

1000 Series

Portable single gas detectors for Hydrogen and Combustible gases

The Riken Keiki GP-1000 is a compact and lightweight gas detector with high sensitivity for the detection of hydrocarbons. The measurement is performed for this purpose by means of catalytic sensor. The GP-1000 has a built-in pump with pump booster function and a direct selection from a list of 25 hydrocarbons for exact alignment of the target gas - One gas calibration (CH₄).



Features

- ✓ There are 3 standard models:
GP-1000: 0-10%LEL / 0-100%LEL > LEL detector
NC-1000: 0-1000ppm / 0-10000ppm > PPM detector
- ✓ Direct reading of the concentration values of combustible gases of 25 gases (5 NP-1000).
- ✓ Easy operation feature of changing the gas name display with 1 switch button.
- ✓ Long distance drawing possible with the pump booster function.
- ✓ Various combustible gases can be measured by the ppm order with NC-1000.

Technical specifications

Model	GP-1000	NP-1000	NC-1000
Gas detected	Combustible gas (CH ₄ , HC etc. Refer to the gas list)	CH ₄ (C ₃ H ₈ , i-C ₄ H ₁₀ , He, Ar) / H ₂	Combustible gas (CH ₄ , HC etc. Refer to the gas list)
Sensor principle	Catalytic combustion	Thermal conductivity	New ceramic
Detection range	0-100%LEL	0 - 100 vol%	0-10000ppm
Alarm types	Gas alarm: Trouble alarm: Latching, 1st and 2nd alarm Low flow, sensor disconnection, low battery voltage, Circuit abnormality, detection range abnormality	Gas Alarm: ON/OFF setting available (default: OFF), arbitrary alarm setpoint setting available, non-latching (auto-reset) Fault alarm: Flow rate low, poor sensor connection, battery voltage low, circuit abnormality, and calibration range abnormality	Gas alarm: Latching, 1st and 2nd alarm Trouble alarm: Low flow, sensor disconnection, low battery voltage, Circuit abnormality, detection range abnormality
Alarm methods	Gas alarm: Trouble alarm: Continuous buzzer, flashing lights, gas concentration reading blinks Intermittent buzzer, flashing lights, trouble condition is displayed	Gas Alarm: Continuous buzzer sound, blinking of red lamp and gas concentration display (with alarm set to ON) Fault alarm: Intermittent buzzer sound, blinking of red lamp, fault detail display	Gas alarm: Trouble alarm: Continuous buzzer, flashing lights, gas concentration reading blinks Intermittent buzzer, flashing lights, trouble condition is displayed
Preset alarms Indication accuracy	1st: 10%LEL 2nd: 50%LEL Full scale +/- 5% (at same condition)	±5 vol% (under the same conditions)	1st: 250ppm 2nd: 500ppm Low range: Full scale +/- 10% (at same condition) High range: Full scale +/- 5% (at same condition)
Response time	90% response: Within 30 seconds	90% response: Within 30 seconds	90% response: Within 30 seconds
Sampling method	Sample-draw, Flow rate > 0.3L/min (Approx. 0.6L/min for pump boosting mode)	Pump suction type with a flow rate of 0.3 L/min or more (pump L mode)	Sample-draw, Flow rate > 0.3L/min (Approx. 0.6L/min for pump boosting mode)
Indication precision	Digital LCD with 7 segments + Bar meter (50 partitioning) + Status information Digital numeral 7 segments indication: 0 – 100%LEL Digital bar meter indication: Auto range (0 – 10%LEL / 0 – 100%LEL) 0 □10 %LEL (L range) 0□100 %LEL (H range)	LCD seven-segment numeric display, bar meter display (50 divisions) and status information display Seven-segment digital display: 0 - 100 vol% Digital bar meter display: Auto range switching L range: 0 - 10.0 vol% / H range: 0 - 100 vol%	Digital LCD (7 segments) + Bar meter (50 segments) + Status information Digital numeral 7 segments indication: 0 – 10000ppm Digital bar meter indication: Auto range 0□1000ppm (Low range) 0□10000ppm (High range)
Power source	AA alkaline battery x 4	AA alkaline battery x 4	AA alkaline battery x 4
Continuous operation	More than 20 hour (new battery, no alarm and no indication, at 25□)	About 30 hours (new batteries, without alarms or lighting, at 25°C)	CH4 version: Approx. 15 hours / HC version: Approx. 20 hours (New battery, no alarm and no light, at 25□, pump Low mode)
Operating temp. & humidity	Operating temperature -20□50□, humidity 0 – 95%RH (non condensing) Storage temperature -25□60□, humidity 0 – 95%RH (non condensing)	Operating temperature range: -20 - +50°C Operating humidity range: 95%RH or less (non-condensing) Storage temperature range: -25 - +60°C Storage humidity range: 95%RH or less (non-condensing)	Operating temperature -20□50□, humidity 0 - 95%RH (non condensing) Storage temperature -25□60□, humidity 0 - 95%RH (non condensing)
Dimension	80.1 (W) x 124 (H) x 36 (D) mm (projection portions excluded)	80.1 (W) x 124 (H) x 36 (D) mm (projection portions excluded)	80.1 (W) x 124 (H) x 36 (D) mm (projection portions excluded)
Weight	Approx. 260g (9.2 oz.) (exclude alkaline battery)	Approx. 260 g (without batteries)	Approx. 260g (9.2 oz.) (exclude alkaline battery)
Water dust proof	IP 67	IP-67	IP 67
Safety design	Intrinsically safety ExialICT4	Intrinsically safe explosion-proof structure ExialICT4	Intrinsically safety ExialICT4
Approvals	Ex-proof: IECEx, ATEX, TIIS Other: CE marking	Explosion-proof certification: IECEx, ATEX, TIIS Others: CE marking	Ex-proof: IECEx, ATEX Other: CE marking
Function	LCD backlight, data log, log data indication, peak indication Pump boosting, gas select	LCD backlight, data logger, log data display, peak display, switching pump performance between strong and weak, changing a reading target gas, balance gas selection	LCD backlight, data logger, log data indication, peak indication pump boosting, gas select

Target Gas for GP-1000 / NC-1000

No.	Gas list	Name indicated on LCD	Lower explosion limit LEL
1	Methane	CH ₄	5.0vol%
2	Isobutane	i-C ₄ H ₁₀	1.8vol%
3	Hydrogen	H ₂	4.0vol%
4	Methanol	CH ₃ OH	5.5vol%
5	Acetylene	C ₂ H ₂	1.5vol%
6	Etylene	C ₂ H ₄	2.7vol%
7	Ethane	C ₂ H ₆	3.0vol%
8	Ethanol	C ₂ H ₅ OH	3.3vol%
9	Propylene	C ₃ H ₆	2.0vol%
10	Acetone	C ₃ H ₆ O	2.15vol%
11	Propane	C ₃ H ₈	2.0vol%
12	Butadiene	C ₄ H ₆	1.1vol%
13	Cyclopentane	C ₅ H ₁₀	1.4vol%
14	Benzene	C ₆ H ₆	1.2vol%
15	n-Hexane	n-C ₆ H ₁₄	1.2vol%
16	Toluene	C ₇ H ₈	1.2vol%
17	Heptane	n-C ₇ H ₁₆	1.1vol%
18	Xylene	C ₈ H ₁₀	1.0vol%
19	Ethyl acetate	EtAc	2.1vol%
20	IPA	IPA	2.0vol%
21	MEK	MEK	1.8vol%
22	Methyl methacrylate	MAA	1.7vol%
23	Dimethylether	DME	3.0vol%
24	Methyl isobutyl ketone	MIBK	1.2vol%
25	Tetrahydrofuran	THF	2.0vol%

NP-1000 Gas List

No.	Gas list	Name indicated on LCD
1	Methane	CH ₄
2	Propane	C ₃ H ₈
3	Isobutane	i-C ₄ H ₁₀
4	Argon	Ar
5	Helium	He
*	Hydrogen	H ₂

NP-1000 Base Gas list

No.	Gas list	Name indicated on LCD
1	Air	Air
2	Nitrogen	N ₂
3	Carbon Dioxide	CO ₂

The Bruusgaard System



TBS is a unique turnkey portable gas detection solution, giving you increased safety and substantial cost savings through standardised instruments, routines, training and procurement.

Logistic Support

At any given time we know the status of all vessels and sites covered by The Bruusgaard System. We consolidate all shipments and make sure you have everything you need on board until next scheduled delivery. This results in fewer shipments and substantial savings!

- Year round follow up of instruments, spares and consumables
- Handling of all shipments & logistics
- Annual reports per vessel including budgeting



Safety

QA – strict routines and logging

- Crew are able to use instruments and follow routines correctly
- Instruments are in proper working condition at all times
- Instruments are calibrated at correct intervals
- Sensors and other items are replaced at correct intervals
- Usage of instruments is logged, including abnormal observations
- Traceability – instrument history and usage
- Routines and procedures can merge into the overall QA-system

Effective and proven training is an integrated part of The Bruusgaard System.

Instruments

All the equipment used for gas detection and calibration is placed in a custom-made wall cabinet. Including Log & Instruction Manual, which are crucial to maintaining the safety integrity.

- Standardised vessel specific gas detector solutions
- Total solutions including all equipment and routines necessary for efficient and safe use, storage and maintenance

Cost Savings

Some of our customers have been able to go from 8 to 10 suppliers down to 1 – translating into cost savings of up to 40-50%. For one vessel, this could be thousands of dollars annually, and for a whole fleet, the cost savings can be dramatic. This is achieved through:

- One contact for worldwide supply of spares & gases
- All service and calibration can be done on site.
- Reductions of instrument types from 10-12 to 2-3

Reduced maintenance costs through:

- On board calibration
- Fewer instruments on board
- No need for spares on board
- One PO per year
- Increased safety
- Less use of administrative time