

Gas Leak Checker

Model SP-220 series

Safety is always in your hand

- For fumigation gases TYPE FUM
- For general gases TYPE SC
(Toxic, Combustible and CFC)
- For town-gas & LP gas
TYPE M TYPE L TYPE ML
- For CFC gases TYPE F
- For hydrogen gas TYPE H2



Easy grip & Robust structure

Ingress proof IP 55, Protection rubber cover is available.

High speed low conc. reading

A new sensor can be detected a low concentration.

Data logging function available

Year/Month/Date/Time, Gas conc., Gas name. "256 data" recordable.

LED light available

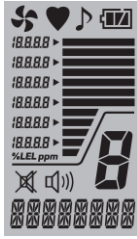
Easy to measure gas leakage at a dark place.

Measurement gas changeable

Easy to change target gas, and display.

● Wealth of information

Easy to confirm what is going on with SP-220



● Built-in LED light

It can help for measuring leakage at a dark place



● Ingress proof IP55

IP5X : Dust protected
IPX5 : Water Jets



Specification for Type FUM & SC

Model	SP-220 TYPE-FUM (Fumigation)	SP-220 TYPE-SC (Toxic, Combustible, CFC)
Target gas	Refer to the gas list	
Detection principle	Hot-wire semiconductor method	
Sensor	SH-8662	
Measuring range	Depends on target gas	
Alarm set point	Depends on target gas	
Accuracy	Displays 0.1 ppm-bar when applied PH3 0.3 ppm.	
Alarm pattern	Gas alarm : Gas concentration reached or over the setting point. Trouble alarm: Sensor connection / breaking, Low battery, Low flow Circuit error, Calibration error	
Alarm method	Non-latching	
Display of alarm	Gas alarm: Flashing LED, Buzzer Trouble alarm: Flashing LED, Buzzer, Display of error message	
Alarm delay time	0 sec.	
Sampling method	Sample draw	
Response time	10 sec.: Time to reach 0.1 ppm when applied PH3 0.3 ppm.	
Output signal	IrDA	
Switch	[AIR][MODE][POWER]	
Display device	LCD	
Display contents	Gas name, Gas concentration, Time, Battery, Pilot indicator, Pump driving indicator	
Power source	2 AA dry cell batteries	
Continuous operation	More than 12 hrs.	
Operating temp. & humidity	-20~+55°C (-4°F~+131°F), 0~95%RH (Non-condensing)	
Dimension & weight	200mm(H) x 43mm(D) x 47mm(W) (Taper nozzle not included), 215g	
Ingress proof	IP 55	
Function	Manual LCD backlight (Automatically ON when alarming), Peak value, Snap logging, Time, Cal alarm	

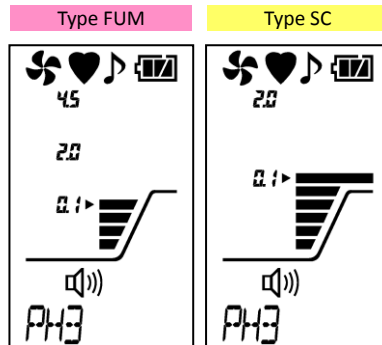
● Standard accessories

- Hand strap
- Protection rubber cover
- Taper nozzle
- 2 x Alkaline battery

● Gas sensitivity & Display

SP-220 automatically changes gas sensitivity level depends on target gas.

Gas sensitivity level can be set on 2 (Type SC) or 3 (Type FUM) scales.
*Refer to right figures.



● SP-220 TYPE-FUM GAS LIST

No.	Gas name	Display	Conc. Display1 (ppm)	Display2 (ppm)	Display3 (ppm)
1	Phosphine	PH3	0.1	2	4.5
2	Methyl bromide	CH3Br	1	20	100
3	Carbon disulfide	CS2	0.1	-	-
4	Methyl iodide	CH3I	1	10	30
5	Hydrogen cyanide	HCN	1	-	-
6	Sulfuryl fluoride	SO2F2	-	-	800
7	Ethylene dibromide	C2H4Br2	1	10	30

● SP-220 TYPE-SC GAS LIST

No.	Gas name	Display	Conc. Display1 (ppm)	Conc. Display2 (ppm)
1	Phosphine	PH3	0.1	2
2	Acetone	C3H6O	1	10
3	Arsine	AsH3	0.2	-
4	Ammonia	NH3	10	-
5	Isobutane	i-C4H10	1	10
6	Isopropyl alcohol	IPA	1	10
7	Carbon monoxide	CO	10	30
8	Ethyl alcohol	C2H5OH	1	10
9	Ethylene	C2H4	1	10
10	Vinyl chloride	VCM	1	-
11	Methyl chloride	CH3CL	1	10
12	Xylene	C8H10	1	10
13	Ethylene oxide	EO	1	10
14	Silane	SiH4	0.5	-
15	Methyl bromide	CH3Br	1	20
16	Hydrogen	H2	1	10
17	Trichloroethylene	C2HCL3	10	-
18	Toluene	C7H8	1	10
19	1,2-Dichloroethane	EDC	1	10
20	Sulfur dioxide	SO2	1	-
21	Propane	C3H8	5	20
22	CFC R-134a	R-134a	50	250
23	CFC R-22	R-22	10	50
24	CFC R-32	R-32	10	50
25	n-hexane	n-C6H14	10	50
26	Benzene	C6H6	0.5	10
27	Formaldehyde	HCHO	10	50
28	Methane	CH4	1	20
29	Methyl alcohol	CH3OH	1	10
30	Methyl ethyl ketone	MEK	1	10
31	Hydrogen sulfide	H2S	0.1	-
32	Diborane	B2H6	0.1	-
33	Germane	GeH4	0.2	-
34	Hydrogen bromide	HBr	10	-
35	Hydrogen chloride	HCL	10	-
36	CFC R-407C	R-407C	10	50
37	Hydrogen selenide	H2Se	0.5	-
38	CFC R-410A	R-410A	10	50
39	CFC R-404A	R-404A	10	50
40	2,3,3,3-Tetrafluoropropene	CH2CF4	10	30

Note 1) 「—」: It means that have sensitivity, but there is no value.
 Note 2) Alarm accuracy, response time etc. are confirmed with calibration gas(PH3)
 Note 3) The measuring results of the gas selection are intended for guidance only.
 For the most accurate measurement is for calibration gas(PH3).

Specification for Type M, L & ML

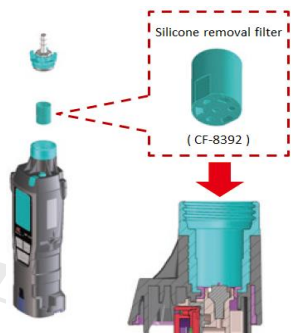
Model	SP-220 TYPE-M	SP-220 TYPE-L	SP-220 TYPE-ML
Detection principle	Hot-wire semiconductor method		
Target gas	Town gas (switchable to LPG)	LPG (switchable to town gas)	Town-gas, LPG (switching) *2 gases are needed for calibration.
Concentration display	LCD level meter + Scale		
Measuring range	10~10000ppm		
Sampling method	Sample draw		
Alarm set point	Default : 30ppm(selectable from 10,30,150,500,2000ppm)		
Display	Operating state disp., Flow check disp., Gas concentration disp., Alarm sound disp., Operation sound disp., Battery level icon, Level meter disp., Mode disp., Gas name and message disp.		
Response time	3 sec.		
Gas alarm display / method	Flashing LED, Buzzer / non-latching		
Trouble alarm	Sensor error, Low battery, Low flow, System error, Calibration error, Clock error, Pump error		
Trouble alarm disp. / method	Flashing LED, Buzzer, Trouble message / latching		
Power source / cont. operation	2 AA dry cell batteries / approx. 13 hrs.		
Operating temp. / hum.	-20~55°C (-4°F~131°F) / 0~95%RH (Non-condensing)		
Safety design	Intrinsically safety ExialICT4		
Approvals / ingress proof	Ex-proof: IECEx, ATEX, other: CE marking / IP55		
Dimension / weight	200(H) × 43(W) × 39(D)mm (Taper nozzle not included) / 215g (Dry cell batteries not included)		

Standard accessories

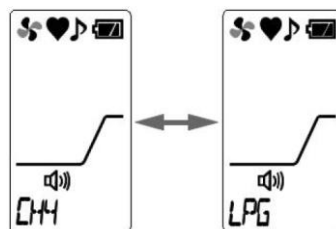
- Hand strap
- Protection rubber cover
- Water proof filter (5 ea.)
- Taper nozzle
- 2 x Alkaline battery
- Silicone removal filter

Built-in Silicone removal filter

Silicone makes a degradation of sensor sensitivity. The SP-220 Type-L, M and ML have a silicone removal filter to prevent effects.



Target gas switchable



Application



For gas pipe joint



For gas cylinder

Specification for Type F & H2

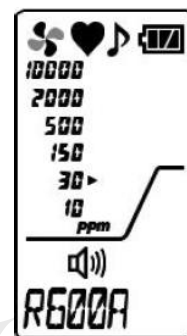
Model	SP-220 TYPE-F	SP-220 TYPE-H2
Detection principle	Hot-wire semiconductor method	
Target gas	CFC gas (refer to the following gas list)	Hydrogen gas (H2 or CH4 calibration)
Measuring range	Depends on a target gas (ex. R600a : 0-10,000ppm)	10-10,000ppm
Sampling method	Sample draw	
Alarm set point	1 point is selectable from scale 1 to 5. (refer to the gas list on next page)	
Display	Operating state disp., Flow check disp., Gas concentration disp., Alarm sound disp., Operation sound disp., Battery level icon, Level meter disp., Mode disp., Gas name and message disp.	
Response time	Within 3 seconds	
Gas alarm disp. / method	Flashing LED, Buzzer / Non-latching	
Trouble alarm	Sensor error, Low battery, Low flow, System error, Calibration error, Clock error, Pump error	
Trouble alarm disp. / method	Flashing LED, Buzzer, Trouble message / Latching	
Power source / cont. operation	2 AA dry cell batteries / approx. 13 hrs.	
Operating temp. / hum.	-20~55°C (-4°F~131°F) / 0~95%RH (Non-condensing)	
Safety design / ingress proof	Intrinsically safety ExialICT4 / IP55	
Approvals	Ex-proof: IECEx, ATEX / Other: CE marking	
Dimension / weight	200(H) × 43(W) × 39(D)mm (Taper nozzle not included) / 215g (Dry cell batteries not included)	

Specification for Type F & H2

SP-220 TYPE-F GAS LIST

Gas No.	Gas	Display	Scale 1 (ppm)	Scale 2 (ppm)	Scale 3 (ppm)	Scale 4 (ppm)	Scale 5 (ppm)	Scale 6 (ppm)
1	R600a (isobutane)	R600A	10	30	150	500	2,000	10,000
2	R290 (propane)	R290	10	50	200	500	2,000	10,000
3	CFC 123	R123	20	100	500	2,000	5,000	10,000
4	CFC 134a	R134A	20	100	500	2,000	5,000	10,000
5	CFC 142b	R142B	10	50	100	200	500	1,000
6	CFC 22	R22	10	50	200	1,000	3,000	10,000
7	CFC 32	R32	10	50	200	500	2,000	10,000
8	CFC 23	R23	10	50	200	500	2,000	5,000
9	CFC 407C	R407C	10	50	200	500	2,000	10,000
10	CFC 410A	R410A	10	50	200	500	2,000	10,000
11	CFC 404A	R404A	10	50	200	500	2,000	5,000
12	2,3,3,3,-Tetrafluoropropene (HFO-1234yf)	R1234YF	10	50	200	500	1,000	2,000
13	CFC 507A	R507A	10	50	200	500	1,000	2,000
14	CFC 407A	R407A	10	50	200	500	2,000	5,000

Display image TYPE-F



▶ = Alarm set point

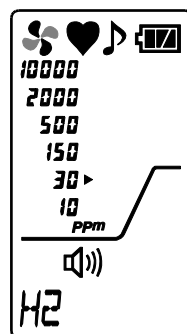
Standard accessories of Type-F

- Hand strap
- Protection rubber cover
- Water proof filter (5 ea.)
- Taper nozzle
- 2 x Alkaline battery

SP-220 TYPE-H2 GAS LIST

Gas No.	Gas	Display	Scale 1 (ppm)	Scale 2 (ppm)	Scale 3 (ppm)	Scale 4 (ppm)	Scale 5 (ppm)	Scale 6 (ppm)
1	Methane	CH4	10	30	150	500	2000	10000
2	Hydrogen	H2	10	30	150	500	2000	10000
3	Acetylene	C2H2	20	30	150	500	2000	10000
4	Ethylene	C2H4	20	30	150	500	2000	10000
5	Ethane	C2H6	10	30	150	500	2000	10000
6	Propylene	C3H6	10	30	150	500	2000	10000
7	Propane	C3H8	10	30	150	500	2000	10000
8	Butadiene	C4H6	10	30	150	500	2000	10000
9	Isobutylene	C4H8	10	30	150	500	2000	10000
10	n-butane	n-C4H10	10	30	150	500	2000	10000
11	Isobutane	i-C4H10	10	30	150	500	2000	10000
12	Cyclopentane	C5H10	10	30	150	500	2000	10000
13	n-hexane	n-C6H14	10	30	150	500	2000	10000
14	CFC 22	R22	10	50	200	1000	3000	10000
15	CFC 134a	R134a	20	100	500	2000	5000	10000
16	HFO-1234yf	R1234yf	10	50	200	500	1000	2000

Display image TYPE-H2



▶ = Alarm set point

Standard accessories of Type-H2

- Hand strap
- Protection rubber cover
- Water proof filter (5 ea.)
- Taper nozzle
- 2 x Alkaline battery
- Silicone removal filter

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