

MS400-S Portable Multigas Detector

BTYQ-MS400-S

A portable pumped detector with standard one- to four-gas configurations and expanded configurations for up to six gases; switchable to diffusion sampling.

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Pumped and diffusion monitoring in standard and expanded configurations

BTYQ-MS400-S is a portable multigas detector with standard configurations for one to four gases and expanded configurations for up to six gases. It uses a built-in pump for remote or probe sampling and can be switched to diffusion sampling for ambient monitoring. Each requested gas and range combination requires confirmation.

Plug-in digital sensor modules, a 2.4-inch color display, Type-C charging and communication, and data storage support field measurement and record review. Wireless communication, positioning and other connected functions are configuration options that must be specified for the project.

Technical data

Ingress protection	IP68
Dimensions	147 × 83 × 50 mm (maximum L × W × H)
Weight	Approx. 430 g
Battery voltage	7.4 V
Battery capacity	2,700 mAh
Battery runtime	> 20 h - Pump operation; documented runtime exceeds 20 hours.
Operating temperature	-20 °C to 55 °C
Display size	2.4 in
Data storage	> 1,000,000 records
Alarm volume	> 95 dB - At 30 cm.
Sampling method	Pump
Standard gas configuration	1-4 gases
Expanded gas configuration	Up to 6 gases
Sampling modes	Built-in pump; switchable to diffusion
Typical accuracy	≤ ±3% FS; higher-accuracy sensor option available
Response time	T90 ≤ 20 s (general)
Recovery time	≤ 30 s (general)
Operating humidity	10-95% RH

Explosion protection	Ex ia IIC T4 Ga
Standard accessories	T-fitting, filter, 0.2 m gooseneck sampling probe, instructions, conformity document, USB charger and data cable, carrying case

Communication and positioning options

Interface	Availability	Notes
USB-C	Standard	
RS485	Optional	
Bluetooth	Optional	
Wi-Fi	Optional	
LoRa	Optional	
MESH	Optional	
4G	Optional	
NB-IoT	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

Gas	Measuring range	Resolution / notes
Carbon Dioxide (CO2)	0-100 %Vol	0.01 %Vol
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)	0-10 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

Gas	Measuring range	Resolution / notes
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)	0-20 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

Gas	Measuring range	Resolution / notes
Arsine (AsH ₃)	0-1 ppm	0.001 ppm
Arsine (AsH ₃)	0-10 ppm	0.001 ppm
Ozone (O ₃)	0-1 ppm	0.001 ppm
Ozone (O ₃)	0-10 ppm	0.01 ppm
Ozone (O ₃)	0-100 ppm	0.01 ppm
Ozone (O ₃)	0-2,000 ppm	1 ppm
Germane (GeH ₄)	0-1 ppm	0.001 ppm
Germane (GeH ₄)	0-10 ppm	0.001 ppm
Germane (GeH ₄)	0-50 ppm	0.01 ppm
Hydrazine (N ₂ H ₄)	0-1 ppm	0.001 ppm
Hydrazine (N ₂ H ₄)	0-300 ppm	0.1 ppm
Tetrahydrothiophene (THT)	0-50 mg/m ³	0.01 mg/m ³
Bromine (Br ₂)	0-10 ppm	0.01 ppm
Bromine (Br ₂)	0-50 ppm	0.01 ppm
Acetylene (C ₂ H ₂)	0-100 %LEL	0.1 %LEL
Acetylene (C ₂ H ₂)	0-100 ppm	0.1 ppm
Acetylene (C ₂ H ₂)	0-1,000 ppm	1 ppm
Ethylene (C ₂ H ₄)	0-10 ppm	0.01 ppm
Ethylene (C ₂ H ₄)	0-100 ppm	0.1 ppm
Ethylene (C ₂ H ₄)	0-1,000 ppm	1 ppm
Ethanol (C ₂ H ₆ O)	0-100 %LEL	0.1 %LEL
Ethanol (C ₂ H ₆ O)	0-100 ppm	0.1 ppm
Ethanol (C ₂ H ₆ O)	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 (NO _x)	0-100 ppm	0.01 ppm
Nitrogen Oxides (NO _x)	0-500 ppm	0.1 ppm
Nitrogen Oxides (NO _x)	0-2,000 ppm	1 ppm
Carbon Disulfide (CS ₂)	0-50 ppm	0.01 ppm
Acrylonitrile (C ₃ H ₃ N)	0-100 ppm	0.01 ppm

Gas	Measuring range	Resolution / notes
Nitrous Oxide (N ₂ O)	0-1,000 ppm	1 ppm
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

Configuration questions

How many gases can BTYQ-MS400-S monitor?

The standard configuration monitors one to four gases. Expanded configurations can monitor up to six gases. Specify the target gases and measuring ranges so the requested combination can be checked for sensor compatibility.

How does MS400-S sample gas?

The built-in pump supports remote or probe sampling. The detector can switch to diffusion sampling for ambient monitoring. Include the intended sampling arrangement in the project brief.

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.erantex.com/products/ms400-s/>