

MS104K-S2 Portable Single- or Two-Gas Detector

BTYQ-MS104K-S2

A portable diffusion gas detector configurable for single- or two-gas monitoring.

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Single- or two-gas monitoring

BTYQ-MS104K-S2 is a compact portable diffusion gas detector configurable for single- or two-gas monitoring. Depending on the confirmed configuration, it can monitor up to two gases simultaneously. The requested gases, ranges and sensor compatibility must be confirmed.

The product uses a 7.4 V / 1750 mAh battery. Its TN 754042 battery report records 12.95 Wh for product and transport/safety documentation. A 2-inch monochrome LCD, USB-C charging and data communication, and storage for more than one million records are documented as standard.

One- or two-gas configurations

Single- and two-gas configurations are documented. Each two-gas configuration must be confirmed for sensor compatibility, measuring range, operating environment and application requirements.

Documented standard configuration

The documented standard configuration includes a 2-inch monochrome LCD, USB-C charging and data communication, more than one million data records, and Chinese and English interface languages. Standard accessories include a calibration cap, operating instructions, a product conformity document, a USB charger with data cable, and an instrument packaging box.

Options selected for the application

Available options include a high-resolution color display, 4G, Wi-Fi, LoRa, MESH, Bluetooth, GPS and BeiDou positioning options, screen rotation, an external Bluetooth printer, a protective carrying case and a data SIM card. Additional gases, measuring ranges, interface languages and an extended operating-temperature range are handled as custom requirements.

IP68 enclosure protection

The product is specified as IP68. Available evidence records different test conditions for the product document, commissioned sample testing and the explosion-proof certificate scope, so the applicable configuration and cited conditions must be checked for each project.

Technical data

Sampling method	Diffusion
Ingress protection	IP68
Dimensions	107 × 63 × 40 mm (L × W × H); belt-clip thickness excluded.
Weight	Approx. 230 g - Weight varies by configuration.
Battery voltage	7.4 V

Battery capacity	1,750 mAh - TN 754042 battery report: 12.95 Wh, also represented as 3.7 V / 3500 mAh. This report supports product battery and transport/safety documentation.
Battery runtime	> 48 h - With real-time 4G transmission and GPS/BeiDou positioning active, as stated in the source.
Operating temperature	-20 °C to 55 °C
Display size	2 in
Data storage	> 1,000,000 records
Alarm volume	> 95 dB - Measured at 30 cm; source also states >90 dB at 1 m.
Gas configuration	1-2 gases
Display configuration	2-inch monochrome LCD as standard; high-resolution color display optional
Relative humidity	10-95 %RH
Housing material	PC + TPE
Interface languages	Chinese and English as standard; other languages customizable
Standard accessories	Calibration cap; operating instructions; product conformity document; USB charger with data cable; instrument packaging box
Optional accessories	External Bluetooth printer; protective carrying case; data SIM card

Communication and positioning options

Interface	Availability	Notes
USB-C	Standard	Fast charging and data communication.
4G	Optional	
Wi-Fi	Optional	
LoRa	Optional	
MESH	Optional	
Bluetooth	Optional	
GPS	Optional	
BeiDou	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	0.001 ppm
Hydrogen Sulfide (H2S)	0-50 ppm	0.01 ppm
Hydrogen Sulfide (H2S)	0-100 ppm	0.01 ppm

Gas	Measuring range	Resolution / notes
Hydrogen Sulfide (H2S)	0-2,000 ppm	0.1 ppm
Hydrogen Sulfide (H2S)	0-10,000 ppm	1 ppm
Carbon Monoxide (CO)	0-100 ppm	0.1 ppm
Carbon Monoxide (CO)	0-1,000 ppm	0.1 ppm
Carbon Monoxide (CO)	0-2,000 ppm	0.1 ppm
Carbon Monoxide (CO)	0-20,000 ppm	1 ppm
Carbon Monoxide (CO)	0-100,000 ppm	1 ppm
Oxygen (O2)	0-30 %Vol	0.01 %Vol
Oxygen (O2)	0-100 %Vol	0.01 %Vol
Oxygen (O2)	0-5,000 ppm	1 ppm
Methane (CH4)	0-100 %LEL	0.1 %LEL
Methane (CH4)	0-100 %Vol	0.1 %Vol
Carbon Dioxide (CO2)	0-20 %Vol	0.01 %Vol
Carbon Dioxide (CO2)	0-100 %Vol	0.01 %Vol
Carbon Dioxide (CO2)	0-500 ppm	1 ppm
Carbon Dioxide (CO2)	0-2,000 ppm	1 ppm
Carbon Dioxide (CO2)	0-5,000 ppm	1 ppm
Carbon Dioxide (CO2)	0-50,000 ppm	1 ppm
Ammonia (NH3)	0-100 %LEL	0.1 %LEL
Ammonia (NH3)	0-50 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)	0-10 ppm	0.001 ppm
Chlorine (Cl2)	0-20 ppm	0.01 ppm
Chlorine (Cl2)	0-200 ppm	0.1 ppm
Chlorine (Cl2)	0-2,000 ppm	0.1 ppm
Sulfur Dioxide (SO2)	0-10 ppm	0.001 ppm
Sulfur Dioxide (SO2)	0-20 ppm	0.01 ppm
Sulfur Dioxide (SO2)	0-100 ppm	0.01 ppm
Sulfur Dioxide (SO2)	0-500 ppm	0.1 ppm

Gas	Measuring range	Resolution / notes
Sulfur Dioxide (SO ₂)	0-2,000 ppm	0.1 ppm
Sulfur Dioxide (SO ₂)	0-10,000 ppm	1 ppm
Nitric Oxide (NO)	0-10 ppm	0.001 ppm
Nitric Oxide (NO)	0-100 ppm	0.01 ppm
Nitric Oxide (NO)	0-2,000 ppm	0.1 ppm
Nitric Oxide (NO)	0-5,000 ppm	1 ppm
Nitrogen Dioxide (NO ₂)	0-10 ppm	0.001 ppm
Nitrogen Dioxide (NO ₂)	0-100 ppm	0.01 ppm
Nitrogen Dioxide (NO ₂)	0-1,000 ppm	0.1 ppm
Nitrogen Dioxide (NO ₂)	0-5,000 ppm	1 ppm
Hydrogen (H ₂)	0-100 %LEL	0.1 %LEL
Hydrogen (H ₂)	0-100 %Vol	0.01 %Vol
Hydrogen (H ₂)	0-1,000 ppm	0.1 ppm
Hydrogen (H ₂)	0-20,000 ppm	1 ppm
Hydrogen (H ₂)	0-40,000 ppm	1 ppm
Volatile Organic Compounds (VOC)	0-10 ppm	0.001 ppm
Volatile Organic Compounds (VOC)	0-10 ppm	0.01 ppm
Volatile Organic Compounds (VOC)	0-100 ppm	0.01 ppm
Volatile Organic Compounds (VOC)	0-2,000 ppm	0.1 ppm
Volatile Organic Compounds (VOC)	0-200,000 ppm	1 ppm
Hydrogen Cyanide (HCN)	0-30 ppm	0.01 ppm
Hydrogen Cyanide (HCN)	0-100 ppm	0.01 ppm
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)	0-25 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	0.1 %Vol
Chlorine Dioxide (ClO ₂)	0-1 ppm	0.001 ppm
Chlorine Dioxide (ClO ₂)	0-10 ppm	0.01 ppm

Gas	Measuring range	Resolution / notes
Chlorine Dioxide (ClO ₂)	0-200 ppm	0.01 ppm
Ethylene Oxide (ETO)	0-100 %LEL	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)	0-50 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	0.01 ppm
Fluorine (F ₂)	0-50 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	0.001 ppm
Formaldehyde (CH ₂ O)	0-10 ppm	0.01 ppm
Formaldehyde (CH ₂ O)	0-100 ppm	0.01 ppm
Formaldehyde (CH ₂ O)	0-5,000 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	0.01 ppm
Arsine (AsH ₃)	0-50 ppm	0.01 ppm
Ozone (O ₃)	0-20 mg/L	0.01 mg/L
Ozone (O ₃)	0-1 ppm	0.001 ppm
Ozone (O ₃)	0-5 ppm	0.001 ppm
Ozone (O ₃)	0-50 ppm	0.01 ppm
Ozone (O ₃)	0-100 ppm	0.01 ppm
Ozone (O ₃)	0-2,000 ppm	0.1 ppm
Ozone (O ₃)	0-30,000 ppm	1 ppm
Germane (GeH ₄)	0-2 ppm	0.001 ppm
Germane (GeH ₄)	0-20 ppm	0.01 ppm

Gas	Measuring range	Resolution / notes
Hydrazine (N ₂ H ₄)	0-1 ppm	0.001 ppm
Hydrazine (N ₂ H ₄)	0-300 ppm	0.1 ppm
Tetrahydrothiophene (THT)	0-100 mg/m ³	0.01 mg/m ³
Bromine (Br ₂)	0-10 ppm	0.001 ppm
Bromine (Br ₂)	0-100 ppm	0.01 ppm
Bromine (Br ₂)	0-2,000 ppm	1 ppm
Acetylene (C ₂ H ₂)	0-100 %LEL	0.1 %LEL
Acetylene (C ₂ H ₂)	0-100 ppm	0.01 ppm
Acetylene (C ₂ H ₂)	0-1,000 ppm	0.1 ppm
Ethylene (C ₂ H ₄)	0-100 %LEL	0.1 %LEL
Ethylene (C ₂ H ₄)	0-100 ppm	0.01 ppm
Ethylene (C ₂ H ₄)	0-2,000 ppm	0.1 ppm
Ethanol (C ₂ H ₆ O)	0-100 ppm	0.01 ppm
Ethanol (C ₂ H ₆ O)	0-2,000 ppm	1 ppm
Methanol	0-100 ppm	0.01 ppm
Methanol	0-2,000 ppm	1 ppm
Nitrogen Oxides (NO _x)	0-10 ppm	0.001 ppm
Nitrogen Oxides (NO _x)	0-100 ppm	0.01 ppm
Nitrogen Oxides (NO _x)	0-2,000 ppm	0.1 ppm
Nitrogen Oxides (NO _x)	0-5,000 ppm	1 ppm
Carbon Disulfide (CS ₂)	0-50 ppm	0.01 ppm
Carbon Disulfide (CS ₂)	0-5,000 ppm	0.01 ppm
Acrylonitrile (C ₃ H ₃ N)	0-50 ppm	0.01 ppm
Acrylonitrile (C ₃ H ₃ N)	0-2,000 ppm	1 ppm
Nitrous Oxide (N ₂ O)	0-100 ppm	0.01 ppm
Methylamine	0-50 ppm	0.01 ppm
Nitrogen (N ₂)	0-100 %Vol	0.01 %Vol
Benzene (C ₆ H ₆)	0-10 ppm	0.01 ppm
Benzene (C ₆ H ₆)	0-100 ppm	0.01 ppm
Benzene (C ₆ H ₆)	0-2,000 ppm	1 ppm
Benzene (C ₆ H ₆)	0-20,000 ppm	1 ppm

Gas	Measuring range	Resolution / notes
Toluene (C7H8)	0-10 ppm	0.01 ppm
Toluene (C7H8)	0-100 ppm	0.01 ppm
Toluene (C7H8)	0-2,000 ppm	0.1 ppm
Toluene (C7H8)	0-20,000 ppm	1 ppm
Xylene (C8H10)	0-10 ppm	0.01 ppm
Xylene (C8H10)	0-100 ppm	0.01 ppm
Xylene (C8H10)	0-2,000 ppm	0.1 ppm
Xylene (C8H10)	0-20,000 ppm	1 ppm
Styrene (C8H8)	0-200 ppm	0.1 ppm
Styrene (C8H8)	0-5,000 ppm	1 ppm
Vinyl Chloride (C2H3Cl)	0-100 ppm	0.01 ppm
Trichloroethylene (C2HCl3)	0-100 ppm	0.01 ppm
Tetrachloroethylene (PID) (C2Cl4)	0-100 ppm	0.01 ppm
Methyl Bromide (CH3Br)	0-200 g/m3	0.1 g/m3
Methyl Bromide (CH3Br)	0-100 ppm	0.01 ppm
Methyl Bromide (CH3Br)	0-30,000 ppm	1 ppm
Helium (He)	0-100 %Vol	0.01 %Vol
Argon (Ar)	0-100 %Vol	0.01 %Vol
Xenon (Xe)	0-100 %Vol	0.01 %Vol
Ozone in Water	0-20 mg/L	0.01 mg/L
Nitrogen Trifluoride (NF3)	0-100 ppm	0.01 ppm
Hydrogen Peroxide (H2O2)	0-100 ppm	0.01 ppm
Sulfuryl Fluoride (SO2F2)	0-100 ppm	0.01 ppm
Sulfuryl Fluoride (SO2F2)	0-5,000 ppm	1 ppm
Sulfuryl Fluoride (SO2F2)	0-10,000 ppm	1 ppm
Acetaldehyde	0-10 ppm	0.01 ppm
Total Volatile Organic Compounds (TVOC)	0-10 ppm	0.001 ppm
Total Volatile Organic Compounds (TVOC)	0-10 ppm	0.01 ppm
Total Volatile Organic Compounds (TVOC)	0-100 ppm	0.01 ppm
Total Volatile Organic Compounds (TVOC)	0-2,000 ppm	0.1 ppm
Total Volatile Organic Compounds (TVOC)	0-200,000 ppm	1 ppm

Gas	Measuring range	Resolution / notes
Iodine (I2)	0-50 ppm	0.01 ppm

Configuration questions

How many gases can BTYQ-MS104K-S2 monitor?

The product is configurable for one or two gases and can monitor up to two gases simultaneously, depending on the confirmed configuration. Specify the gases and measuring ranges so sensor compatibility can be checked.

Which display is supplied as standard?

The standard configuration uses a 2-inch monochrome LCD. A high-resolution color display is available as an option.

Which communication and positioning options are available?

4G, Wi-Fi, LoRa, MESH and Bluetooth communication, plus GPS and BeiDou positioning, are optional. Specify the functions needed for the application so their combination can be confirmed.

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-s2/>