



VARIOTEC[®] 460 Tracergas

Device data

Dimensions (W x D x H)	approx. 148 x 57 x 205 mm approx. 148 x 57 x 253 mm with supporting bracket
Weight	approx. 1000 g, depending on equipment

Certificates

Certificate	TÜV 07 ATEX 553353 X II2G Ex d e ib IIB T4 Gb basic device without leather bag for: CH ₄ , C ₃ H ₈ , C ₄ H ₁₀ , tracer gas with maximum 5 % H ₂ in N ₂ II2G Ex d e ib IIC T4 Gb basic device with leather bag for: CH ₄ , C ₃ H ₈ , C ₄ H ₁₀ , tracer gas, H ₂
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Device elements

Display	monochromatic graphic display, 320 x 240 pixels
Buzzer	frequency 2.4 kHz, volume 80 db (A) / 1 m
Signal light	red
Pump capacity	vacuum > 250 mbar, volume flow approx. 50 l/h
Interface	USB
Memory	8 MB
Operation	ON/OFF key, 3 function keys, jog dial

Operating conditions

Operating temperature	-20 °C – 40 °C
Storage temperature	-25 °C – 60 °C (temperatures above 40 °C reduce the lifetime of the rechargeable batteries)
Humidity	5 – 90 % r.h., non-condensing
Atmospheric pressure	800 – 1100 hPa
Protection rating	IP54

Power supply

Power supply	4 Mignon (AA) cells, either: NiMH rechargeable or disposable alkaline batteries
Operating time, typical	at least 8 h
Charging time	approx. 3 h (complete charge), depending on capacity
Charging voltage	12 V DC, max. 1 A

Gas types

Standard	hydrogen H ₂ tracer gas 95/5 (95 % N ₂ , 5 % H ₂) or 90/10
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Thermal conductivity sensor for H₂

Measuring range	0 – 100 % vol.
Resolution	0.1 % vol.
Response times	t ₅₀ < 3.1 s, t ₉₀ < 6.5 s
Warm-up time	< 30 s
Measuring error	3 % of measuring range end value
Interference	all gases with a different thermal conductivity
Lifetime, expected	5 years

Gas-sensitive semiconductor for H₂

Measuring range	0.0 – 10000 ppm (1 % vol.)		
Resolution	• 0.1 ppm (0.0 – 9.9 ppm) • 2 ppm (10 – 100 ppm) • 20 ppm (100 – 990 ppm) • 0.05 % vol. (0.1 – 0.95 % vol.) • 0.1 % vol. (1.0 – 5.0 % vol.)		
Response times	10 ppm H2: • tR < 1,2 s 100 ppm H2: • tR < 1,0 s tR ... time until device's first response following delivery of gas	t50 < 6 s	t90 < 18 s
Warm-up times	up to 5 min		
Measuring error	30 % (short time)		
Interference	at 20 °C: • 1 % vol. CH4 • 1 % vol. C3H8 • 40 ppm CO • 1 % vol. C2H6O (ethanol) • 3500 ppm benzene • water vapour, < 80 % r.h.	50 ppm maximum 10 ppm maximum 2 ppm maximum 2 ppm maximum 10 ppm maximum < 1 ppm typical	
Lifetime, expected	5 years		