

EC Sense Selection Guide

20 models · downloadable datasheets also available per model on anchorsensor.com

TB420-ES1-AsH3 — TB420-ES1-AsH3 Arsine Smart Gas Sensor Module

The EC Sense TB420-ES1-AsH3 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Arsine detection with a 0 – 1 ppm range and 0.001 ppm resolution. It converts the sensor's small current si...

Target Gas	Arsine
Detection Range	0 – 1 ppm
Resolution	0.001 ppm
Order No.	04-TB420-ES1-AsH3-1-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-B2H6 — TB420-ES1-B2H6 Diborane Smart Gas Sensor Module

The EC Sense TB420-ES1-B2H6 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Diborane detection with a 0 – 1 ppm range and 0.001 ppm resolution. It converts the sensor's small current ...

Target Gas	Diborane
Detection Range	0 – 1 ppm
Resolution	0.001 ppm
Order No.	04-TB420-ES1-B2H6-1-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-CH4S — TB420-ES1-CH4S Methyl Mercaptan Smart Gas Sensor Module

The EC Sense TB420-ES1-CH4S is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Methyl Mercaptan detection with a 0 – 10 ppm / 0 – 100 ppm / 0 – 5000 ppm range and 0.001 ppm / 0.01 ppm / ...

Target Gas	Methyl Mercaptan
Detection Range	0 – 10 ppm / 0 – 100 ppm / 0 – 5000 ppm
Resolution	0.001 ppm / 0.01 ppm / 0.1 ppm
Order No.	04-TB420-ES1-CH4S-10-01 / 04-TB420-ES1-CH4S-100-01 / 04-TB420-ES1-CH4S-5000-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-CO — TB420-ES1-CO Carbon Monoxide Smart Gas Sensor Module

The EC Sense TB420-ES1-CO is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Carbon Monoxide detection with a 0 – 10 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 2 % vol. range and 0.001 ppm / ...

Target Gas	Carbon Monoxide
Detection Range	0 – 10 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 2 % vol.
Resolution	0.001 ppm / 0.01 ppm / 0.1 ppm / 0.001% vol.
Order No.	04-TB420-ES1-CO-10-01 / 04-TB420-ES1-CO-100-01 / 04-TB420-ES1-CO-1000-01 / 04-TB420-ES1-CO-2%-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-CI2 — TB420-ES1-CI2 Chlorine Smart Gas Sensor Module

The EC Sense TB420-ES1-CI2 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Chlorine detection with a 0 – 100 ppm range and 0.01 ppm resolution. It converts the sensor's small current ...

Target Gas	Chlorine
Detection Range	0 – 100 ppm
Resolution	0.01 ppm
Order No.	04-TB420-ES1-CI2-100-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-ETO — TB420-ES1-ETO Ethylene Oxide Smart Gas Sensor Module

The EC Sense TB420-ES1-ETO is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Ethylene Oxide detection with a 0 – 10 ppm / 0 – 200 ppm / 0 – 1000 ppm range and 0.001 ppm / 0.1 ppm / 0.1 ...

Target Gas	Ethylene Oxide
Detection Range	0 – 10 ppm / 0 – 200 ppm / 0 – 1000 ppm
Resolution	0.001 ppm / 0.1 ppm / 0.1 ppm
Order No.	04-TB420-ES1-ETO-10-01 / 04-TB420-ES1-ETO-200-01 / 04-TB420-ES1-ETO-1000-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-GeH4 — TB420-ES1-GeH4 Germane Smart Gas Sensor Module

The EC Sense TB420-ES1-GeH4 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Germane detection with a 0 – 5 ppm range and 0.01 ppm resolution. It converts the sensor's small current si...

Target Gas	Germane
Detection Range	0 – 5 ppm
Resolution	0.01 ppm
Order No.	04-TB420-ES1-GeH4-5-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-H2 — TB420-ES1-H2 Hydrogen Smart Gas Sensor Module

The EC Sense TB420-ES1-H2 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Hydrogen detection with a 0 – 1000 ppm / 0 – 5000 ppm / 0 – 5 % vol. range and 0.1 ppm / 0.1 ppm / 0.001% vol...

Target Gas	Hydrogen
Detection Range	0 – 1000 ppm / 0 – 5000 ppm / 0 – 5 % vol.
Resolution	0.1 ppm / 0.1 ppm / 0.001% vol.
Order No.	04-TB420-ES1-H2-1000-01 / 04-TB420-ES1-H2-5000-01 / 04-TB420-ES1-H2-5%-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-H2S — TB420-ES1-H2S Hydrogen Sulfide Smart Gas Sensor Module

The EC Sense TB420-ES1-H2S is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Hydrogen Sulfide detection with a 0 – 5 ppm / 0 – 10 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 5000 ppm range a...

Target Gas	Hydrogen Sulfide
Detection Range	0 – 5 ppm / 0 – 10 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 5000 ppm
Resolution	0.001 ppm / 0.001 ppm / 0.01 ppm / 0.1 ppm / 0.1 ppm
Order No.	04-TB420-ES1-H2S-5-01 / 04-TB420-ES1-H2S-10-01 / 04-TB420-ES1-H2S-100-01 / 04-TB420-ES1-H2S-1000-01 / 04-TB420-ES1-H2S-5000-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-HCHO — TB420-ES1-HCHO Formaldehyde Smart Gas Sensor Module

The EC Sense TB420-ES1-HCHO is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Formaldehyde detection with a 0 – 5 ppm / 0 – 100 ppm range and 0.001 ppm / 0.01 ppm resolution. It convert...

Target Gas	Formaldehyde
Detection Range	0 – 5 ppm / 0 – 100 ppm
Resolution	0.001 ppm / 0.01 ppm
Order No.	04-TB420-ES1-HCHO-5-01 / 04-TB420-ES1-HCHO-100-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-HCN — TB420-ES1-HCN Hydrogen Cyanide Smart Gas Sensor Module

The EC Sense TB420-ES1-HCN is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Hydrogen Cyanide detection with a 0 – 50 ppm range and 0.01 ppm resolution. It converts the sensor's small c...

Target Gas	Hydrogen Cyanide
Detection Range	0 – 50 ppm
Resolution	0.01 ppm
Order No.	04-TB420-ES1-HCN-50-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-NH3 — TB420-ES1-NH3 Ammonia Smart Gas Sensor Module

The EC Sense TB420-ES1-NH3 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Ammonia detection with a 0 – 10 ppm / 0 – 100 ppm range and 0.001 ppm / 0.01 ppm resolution. It converts the...

Target Gas	Ammonia
Detection Range	0 – 10 ppm / 0 – 100 ppm
Resolution	0.001 ppm / 0.01 ppm
Order No.	04-TB420-ES1-NH3-10-01 / 04-TB420-ES1-NH3-100-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-NO2 — TB420-ES1-NO2 Nitrogen Dioxide Smart Gas Sensor Module

The EC Sense TB420-ES1-NO2 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Nitrogen Dioxide detection with a 0 – 5 ppm / 0 – 50 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 2000 ppm range a...

Target Gas	Nitrogen Dioxide
Detection Range	0 – 5 ppm / 0 – 50 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 2000 ppm
Resolution	0.001 ppm / 0.01 ppm / 0.01 ppm / 0.01 ppm / 0.01 ppm
Order No.	04-TB420-ES1-NO2-5-02 / 04-TB420-ES1-NO2-50-01 / 04-TB420-ES1-NO2-100-01 / 04-TB420-ES1-NO2-1000-01 / 04-TB420-ES1-NO2-2000-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-O2 — TB420-ES1-O2 Oxygen Smart Gas Sensor Module

The EC Sense TB420-ES1-O2 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Oxygen detection with a 0 – 25 % vol. range and 0.01% vol. resolution. It converts the sensor's small current...

Target Gas	Oxygen
Detection Range	0 – 25 % vol.
Resolution	0.01% vol.
Order No.	04-TB420-ES1-O2-25%-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-O3 — TB420-ES1-O3 Ozone Smart Gas Sensor Module

The EC Sense TB420-ES1-O3 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Ozone detection with a 0 – 5 ppm / 0 – 50 ppm / 0 – 100 ppm range and 0.001 ppm / 0.01 ppm / 0.01 ppm resolut...

Target Gas	Ozone
Detection Range	0 – 5 ppm / 0 – 50 ppm / 0 – 100 ppm
Resolution	0.001 ppm / 0.01 ppm / 0.01 ppm
Order No.	04-TB420-ES1-O3-5-01 / 04-TB420-ES1-O3-50-01 / 04-TB420-ES1-O3-100-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-PH3 — TB420-ES1-PH3 Phosphine Smart Gas Sensor Module

The EC Sense TB420-ES1-PH3 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Phosphine detection with a 0 – 5 ppm / 0 – 20 ppm / 0 – 100 ppm / 0 – 2000 ppm range and 0.001 ppm / 0.01 pp...

Target Gas	Phosphine
Detection Range	0 – 5 ppm / 0 – 20 ppm / 0 – 100 ppm / 0 – 2000 ppm
Resolution	0.001 ppm / 0.01 ppm / 0.01 ppm / 0.1 ppm
Order No.	04-TB420-ES1-PH3-5-01 / 04-TB420-ES1-PH3-20-01 / 04-TB420-ES1-PH3-100-01 / 04-TB420-ES1-PH3-2000-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-SMELL — TB420-ES1-SMELL Odor & Smell Smart Gas Sensor Module

The EC Sense TB420-ES1-SMELL is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Odor & Smell detection with a 0 – 5 ppm / 0 – 10 ppm / 0 – 200 ppm / 0 – 500 ppm range and 0.001 ppm / 0.0...

Target Gas	Odor & Smell
Detection Range	0 – 5 ppm / 0 – 10 ppm / 0 – 200 ppm / 0 – 500 ppm
Resolution	0.001 ppm / 0.001 ppm / 0.1 ppm / 0.1 ppm
Order No.	04-TB420-ES1-SMELL-5-01 / 04-TB420-ES1-SMELL-10-01 / 04-TB420-ES1-SMELL-200-01 / 04-TB420-ES1-SMELL-500-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-SO2 — TB420-ES1-SO2 Sulfur Dioxide Smart Gas Sensor Module

The EC Sense TB420-ES1-SO2 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Sulfur Dioxide detection with a 0 – 5 ppm / 0 – 50 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 2000 ppm range and...

Target Gas	Sulfur Dioxide
Detection Range	0 – 5 ppm / 0 – 50 ppm / 0 – 100 ppm / 0 – 1000 ppm / 0 – 2000 ppm
Resolution	0.001 ppm / 0.01 ppm / 0.01 ppm / 0.1 ppm / 0.1 ppm
Order No.	04-TB420-ES1-SO2-5-01 / 04-TB420-ES1-SO2-50-01 / 04-TB420-ES1-SO2-100-01 / 04-TB420-ES1-SO2-1000-01 / 04-TB420-ES1-SO2-2000-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-SiH4 — TB420-ES1-SiH4 Silane Smart Gas Sensor Module

The EC Sense TB420-ES1-SiH4 is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Silane detection with a 0 – 10 ppm range and 0.001 ppm resolution. It converts the sensor's small current s...

Target Gas	Silane
Detection Range	0 – 10 ppm
Resolution	0.001 ppm
Order No.	04-TB420-ES1-SiH4-10-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw

TB420-ES1-TVOC — TB420-ES1-TVOC Volatile Organic Compounds (TVOC) Smart Gas Sensor Module

The EC Sense TB420-ES1-TVOC is a two-wire 4-20 mA smart gas sensor module built on German solid-polymer electrochemical sensing technology, designed for Volatile Organic Compounds (TVOC) detection with a 0 – 10 ppm / 0 – 200 ppm / 0 – 1000 ppm / 0 – 2000 ppm r...

Target Gas	Volatile Organic Compounds (TVOC)
Detection Range	0 – 10 ppm / 0 – 200 ppm / 0 – 1000 ppm / 0 – 2000 ppm
Resolution	0.001 ppm / 0.1 ppm / 0.1 ppm / 0.1 ppm
Order No.	04-TB420-ES1-TVOC-10-01 / 04-TB420-ES1-TVOC-200-01 / 04-TB420-ES1-TVOC-1000-01 / 04-TB420-ES1-TVOC-2000-01
Operating Principle	Solid Polymer Electrochemical Sensing Technology
Accuracy	± 5% (measurement value)
Repeatability	< 2%
Linearity	Linear
Long-Term Drift	< 5% / year
Expected Lifetime	> 5 years
Output Signal	4-20 mA two-wire (convertible to 40-200 mV via an external resistor)
Supply Voltage	9 to 24 V DC, 24 V DC recommended
Supply Current	3 to 22 mA
Power Consumption	< 0.6 W
Maximum Loop Resistance	< 500 Ω @ 24 V DC
Protection	Reverse polarity protection
Operating Temperature	-40 °C to +55 °C
Operating Humidity	15 – 95% RH (non-condensing)
Operating Pressure	Atmospheric pressure ± 10%
Storage Temperature	0 °C to 20 °C
Size (Including Sensor)	45 × 35 × 21.7 mm
Size (Without Sensor)	45 × 35 × 11.9 mm
Weight (Including Sensor)	11.8 g
Weight (Without Sensor)	7.1 g
Certification	Ex ia IIC Ga intrinsic safety (temperature class T6, -40 °C to +55 °C); RoHS
Warranty	12 months

Every module is professionally calibrated with standard gas before shipment and the calibration data is stored in its flash chip, so it can be used without warm-up. EC Sense provides calibration softw