



VARIOTEC[®]

480/460/450/400 EX

Series

Type/model	<ul style="list-style-type: none">• VARIOTEC 480 EX: 065 01• VARIOTEC 460 EX: 065 11• VARIOTEC 450 EX: 065 31• VARIOTEC 400 EX: 065 21
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Certificates

Certificate	<p>TÜV 07 ATEX 553353 X</p> <ul style="list-style-type: none">• II 2G Ex db eb ib IIB T4 Gb basic device without leather bag for:<ul style="list-style-type: none">◦ CH₄, C₃H₈, C₄H₁₀, C₉H₂₀, CO• II 2G Ex db eb ib IIC T4 Gb basic device with leather bag for:<ul style="list-style-type: none">◦ CH₄, C₃H₈, C₄H₁₀, C₉H₂₀, CO, H₂ <p>VARIOTEC 480/450 EX additionally: BVS 09 ATEX G 001 X, PFG 08 G 002 X</p> <ul style="list-style-type: none">• applies to Warning LEL and Warning ExTox applications for CH₄, C₃H₈, O₂, CO
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Device data

Dimensions (W × D × H)	<p>approx. 148 × 57 × 205 mm (5.83 × 2.24 × 8.07 in)</p> <p>approx. 148 × 57 × 253 mm (5.83 × 2.24 × 9.96 in) with supporting bracket</p>
Weight	<p>approx. 1000 g (35 oz), depending on equipment</p>

Features

Display	monochrome, 320 x 240 pixel
Buzzer	<ul style="list-style-type: none"> • frequency: 2.4 kHz • volume: 80 dB (A) / 1 m (3.28 ft)
Signal light	red
Pump	<ul style="list-style-type: none"> • vacuum: > 250 mbar • volume flow: typically 50 l/h ±20 l/h • pump error (F100) depending on volume flow: <ul style="list-style-type: none"> ◦ ≤ 20 l/h F100 certain ◦ > 20 l/h – ≤ 35 l/h F100 possible
Interface	USB
Memory	8 MB
Controls	<ul style="list-style-type: none"> • ON/OFF key • 3 function keys • jog dial
Sensors	<p>VARIOTEC 480 EX</p> <ul style="list-style-type: none"> • SC for flammable gases (CH₄, C₃H₈, C₄H₁₀) • CC for flammable gases (CH₄, C₃H₈, C₄H₁₀) • TC for all gases <p>optional:</p> <ul style="list-style-type: none"> • EC for O₂, CO <p>VARIOTEC 460 EX</p> <ul style="list-style-type: none"> • SC for flammable gases (CH₄, C₃H₈, C₄H₁₀) • TC for all gases <p>optional:</p> <ul style="list-style-type: none"> • EC for O₂, CO <p>VARIOTEC 450 EX</p> <ul style="list-style-type: none"> • CC for flammable gases (CH₄, C₃H₈, C₄H₁₀) • TC for all gases <p>optional:</p> <ul style="list-style-type: none"> • EC for O₂, CO <p>VARIOTEC 400 EX</p> <ul style="list-style-type: none"> • SC for flammable gases (CH₄, C₃H₈, C₄H₁₀)

Operating conditions*

Operating temperature	-20 – 40 °C (-4 – 104 °F)
Humidity	5 – 90% r.h., non-condensing
Atmospheric pressure	800 – 1100 hPa
Pressure at gas inlet	max. 100 mbar
Protection rating	IP54
Position of use	any

*Optional sensors can affect the operating conditions of the device.

Storage conditions

Storage temperature	-25 – 60 °C (-13 °F – 140 °F) temperatures above 40°C (104 °F) reduce the service life of the sensors
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Power supply

Power supply	4 cells, type Mignon AA, optionally: <ul style="list-style-type: none"> • rechargeable batteries: NiMH • disposable batteries: Alkaline
Operating time, typical	at least 8 h
Charging time	approx. 3 h (complete charge), depending on capacity
Charging temperature	0 – 35 °C (32 – 95 °F)
Charging voltage	12 V DC (max. 1 A)

Data transmission

Communication	USB
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Gas types

Default	CH ₄
Optional	C ₃ H ₈ <ul style="list-style-type: none"> • VARIOTEC 480/460/450 EX: % vol. • VARIOTEC 480/460/400 EX: ppm • VARIOTEC 450 EX: % LEL C ₄ H ₁₀ <ul style="list-style-type: none"> • VARIOTEC 480/460/400 EX: ppm • VARIOTEC 450 EX: % LEL

Sensors

Note:

probes increase the stated response times.

Methane CH₄, propane C₃H₈, butane C₄H₁₀

Type	catalytic combustion sensor		
Use	VARIOTEC 480/450 EX		
Measuring range	0 – 100% LEL		
Resolution	• CH ₄ :	0.05% vol.	
	• C ₃ H ₈ , C ₄ H ₁₀ :	0.02% vol.	
Response times	• CH ₄ :	t ₅₀ < 5 s	t ₉₀ < 14 s
	• C ₃ H ₈ , C ₄ H ₁₀ :	t ₅₀ < 6 s	t ₉₀ < 11 s
Warm-up time	up to 90 s		
Temperature range	-20 – 40 °C (-4 – 104 °F)		
Measuring error	according to EN 60079-29-1		
	• CH ₄ :	±1% LEL (short-term stability) ±4% LEL (long-term stability)	
	• C ₃ H ₈ :	±1% LEL (short-term stability) ±2% LEL (long-term stability)	
Interference, known	all flammable gases		
Lifetime, expected	5 years		
Adjustment	test gas concentration:		
	• zero point:	hydrocarbon-free, clean air	
	• CH ₄ :	2.20% vol. in synth. air, utilisable 1.00 – 4.00% vol.	
	• C ₃ H ₈ :	1.00% vol. in synth. air, utilisable 0.85 – 1.50% vol.	
	• C ₄ H ₁₀ :	1.00% vol. in synth. air, utilisable 0.50 – 1.30% vol.	

Methane CH₄, propane C₃H₈

Type	thermal conductivity sensor		
Use	VARIOTEC 480/460/450 EX		
Measuring range	0 – 100% vol.		
Resolution	• 0 – 9.9% vol.:	0.1% vol.	
	• 10 – 100% vol.:	1% vol.	
Response times	• CH ₄ :	t ₅₀ < 9 s	t ₉₀ < 17 s
	• C ₃ H ₈ :	t ₅₀ < 11 s	t ₉₀ < 22 s
Warm-up time	up to 90 s		
Temperature range	-20 – 40 °C (-4 – 104 °F)		
Measuring error	according to EN 60079-29-1		
	• CH ₄ , C ₃ H ₈ :	±3% vol.	
Interference, known	all gases with a different thermal conductivity		
Lifetime, expected	5 years		
Adjustment	test gas concentration:		
	• zero point:	hydrocarbon-free, clean air	
	• CH ₄ :	100% vol., utilisable 20 – 100% vol.	
	• C ₃ H ₈ :	100% vol., utilisable 20 – 100% vol.	

Oxygen O₂

Type	electrochemical sensor		
Use	VARIOTEC 480/460/450 EX		
Measuring range	0 – 25% vol.		
Resolution	0.1% vol.		
Response times	t ₉₀ < 15 s		
Warm-up time	up to 90 s		
Temperature range	-20 – 40 °C (-4 – 104 °F)		
Measuring error	±3 %, minimum ±0.3% vol. (±3 digit)		
Drift	< 2% within 3 months		
Interference, known	none		
Humidity	5 – 90% r.h., non-condensing		
	• short term: 0% r.h		
Lifetime, expected	3 years		
Adjustment	test gas concentration:		
	• zero point:	<ul style="list-style-type: none"> ◦ oxygen-free air ◦ 100% vol. N₂ ◦ 100% vol. CH₄ 	
	• O ₂ :	20.9% vol., e.g. clean air	

Carbon monoxide CO

Type	electrochemical sensor
Use	VARIOTEC 480/450 EX
Measuring range	0 – 500 ppm <ul style="list-style-type: none"> • lower limit: <ul style="list-style-type: none"> ◦ 0 – 100 ppm: 4 ppm ◦ > 100 ppm: 11 ppm
Resolution	1 ppm
Response times	t ₉₀ < 30 s
Decay times	t ₁₀ ≤ 25 s
Warm-up time	up to 90 s
Temperature range	-20 – 40 °C (-4 – 104 °F)
Measuring error	<ul style="list-style-type: none"> • ±3%, minimum ±3 ppm (±3 digit) • long-term stability as per EN 45544 <ul style="list-style-type: none"> ◦ Test gas: ≤ 4% of measured value ◦ zero point (fresh air): ≤ 1 ppm
Drift	< 10% within 6 months
Zero point deviation	<ul style="list-style-type: none"> • 0 – 100 ppm: 3 ppm • > 100 ppm: 13 ppm
Interference, known	at 20 °C (68 °F) <ul style="list-style-type: none"> • C₂H₂ 100 ppm: approx. 90 ppm CO • C₂H₄ 100 ppm: approx. 96 ppm CO • Cl₂ 15 ppm: approx. 1 ppm CO • H₂ 200 ppm: approx. 30 ppm CO • H₂S 50 ppm: approx. 1 ppm CO • NH₃ 50 ppm: approx. 0 ppm CO • NO 50 ppm: approx. 15 ppm CO • SO₂ 20 ppm: approx. 0 ppm CO
Humidity	15 – 90% r.h., non-condensing <ul style="list-style-type: none"> • short term: 0% r.h
Lifetime, expected	3 years
Adjustment	test gas concentration: <ul style="list-style-type: none"> • zero point: clean air • CO: 40 ppm, utilisable 10 – 150 ppm

Methane CH₄, propane C₃H₈

Type	gas-sensitive semiconductor	
Use	VARIOTEC 480/460/400 EX	
Measuring range	0 – 1% vol.	
Indication range	0 – 1.5% vol.	
Resolution	<ul style="list-style-type: none"> • 0 – 10 ppm: 1 ppm • 10 – 100 ppm: 2 ppm • 100 – 999 ppm: 20 ppm • 0,10 – 1,0 Vol.-%: 0,02 Vol.-% (200 ppm) 	
Response times	CH ₄ :	t ₉₀ < 7 s
Warm-up time	approx. 1 min	
Measuring error	±30%	
Interference, known	all flammable gases	
Lifetime, expected	5 years	
Adjustment	test gas concentration: <ul style="list-style-type: none"> • zero point: hydrocarbon-free, clean air • CH₄: <ul style="list-style-type: none"> ◦ 10 ppm ◦ 100 ppm ◦ 1000 ppm ◦ 1.0% vol. • C₃H₈: <ul style="list-style-type: none"> ◦ 10 ppm ◦ 100 ppm ◦ 1000 ppm ◦ 1.0% vol. 	

Ethane detector

Type	gas chromatograph	
Use	VARIOTEC 480/460 EX	
Gases, separable	CH ₄ , C ₂ H ₆ , C ₃ H ₈	
Sensor, used	gas-sensitive semiconductor	
Measuring range	0 – 12000 ppm	
Separating capacity	25 ppm	
Resolution	1 ppm	
Measurement time	4 min	
Warm-up time	approx. 1 min	
Measuring error	±30%	
Lifetime, expected	5 years	
Test gases	gas mixture:	1% vol. CH ₄ / 100 ppm C ₂ H ₆ in synth. air

Diensten van EURO-INDEX

EURO-INDEX is fabrikant van BLAUWE LIJN en importeur/distributeur van diverse A-merken test- en meetinstrumenten. Wij leveren naast instrumenten ook de diensten om het gebruik hiervan in uw bedrijfsvoering te optimaliseren. Dit omvat uiteraard onderhoud, reparatie en kalibratie van instrumenten, maar ook kennisdeling via de EURO-INDEX Academy en verhuur van meetinstrumenten.

Geautoriseerd Service Centrum

EURO-INDEX is van de meeste merken in ons assortiment een Geautoriseerd Service Centrum. Dit betekent dat uw instrumenten worden behandeld door technici die zijn opgeleid door de fabrikant en beschikken over de juiste gereedschappen en software. Er worden uitsluitend originele onderdelen toegepast en de garantie van uw instrument blijft intact, net als de certificering (ATEX, EN50379, etc.).

Kalibratielaboratorium

Ons moderne service- en kalibratielaboratorium beschikt over een RvA accreditatie naar NEN-EN-ISO/IEC 17025. Deze accreditatie geldt voor grootheden, zoals gespecificeerd in de scope bij [accreditatienummer K105](#).



Kijk voor een overzicht van al onze diensten op euro-index.nl/diensten

KWS®

KWS® is een unieke kalibratieformule voor uw test- en meetinstrumenten met periodiek onderhoud en kalibratie tegen vaste, lage kosten.

Uw kalibratiecertificaten zijn digitaal beschikbaar via Mijn KWS (gratis webportaal en app) en door de QR-code te scannen van de kalibratiesticker op het instrument.

Verhuur van meetinstrumenten

Er zijn diverse situaties waarbij huren handig is:

- U heeft tijdelijk extra toestellen nodig.
- Uw eigen meetinstrument wordt onderhouden en/of gekalibreerd.
- U moet een eenmalige meting verrichten.

EURO-INDEX Academy

- Trainingen (individueel en klassikaal)
- Cursussen, infosessies en workshops
- Demonstratie- en instructievideo's
- Whitepapers



Servicebalie



Onderhoud, reparatie en kalibratie



Cursussen en workshops



Kalibratielaboratorium

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