

MS104K-L Portable Single-Gas Detector

BTYQ-MS104K-L

A portable pump-sampling gas detector for application-specific single-gas monitoring.

Revision TS-20261008-42b745a2 | Prepared 2026-10-08 from approved product data

Shenzhen Eranntex Electronics Co., Ltd.

Portable pump sampling for single-gas monitoring

BTYQ-MS104K-L is a portable single-gas detector designed for rapid leak checks and concentration monitoring. Its built-in pump has adjustable flow and supports pumped, diffusion and combined pump-plus-diffusion sampling modes.

The instrument provides pump-blockage alarms, Type-C data communication, data logging and man-down alarming. The target gas, measuring range and sensor principle are selected for the operating environment and must be confirmed for each requested configuration.

Runtime depends on sampling mode

Pump operation provides 12 hours of runtime. With the pump off, diffusion operation using an electrochemical sensor exceeds 100 hours. These figures apply to different operating conditions and should not be treated as interchangeable.

Technical data

Ingress protection	IP66
Dimensions	165 × 64 × 61 mm (maximum L × W × H)
Weight	Approx. 280 g
Battery voltage	7.4 V
Battery capacity	1,250 mAh - Equivalent source representation: 3.7 V / 2500 mAh.
Operating temperature	-20 °C to 55 °C - Typical operating range.
Data storage	100,000 records
Alarm volume	> 95 dB - At 30 cm.
Sampling method	Pump
Battery runtime	12 h - Pump operation; with the pump off, diffusion operation using an electrochemical sensor exceeds 100 hours.
Display size	2 in
Standard gas configuration	1 gas
Expanded gas configuration	No higher gas-count expansion documented
Typical measurement accuracy	≤ ±3% FS; higher-accuracy sensors available
Response time	T90 ≤ 20 s

Recovery time	≤ 30 s
Operating humidity	10-95% RH, non-condensing
Explosion protection	Ex ia IIC T4 Ga
Housing	High-strength, corrosion-resistant, flame-retardant polycarbonate with rubber protective sleeve; drop resistance ≥5 m
Enclosure option	IP68 available as a custom configuration
Diffusion runtime	Over 100 h with pump off and an electrochemical sensor

Communication and positioning options

Interface	Availability	Notes
USB-C	Standard	
Bluetooth	Optional	

Supported Gas Configurations

Each row describes one supported gas and measuring range. It does not identify an installed detection channel or an orderable part number. Gas combinations, sensor compatibility and the final configuration require technical confirmation.

Gas	Measuring range	Resolution / notes
Hydrogen Sulfide (H2S)	0-10 ppm	0.01 ppm
Hydrogen Sulfide (H2S)	0-100 ppm	0.01 ppm
Hydrogen Sulfide (H2S)	0-500 ppm	0.1 ppm
Hydrogen Sulfide (H2S)	0-2,000 ppm	1 ppm
Carbon Monoxide (CO)	0-100 ppm	0.01 ppm
Carbon Monoxide (CO)	0-1,000 ppm	0.1 ppm
Carbon Monoxide (CO)	0-2,000 ppm	1 ppm
Carbon Monoxide (CO)	0-5,000 ppm	1 ppm
Carbon Monoxide (CO)	0-10,000 ppm	1 ppm
Oxygen (O2)	0-30 %Vol	0.01 %Vol
Oxygen (O2)	0-100 %Vol	0.01 %Vol
Methane (CH4)	0-100 %LEL	0.1 %LEL
Methane (CH4)	0-100 %Vol	0.01 %Vol
Carbon Dioxide (CO2)	0-5 %Vol	0.01 %Vol
Carbon Dioxide (CO2)	0-20 %Vol	0.01 %Vol
Carbon Dioxide (CO2)	0-100 %Vol	0.01 %Vol
Carbon Dioxide (CO2)	0-5,000 ppm	1 ppm

Gas	Measuring range	Resolution / notes
Carbon Dioxide (CO2)	0-50,000 ppm	1 ppm
Ammonia (NH3)	0-100 %LEL	0.1 %LEL
Ammonia (NH3)	0-10 ppm	0.01 ppm
Ammonia (NH3)	0-100 ppm	0.01 ppm
Ammonia (NH3)	0-1,000 ppm	0.1 ppm
Ammonia (NH3)	0-5,000 ppm	1 ppm
Chlorine (Cl2)	0-20 ppm	0.01 ppm
Chlorine (Cl2)	0-200 ppm	0.1 ppm
Sulfur Dioxide (SO2)	0-20 ppm	0.01 ppm
Sulfur Dioxide (SO2)	0-100 ppm	0.01 ppm
Sulfur Dioxide (SO2)	0-1,000 ppm	0.1 ppm
Sulfur Dioxide (SO2)	0-5,000 ppm	1 ppm
Nitric Oxide (NO)	0-20 ppm	0.01 ppm
Nitric Oxide (NO)	0-100 ppm	0.01 ppm
Nitric Oxide (NO)	0-1,000 ppm	0.1 ppm
Nitric Oxide (NO)	0-5,000 ppm	1 ppm
Nitrogen Dioxide (NO2)	0-20 ppm	0.01 ppm
Nitrogen Dioxide (NO2)	0-100 ppm	0.01 ppm
Nitrogen Dioxide (NO2)	0-1,000 ppm	0.1 ppm
Nitrogen Dioxide (NO2)	0-2,000 ppm	1 ppm
Hydrogen (H2)	0-100 %LEL	0.1 %LEL
Hydrogen (H2)	0-100 %Vol	0.01 %Vol
Hydrogen (H2)	0-1,000 ppm	0.1 ppm
Hydrogen (H2)	0-20,000 ppm	1 ppm
Hydrogen (H2)	0-40,000 ppm	1 ppm
Volatile Organic Compounds (VOC)	0-20 ppm	0.01 ppm
Volatile Organic Compounds (VOC)	0-200 ppm	0.1 ppm
Volatile Organic Compounds (VOC)	0-2,000 ppm	1 ppm
Volatile Organic Compounds (VOC)	0-10,000 ppm	1 ppm
Hydrogen Cyanide (HCN)	0-30 ppm	0.01 ppm
Hydrogen Cyanide (HCN)	0-100 ppm	0.01 ppm

Gas	Measuring range	Resolution / notes
Hydrogen Chloride (HCl)	0-20 ppm	0.01 ppm
Hydrogen Chloride (HCl)	0-200 ppm	0.1 ppm
Phosphine (PH ₃)	0-5 ppm	0.001 ppm
Phosphine (PH ₃)	0-20 ppm	0.01 ppm
Phosphine (PH ₃)	0-2,000 ppm	1 ppm
Combustible Gas (EX)	0-100 %LEL	0.1 %LEL
Combustible Gas (EX)	0-100 %Vol	0.01 %Vol
Combustible Gas (EX)	0-1,000 ppm	1 ppm
Chlorine Dioxide (ClO ₂)	0-1 ppm	0.001 ppm
Chlorine Dioxide (ClO ₂)	0-10 ppm	0.01 ppm
Chlorine Dioxide (ClO ₂)	0-100 ppm	0.01 ppm
Ethylene Oxide (ETO)	0-100 %LEL	0.1 %LEL
Ethylene Oxide (ETO)	0-100 ppm	0.01 ppm
Ethylene Oxide (ETO)	0-1,000 ppm	0.1 ppm
Phosgene (COCl ₂)	0-1 ppm	0.001 ppm
Phosgene (COCl ₂)	0-10 ppm	0.01 ppm
Silane (SiH ₄)	0-1 ppm	0.001 ppm
Silane (SiH ₄)	0-50 ppm	0.01 ppm
Fluorine (F ₂)	0-1 ppm	0.001 ppm
Fluorine (F ₂)	0-10 ppm	0.001 ppm
Fluorine (F ₂)	0-100 ppm	0.01 ppm
Hydrogen Fluoride (HF)	0-10 ppm	0.01 ppm
Hydrogen Fluoride (HF)	0-50 ppm	0.01 ppm
Formaldehyde (CH ₂ O)	0-10 ppm	0.01 ppm
Formaldehyde (CH ₂ O)	0-50 ppm	0.01 ppm
Formaldehyde (CH ₂ O)	0-100 ppm	0.01 ppm
Formaldehyde (CH ₂ O)	0-1,000 ppm	1 ppm
Hydrogen Bromide (HBr)	0-50 ppm	0.01 ppm
Diborane (B ₂ H ₆)	0-10 ppm	0.001 ppm
Arsine (AsH ₃)	0-1 ppm	0.001 ppm
Arsine (AsH ₃)	0-10 ppm	0.001 ppm

Gas	Measuring range	Resolution / notes
Ozone (O3)	0-1 ppm	0.001 ppm
Ozone (O3)	0-10 ppm	0.01 ppm
Ozone (O3)	0-100 ppm	0.01 ppm
Ozone (O3)	0-2,000 ppm	1 ppm
Germane (GeH4)	0-1 ppm	0.001 ppm
Germane (GeH4)	0-10 ppm	0.001 ppm
Germane (GeH4)	0-50 ppm	0.01 ppm
Hydrazine (N2H4)	0-1 ppm	0.001 ppm
Hydrazine (N2H4)	0-300 ppm	0.1 ppm
Tetrahydrothiophene (THT)	0-50 mg/m3	0.01 mg/m3
Bromine (Br2)	0-10 ppm	0.01 ppm
Bromine (Br2)	0-50 ppm	0.01 ppm
Acetylene (C2H2)	0-100 %LEL	0.1 %LEL
Acetylene (C2H2)	0-100 ppm	0.1 ppm
Acetylene (C2H2)	0-1,000 ppm	1 ppm
Ethylene (C2H4)	0-10 ppm	0.01 ppm
Ethylene (C2H4)	0-100 ppm	0.1 ppm
Ethylene (C2H4)	0-1,000 ppm	1 ppm
Ethanol (C2H6O)	0-100 %LEL	0.1 %LEL
Ethanol (C2H6O)	0-100 ppm	0.1 ppm
Ethanol (C2H6O)	0-2,000 ppm	1 ppm
Methanol	0-100 %LEL	0.1 %LEL
Methanol	0-100 ppm	0.1 ppm
Methanol	0-2,000 ppm	1 ppm
Nitrogen Oxides (NOx)	0-100 ppm	0.01 ppm
Nitrogen Oxides (NOx)	0-500 ppm	0.1 ppm
Nitrogen Oxides (NOx)	0-2,000 ppm	1 ppm
Carbon Disulfide (CS2)	0-50 ppm	0.01 ppm
Acrylonitrile (C3H3N)	0-100 ppm	0.01 ppm
Nitrous Oxide (N2O)	0-1,000 ppm	1 ppm
Methylamine	0-50 ppm	0.01 ppm

Gas	Measuring range	Resolution / notes
Nitrogen (N ₂)	0-100 %Vol	0.01 %Vol
Benzene (C ₆ H ₆)	0-200 ppm	0.1 ppm
Toluene (C ₇ H ₈)	0-200 ppm	0.1 ppm
Xylene (C ₈ H ₁₀)	0-200 ppm	0.1 ppm
Styrene (C ₈ H ₈)	0-200 ppm	0.1 ppm
Vinyl Chloride (C ₂ H ₃ Cl)	0-200 ppm	0.1 ppm
Trichloroethylene (C ₂ HCl ₃)	0-200 ppm	0.1 ppm
Tetrachloroethylene (PID) (C ₂ Cl ₄)	0-200 ppm	0.1 ppm
Methyl Bromide (CH ₃ Br)	0-200 mg/m ³	0.1 mg/m ³
Methyl Bromide (CH ₃ Br)	0-100 ppm	0.1 ppm
Ethanethiol (C ₂ H ₅ SH)	0-10 mg/m ³	0.01 mg/m ³
Nitrogen Tetroxide (N ₂ O ₄)	0-100 ppm	0.01 ppm

Document scope

This summary records the approved model data shown on the product page. It is not an operating manual, installation approval or certificate. Review the applicable certificate record and exact model or configuration scope separately. Request the operating instructions for the supplied configuration before installation or use.

Product information and inquiry: <https://www.eranntex.com/products/ms104k-l/>