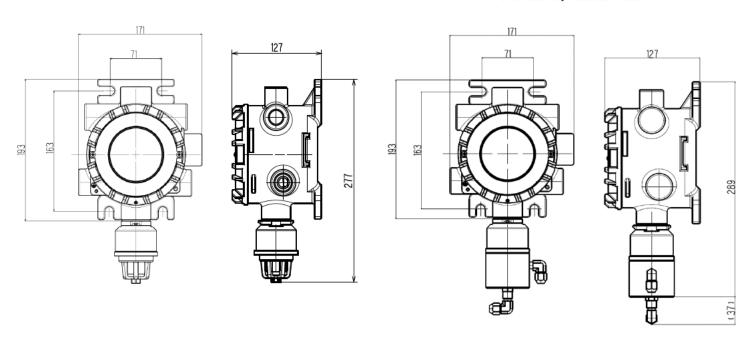
^{*3} Use a power supply capable of minimum temporary output of 2.5 A to ensure that fuses blow normally in the event of a product abnormality.

^{*4} In accordance with sensor specifications if restrictions apply due to sensor specifications.

Dimensional drawings

<Diffusion type>

<Suction type> * Pour into by external unit



Terminal Block Diagram

<Using 3-core cable>

Terminal No.	Power/signal cable connec	tion
1	Power supply (+)	24 V DC
2	Common (Power supply (-), signal (-))	4-20 mA
3	Signal (+)	+ HART
4	Not used	

<Using 4-core cable>

Terminal No.	Power/signal cable connection	
1	Power supply (+)	04 7 00
2	Power supply (-)	24 V DC
3	Signal (+)	4-20 mA
4	Signal (-)	HART

<Contact output (optional) >

Relay1 (ALARM1)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

N.O.: Normal Open N.C.: Normal Close

Relay2 (ALARM2)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

Relay3 (FAULT)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

<u>Gas Detector with Signal Converter SD-3EC Series SPECIFICATION</u>

Mode I		SD-3EC	SD-3DEC	
Detection principle		Electrochemical type		
Detection gas*1		Toxic gas		
Display		7-segment LED (5 digits), 3-color lamp (red, green, yellow)		
Detection range	e*1	Depends on sensor specifications		
Alarm set poin		Depends on sensor specifications		
Sampling method		Diffusion type	Suction type (pour into by external unit)	
Setting flow ra		_	0.4 - 1.5 L/min	
Power supply indication		Power lamp lit (green)		
	Alarm type	Two-step alarm (H-HH)		
Gas	Indication	Alarm lamp lit (red)		
alarm	Reset type*1	Auto reset or self-latching		
	Self-diagnosis	System abnormality (E-9), sensor abnormal	lity (E-1)	
	Indication	Fault lamp lit (yellow), error code displ	-	
Fault alarm	5	System abnormality: Self-latching	•	
	Reset type	Sensor abnormality: Auto reset (self-late	ching if sensor is disconnected)	
	Self-diagnosis		diagnosis, communication diagnosis, sensor warning	
Warnings	Display	Blinking display alternating between gas		
-	Operation	Same as normal operation		
Functions		Alarm delay, suppression, zero follower,	sensitivity correction, HART communication	
External outpu	t*1	Gas concentration signal (4-20 mA DC + HA	ART output), contact output (optional)	
	Transmission	3-wire analog transmission (common power	supply <power common="" signal,="" supply,="">) or</power>	
	Method	2-wire analog transmission (current source	ce)	
		2-wire analog transmission (current source) 4-20 mA DC (non-insulated linear output)		
Gas	Transmission	Maximum load resistance 600 Ω (with derating depending on power supply voltage)		
concentration	Specifications			
signal	Transmission	Shielded cable 1.25 sq (1.38 mm²/AWG16) o		
	cable*2	2. 0 sq $(2.08 \text{ mm}^2/\text{AWG}14)$ (same as power su		
	Transmission	For 1.25 sq (1.38 mm ² /AWG16): Not exceedi		
	Distance	•	_	
Distance		For 2.0 sq (2.08 mm²/AWG14): Not exceeding 2 km (with derating depending on supply voltage) SPDT (× 3): 2 alarms, 1 fault output, non-exciting at normal (exciting at alarm) or exciting		
Alarm contact(Ontional)*1		C, 2 A; 30 V DC, 1 A(resistance load), Minimum load	
Ararıı Gorrage (оретопат/	5V DC, 0.1A	, 2 A, 00 v DO, 1 A (1 corocarioc road), millimani road	
	Input voltage range*3	24 V DC (18 V - 30 V DC)		
	There vorcago rango	Shielded cable 1.25 sq (1.38 mm ² /AWG16) o	v	
Power supply	Power supply cable*2	Shielded cable 1.25 sq (1.38 mm²/AWG16) or 2.0 sq (2.08 mm²/AWG14) (same as transmission cable)		
	Power consumption	Z. U SQ (Z. US mm²/AWG14) (same as transmission cable) Max. 2.8 W		
	Material	Max. 2.8 W Stainless steel: SCS14 (equivalent to SUS316)		
	Cable connectors*1	$M25 \times 1.5$, conversion adapter (optional)		
	Tube connecting port	— (optional)	NPT1/4 (with SUS elbow union for $0.0 \phi 8-1t$)	
	Degrees of protection	Equivalent to IP66/67	MITI/+ (WILLI 300 CIDOW UIIIOII TOT U. V Ψ0-TL)	
Housing	Installation type*1	Wall mounting (standard)/2B pole mounting	(ontional)	
	External dimensions			
	(excluding projections)	Approx. 171 (W) \times 277 (H) \times 127 (D) mm	Approx. 171 (W) \times 289 (H) \times 127 (D) mm	
	Weight	Approx. 6.7 kg	Approx. 7.0 kg	
Operating temperature range*4		-40 °C - +70 °C (no sudden changes)		
Operating humidity range*4		0 %RH - 95 %RH (no condensation)		
Operation meth	od	Dedicated magnet control key		
Type of protection Flameproof enclosures				
Explosion— ATEX II 2G Ex db II C T4 Gb, -50°C ≦Ta≦+70°C (when lightning arrester is not ins				
Explosion- ATEX proof		-40°C≦Ta≦+70°C (when lightning arrester		
proot approvals	IECEx	Ex db II C T4 Gb, -50°C≦Ta≦+70°C (when I		
	ILULA	-40°C≦Ta≦+70°C (when lightning arrester		
CE marking		ATEX directive, EMC directive, RoHS directive		
HART communica		HART7		
1 DI	vour request when ordering			

^{*1} Please specify your request when ordering.

^{*2} To ensure explosion protection, use a cable designed for use in temperatures at least 5 $^{\circ}$ C above the maximum anticipated ambient temperature.

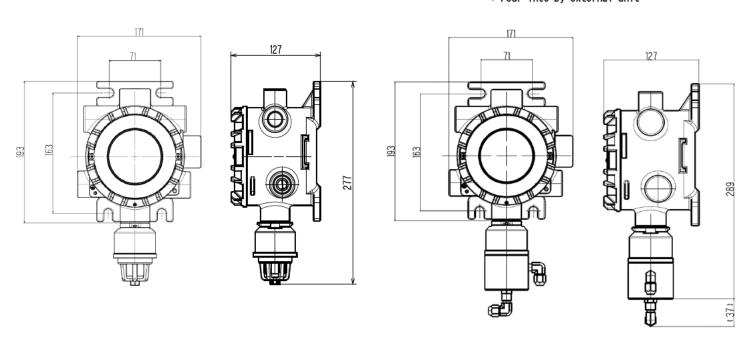
^{*3} Use a power supply capable of minimum temporary output of 2.5 A to ensure that fuses blow normally in the event of a product abnormality.

^{*4} In accordance with sensor specifications if restrictions apply due to sensor specifications.

Dimensional drawings

<Diffusion type>

<Suction type>
* Pour into by external unit



Terminal Block Diagram

<Using 3-core cable>

Terminal No.	Power/signal cable connec	tion
1	Power supply (+)	24 V DC
2	Common (Power supply (-), signal (-))	4-20 mA
3	Signal (+)	+ HART
4	Not used	

<Using 4-core cable>

Terminal No.	Power/signal cable connection	
1	Power supply (+)	04 V D0
2	Power supply (-)	24 V DC
3	Signal (+)	4-20 mA
4	Signal (-)	HART

<Contact output (optional)>

Relay1 (ALARM1)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

N.O.: Normal Open N.C.: Normal Close

Relay2 (ALARM2)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

Relay3 (FAULT)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

<u>Gas Detector with Signal Converter SD-3ECS Series SPECIFICATION</u>

Model		SD-3ECS SD-3DECS		
Detection principle		Electrochemical type		
Detection gas*1		Hydrogen sulfide		
Display		7-segment LED (5 digits), 3-color lamp (red, green, yellow)		
Detection range*1		Depends on sensor specifications		
Alarm set poin		Depends on sensor specifications		
Sampling method		Diffusion type Suction type (pour into by external unit)		
Setting flow ra		- 0.4 - 1.5 L/min		
Power supply in		Power lamp lit (green)		
0	Alarm type	Two-step alarm (H-HH)		
Gas	Indication	Alarm lamp lit (red)		
alarm	Reset type*1	Auto reset or self-latching		
	Self-diagnosis	System abnormality (E-9), sensor abnormality (E-1)		
Fault alarm	Indication	Fault lamp lit (yellow), error code display		
rault aları	Reset type	System abnormality: Self-latching		
	Reset type	Sensor abnormality: Auto reset (self-latching if sensor is disconnected)		
	Self-diagnosis	Sensor life assessment, clock abnormality diagnosis, communication diagnosis, sensor warning		
Warnings	Display	Blinking display alternating between gas concentration and error code		
	Operation	Same as normal operation		
Functions		Alarm delay, suppression, zero follower, sensitivity correction, HART communication		
External output	1	Gas concentration signal (4-20 mA DC + HART output), contact output (optional)		
	Transmission	3-wire analog transmission (common power supply <power common="" signal,="" supply,="">) or</power>		
	Method	2-wire analog transmission (current source)		
	Transmission	4-20 mA DC (non-insulated linear output)		
Gas	Specifications	Maximum load resistance 600 Ω (with derating depending on power supply voltage)		
concentration	oped i i roat rons	Resolution: max. 250 divisions (depending on specifications)		
signal	Transmission	Shielded cable 1.25 sq (1.38 mm ² /AWG16) or		
	cable*2	2.0 sq (2.08 mm ² /AWG14) (same as power supply cable)		
	Transmission	For 1.25 sq (1.38 mm²/AWG16): Not exceeding 1.25 km		
	Distance	For 2.0 sq (2.08 mm²/AWG14): Not exceeding 2 km (with derating depending on supply voltage)		
		SPDT (× 3): 2 alarms, 1 fault output, non-exciting at normal (exciting at alarm) or exciting		
Alarm contact(Optional)*1	at normal(non-exciting at alarm), 250 V AC, 2 A; 30 V DC, 1 A(resistance load), Minimum load		
		5V DC, 0.1A		
	Input voltage range*3	24 V DC (18 V - 30 V DC)		
Power supply	Power supply cable*2	Shielded cable 1.25 sq (1.38 mm²/AWG16) or		
TOWER Suppry	Tower Supply Cable	2.0 sq (2.08 mm ² /AWG14) (same as transmission cable)		
	Power consumption	Max. 2.8 W		
	Material	Stainless steel: SCS14 (equivalent to SUS316)		
	Cable connectors*1	M25 \times 1.5, conversion adapter (optional): NPT3/4, NPT1/2, M20 \times 1.5		
	Tube connecting port	- NPT1/4 (with SUS elbow union for 0.D ϕ 8-1t)		
Housing	Degrees of protection	Equivalent to IP66/67		
	Installation type*1	Wall mounting (standard)/2B pole mounting (optional)		
	External dimensions	Approx. 171 (W) \times 277 (H) \times 127 (D) mm Approx. 171 (W) \times 289 (H) \times 127 (D) mm		
	(excluding projections) Weight	Approx. 6.7 kg Approx. 7.0 kg		
Operating temperature range*4		-40 °C - +70 °C (no sudden changes)		
		0 %RH - 95 %RH (no condensation)		
Operating humidity range*4 Operation method		Dedicated magnet control key		
Type of protection		Flameproof enclosures		
		II 2G Ex db II C T4 Gb, -50°C≦Ta≦+70°C (when lightning arrester is not installed),		
Explosion-	ATEX	-40°C≤Ta≤+70°C (when lightning arrester is installed)		
proof		Ex db IIC T4 Gb, $-50^{\circ}C \le Ta \le +70^{\circ}C$ (when lightning arrester is not installed),		
approvals	IECEx	-40°C≤Ta≤+70°C (when lightning arrester is installed)		
CE marking		ATEX directive, EMC directive, RoHS directive		
HART communica	tion	HART7		
	your request when ordering.			

^{*1} Please specify your request when ordering.

^{*2} To ensure explosion protection, use a cable designed for use in temperatures at least 5 °C above the maximum anticipated ambient temperature.

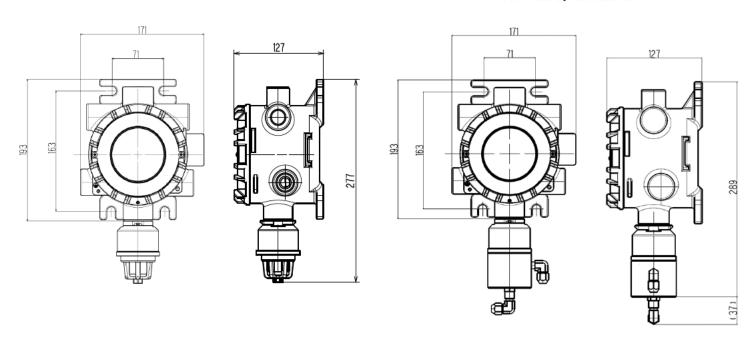
^{*3} Use a power supply capable of minimum temporary output of 2.5 A to ensure that fuses blow normally in the event of a product abnormality.

 $[\]star 4$ In accordance with sensor specifications if restrictions apply due to sensor specifications.

Dimensional drawings

<Diffusion type>

<Suction type> * Pour into by external unit



Terminal Block Diagram

<Using 3-core cable>

Terminal No.	Power/signal cable connec	tion
1	Power supply (+)	24 V DC
2	Common (Power supply (-), signal (-))	4-20 mA
3	Signal (+)	+ HART
4	Not used	

<Using 4-core cable>

Terminal No.	Power/signal cable c	onnection
1	Power supply (+)	04 V D0
2	Power supply (-)	24 V DC
3	Signal (+)	4-20 mA
4	Signal (-)	HART

<Contact output (optional) >

Relay1 (ALARM1)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

N.O.: Normal Open N.C.: Normal Close

Relay2 (ALARM2)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

Relay3 (FAULT)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

<u>Gas Detector with Signal Converter SD-3ECB Series SPECIFICATION</u>

Model		SD-3ECB SD-3DECB	
Detection principle		Electrochemical type	
Detection gas*1		Toxic gas	
Display		7-segment LED (5 digits), 3-color lamp (red, green, yellow)	
Detection range*1		Depends on sensor specifications	
Alarm set poin		Depends on sensor specifications	
Sampling method		Diffusion type Suction type (pour into by external unit)	
Setting flow ra		- 0.4 - 1.5 L/min	
Power supply in		Power lamp lit (green)	
•	Alarm type	Two-step alarm (H-HH)	
Gas	Indication	Alarm lamp lit (red)	
alarm	Reset type*1	Auto reset or self-latching	
	Self-diagnosis	System abnormality (E-9), sensor abnormality (E-1)	
.	Indication	Fault lamp lit (yellow), error code display	
Fault alarm	D	System abnormality: Self-latching	
	Reset type	Sensor abnormality: Auto reset (self-latching if sensor is disconnected)	
	Self-diagnosis	Sensor life assessment, clock abnormality diagnosis, communication diagnosis, sensor warning	
Warnings	Display	Blinking display alternating between gas concentration and error code	
	Operation Operation	Same as normal operation	
Functions	<u> </u>	Alarm delay, suppression, zero follower, sensitivity correction, HART communication	
External outpu	t*1	Gas concentration signal (4-20 mA DC + HART output), contact output (optional)	
	Transmission	3-wire analog transmission (common power supply <power common="" signal,="" supply,="">) or</power>	
	Method	2-wire analog transmission (current source)	
		4-20 mA DC (non-insulated linear output)	
Gas	Transmission	Maximum load resistance 600 Ω (with derating depending on power supply voltage)	
concentration	Specifications	Resolution: max. 250 divisions (depending on specifications)	
signal	Transmission	Shielded cable 1.25 sq (1.38 mm²/AWG16) or	
orgilar	cable*2	2.0 sq (2.08 mm²/AWG14) (same as power supply cable)	
		For 1.25 sq (1.38 mm²/AWG16): Not exceeding 1.25 km	
	Transmission		
	Distance	For 2.0 sq (2.08 mm²/AWG14): Not exceeding 2 km (with derating depending on supply voltage)	
Alaum	0-+:1)*1	SPDT (× 3): 2 alarms, 1 fault output, non-exciting at normal (exciting at alarm) or exciting	
Alarm contact(uptional)"	at normal(non-exciting at alarm), 250 V AC, 2 A; 30 V DC, 1 A(resistance load), Minimum load	
	Immut valtara vanna*3	5V DC, 0.1A	
	Input voltage range*3	24 V DC (18 V - 30 V DC)	
Power supply	Power supply cable*2	Shielded cable 1.25 sq (1.38 mm ² /AWG16) or	
,, ,		2.0 sq (2.08 mm²/AWG14) (same as transmission cable)	
	Power consumption	Max. 3.1 W	
	Material	Stainless steel: SCS14 (equivalent to SUS316)	
	Cable connectors*1	$M25 \times 1.5$, conversion adapter (optional): NPT3/4, NPT1/2, M20 $\times 1.5$	
	Tube connecting port	- NPT1/4 (with SUS elbow union for 0.D ϕ 8-1t)	
Housing	Degrees of protection	Equivalent to IP66/67	
	Installation type*1	Wall mounting (standard)/2B pole mounting (optional)	
	External dimensions	Approx. 171 (W) \times 322 (H) \times 127 (D) mm Approx. 171 (W) \times 334 (H) \times 127 (D) mm	
	(excluding projections)	Annuar 7.2 kg	
Weight		Approx. 7.3 kg Approx. 7.6 kg -40 °C - +70 °C (no sudden changes)	
Operating temperature range*4		0 %RH - 95 %RH (no condensation)	
Operating humidity range*4			
Operation method		Dedicated magnet control key	
Type of protection		Flameproof construction + intrinsically safe explosion-proof construction	
Explosion— ATEX II 2G Ex db ia II C T4 Gb, -40°C≦Ta≦+70°C		II 2G Ex db ia II C T4 Gb, -40°C≦Ta≦+70°C	
proof	IECEx	Ex db ia II C T4 Gb40°C≦Ta≦+70°C	
approvals	ILULA	, – – –	
CE marking		ATEX directive, EMC directive, RoHS directive	
HART communica		HART7	
1 Place enecify	your request when ordering.		

^{*1} Please specify your request when ordering.

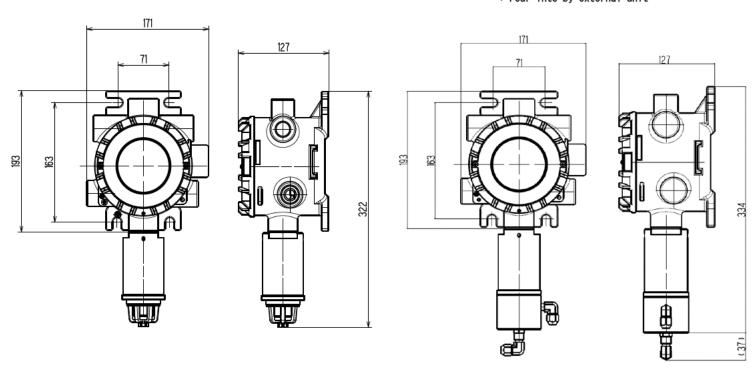
^{*2} To ensure explosion protection, use a cable designed for use in temperatures at least 5 °C above the maximum anticipated ambient temperature.

^{*3} Use a power supply capable of minimum temporary output of 2.5 A to ensure that fuses blow normally in the event of a product abnormality.

^{*4} In accordance with sensor specifications if restrictions apply due to sensor specifications.

<Diffusion type>

<Suction type>
* Pour into by external unit



Terminal Block Diagram

<Using 3-core cable>

Terminal No.	Power/signal cable connec	tion
1	Power supply (+)	24 V DC
2	Common (Power supply (-), signal (-))	4-20 mA
3	Signal (+)	+ HART
4	Not used	

<Using 4-core cable>

Terminal No.	Power/signal cable c	onnection
1	Power supply (+)	04 V D0
2	Power supply (-)	24 V DC
3	Signal (+)	4-20 mA
4	Signal (-)	HART

<Contact output (optional) >

Relay1 (ALARM1)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

N.O.: Normal Open N.C.: Normal Close

Relay2 (ALARM2)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.

Relay3 (FAULT)

Terminal No.	Cable connection
1	N. O.
2	Common
3	N. C.