

Selection and ordering data

ULTRAMAT 23 gas analyzer

For measuring 1 infrared component, oxygen and hydrogen sulfide

Enclosure, version and gas paths

19" rack unit for installation in cabinets

Gas connections	Gas path	Internal sample gas pump
6 mm pipe	Viton	Without ²⁾
¼" pipe	Viton	Without ²⁾
6 mm pipe	Viton	With
¼" pipe	Viton	With
6 mm pipe	Stainless steel, mat. no. 1.4571	Without ²⁾
¼" pipe	Stainless steel, mat. no. 1.4571	Without ²⁾

Portable, in sheet steel enclosure, 6 mm gas connections, Viton gas path, with integrated sample gas pump, condensation trap with safety filter on the front plate

Measured component	Possible with measuring range identification
CO	D, E, F, G ... R, U, X
CO ₂ ¹⁾	D ⁶⁾ , G ⁶⁾ , H ⁶⁾ , J ⁶⁾ , K ... R
CH ₄	E, H, L, N, P, R
C ₂ H ₄	K
C ₆ H ₁₄	K
SO ₂	F ... L, W
NO	E, G ... J, T, V, W
N ₂ O ⁷⁾	E
SF ₆	H

Smallest measuring range	Largest measuring range
0 ... 50 vpm	0 ... 250 vpm
0 ... 100 vpm	0 ... 500 vpm
0 ... 150 vpm	0 ... 750 vpm
0 ... 200 vpm	0 ... 1 000 vpm
0 ... 500 vpm	0 ... 2 500 vpm
0 ... 1 000 vpm	0 ... 5 000 vpm
0 ... 2 000 vpm	0 ... 10 000 vpm
0 ... 0,5 %	0 ... 2,5 %
0 ... 1 %	0 ... 5 %
0 ... 2 %	0 ... 10 %
0 ... 5 %	0 ... 25 %
0 ... 10 %	0 ... 50 %
0 ... 20 %	0 ... 100 %
0 ... 100 mg/m ³	0 ... 750 mg/m ³
0 ... 150 mg/m ³	0 ... 750 mg/m ³
0 ... 250 mg/m ³	0 ... 1 250 mg/m ³
0 ... 400 mg/m ³	0 ... 2 000 mg/m ³
0 ... 50 vpm	0 ... 2 500 vpm

Oxygen measurement⁵⁾

Without O₂ sensor

With O₂ sensor

With paramagnetic oxygen measuring cell

Hydrogen sulfide measurement

Without

With H₂S sensor 0 ... 5/50 ppm

With H₂S sensor 0 ... 500/5 000 ppm

Power supply

100 V AC, 50 Hz

120 V AC, 50 Hz

200 V AC, 50 Hz

230 V AC, 50 Hz

100 V AC, 60 Hz

120 V AC, 60 Hz

230 V AC, 60 Hz

Operating software, documentation³⁾

German

English

French

Spanish

Italian

Order No.

7MB2335-

7MB2335- - AA

Cannot be combined

0	6	6
1	7	7
2	8	8
3	8	8
6	8	8
7	8	8
8	8	8
A		
C		
D		
F		
M		
N		
P		
S		
V		
D		
E		
F		
G		
H		
J		
K		
L		
M		
N		
P		
Q		
R		
T		
U		
V		
W		
X		
0	8	8
1	8	8
8	8	8
0	1	1
1	3	3
3	1	1
	3	3
0	1	1
1	2	2
2	3	3
3	4	4
4	5	5
5	6	6
6		
0		
1		
2		
3		
4		

Footnotes: See next page.

Selection and ordering data**Additional versions****Order code**

Add "-Z" to Order No. and specify order code

Add-on electronics with 8 digital inputs/outputs, PROFIBUS PA interface

A12

Add-on electronics with 8 digital inputs/outputs, PROFIBUS DP interface

A13

Telescopic rails (2 units), 19" rack unit version only

A31

Set of Torx screwdrivers

A32

TAG labels (specific lettering based on customer information)

B03Gas path for short response time⁹⁾**C01**

Chopper compartment purging for 6 mm gas connection

C02

Chopper compartment purging for 1/4" gas connection

C03Presetting to reference temperature 0 °C for conversion into mg/m³, applies to all components**D15**

Certificate FM/CSA Class I, Div. 2, ATEX II 3 G

E20

Calibration interval 5 months (TÜV/QAL), measuring ranges:

CO: 0 ... 150/750 mg/m³**E50**NO: 0 ... 100/750 mg/m³Measuring range indication in plain text⁴⁾**Y11**Measurement of CO₂ in forming gas⁸⁾ (only in conjunction with measuring range 0 to 20/0 to 100 %)**Y14****Accessories****Order No.**CO₂ absorber cartridge**7MB1933-8AA****Retrofitting sets**

RS 485/Ethernet converter

A5E00852383

RS 485/RS 232 converter

C79451-Z1589-U1

RS 485 / USB converter

A5E00852382

Add-on electronics with 8 digital inputs/outputs and PROFIBUS PA

A5E00056834

Add-on electronics with 8 digital inputs/outputs and PROFIBUS DP

A5E00057159¹⁾ For measuring ranges below 1 %, a CO₂ absorber cartridge can be used for setting the zero point (see accessories)²⁾ Without separate zero gas input or solenoid valve³⁾ User language can be changed⁴⁾ Standard setting: smallest measuring range, largest measuring range⁵⁾ O₂ sensor in gas path of infrared measured component 1⁶⁾ With chopper compartment purging (N₂ approx. 3 000 hPa required for measuring ranges below 0.1 % CO₂), to be ordered separately (see order code C02 or C03)⁷⁾ Not suitable for use with emission measurements since the cross-sensitivity is too high⁸⁾ CO₂ measurement in accompanying gas Ar or Ar/He (3:1); forming gas⁹⁾ Only for version with Viton hose

Selection and ordering data			Order No.	
ULTRAMAT 23 gas analyzer For measuring 2 infrared components, oxygen and hydrogen sulfide			7MB2337- - - - -	
Enclosure, version and gas paths 19" rack unit for installation in cabinets			Cannot be combined	
Gas connections	Gas paths	Internal sample gas pump		
6 mm pipe	Viton, not separate	Without ²⁾	0	
¼" pipe	Viton, not separate	Without ²⁾	1	
6 mm pipe	Viton, not separate	With	2	
¼" pipe	Viton, not separate	With	3	
6 mm pipe	Viton, separate	Without ²⁾	4	4 → A27, A29
¼" pipe	Viton, separate	Without ²⁾	5	5 → A27, A29
6 mm pipe	Stainless steel, mat. no. 1.4571, separate	Without ²⁾	6	6 6
¼" pipe	Stainless steel, mat. no. 1.4571, separate	Without ²⁾	7	7 7
Portable, in sheet steel enclosure, 6 mm gas connections, Viton gas path, with integrated sample gas pump, condensation trap with safety filter on the front plate			8	8 8 8 → E20
1. infrared measured component				
Measured component	Possible with measuring range identification			
CO	D, E, F, G ... R, U, X		A	
CO ₂ ¹⁾	D ⁶⁾ , G ⁶⁾ , H ⁶⁾ , J ⁶⁾ , K ... R		C	
CH ₄	E, H, L, N, P, R		D	
C ₂ H ₄	K		F	
C ₆ H ₁₄	K		M	
SO ₂	F ... L, W		N	
NO	E, G ... J, T, V, W		P	
N ₂ O ⁷⁾	E		S	
SF ₆	H		V	
<u>Smallest measuring range</u>	<u>Largest measuring range</u>			
0 ... 50 vpm	0 ... 250 vpm		D	
0 ... 100 vpm	0 ... 500 vpm		E	
0 ... 150 vpm	0 ... 750 vpm		F	
0 ... 200 vpm	0 ... 1 000 vpm		G	
0 ... 500 vpm	0 ... 2 500 vpm		H	
0 ... 1 000 vpm	0 ... 5 000 vpm		J	
0 ... 2 000 vpm	0 ... 10 000 vpm		K	
0 ... 0,5 %	0 ... 2,5 %		L	
0 ... 1 %	0 ... 5 %		M	
0 ... 2 %	0 ... 10 %		N	
0 ... 5 %	0 ... 25 %		P	
0 ... 10 %	0 ... 50 %		Q	
0 ... 20 %	0 ... 100 %		R	
0 ... 100 mg/m ³	0 ... 750 mg/m ³		T	
0 ... 150 mg/m ³	0 ... 750 mg/m ³		U	
0 ... 250 mg/m ³	0 ... 1 250 mg/m ³		V	
0 ... 400 mg/m ³	0 ... 2 000 mg/m ³		W	
0 ... 50 vpm	0 ... 2 500 vpm		X	
<u>Oxygen measurement⁵⁾</u>				
Without O ₂ sensor			0	
With O ₂ sensor			1	
With paramagnetic oxygen measuring cell			8	1 8 8 8
<u>Hydrogen sulfide measurement</u>				
Without			0	
With H ₂ S sensor 0 ... 5/50 ppm			1	1 1 1
With H ₂ S sensor 0 ... 500/5 000 ppm			3	3 3 3
<u>Power supply</u>				
100 V AC, 50 Hz			0	
120 V AC, 50 Hz			1	
200 V AC, 50 Hz			2	
230 V AC, 50 Hz			3	
100 V AC, 60 Hz			4	
120 V AC, 60 Hz			5	
230 V AC, 60 Hz			6	

Selection and ordering data		Order No.									
ULTRAMAT 23 gas analyzer For measuring 2 infrared components, oxygen and hydrogen sulfide		7MB2337-		<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div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Footnotes: See next page.

Additional versions	Order code
Add "-Z" to Order No. and specify order code	
Add-on electronics with 8 digital inputs/outputs, PROFIBUS PA interface	A12
Add-on electronics with 8 digital inputs/outputs, PROFIBUS DP interface	A13
Stainless steel (mat. no. 1.4571) connection pipe, 6 mm, complete with screwed gland (cannot be combined with Viton hose)	A27
Stainless steel (mat. no. 1.4571) connection pipe, ¼", complete with screwed gland (cannot be combined with Viton hose)	A29
Telescopic rails (2 units, 19" rack unit version only)	A31
Set of Torx screwdrivers	A32
TAG labels (specific lettering based on customer information)	B03
Gas path for short response time ⁹⁾	C01
Chopper compartment purging for 6 mm gas connection	C02
Chopper compartment purging for ¼" gas connection	C03
Presetting to reference temperature 0 °C for conversion into mg/m³, applies to all components	D15
Measuring range indication in plain text ⁴⁾	Y11
Certificate FM/CSA Class I, Div. 2, ATEX II 3 G	E20
Calibration interval 5 months (TÜV/QAL), measuring ranges: CO: 0 ... 150/750 mg/m³ NO: 0 ... 100/750 mg/m³	E50
Measurement of CO ₂ in forming gas ⁸⁾ (only in conjunction with measuring range 0 to 20/0 to 100 %)	Y14
Accessories	Order No.
CO ₂ absorber cartridge	7MB1933-8AA
Retrofitting sets	
RS 485/Ethernet converter	A5E00852383
RS 485/RS 232 converter	C79451-Z1589-U1
RS 485 / USB converter	A5E00852382
Add-on electronics with 8 digital inputs/outputs and PROFIBUS PA	A5E00056834
Add-on electronics with 8 digital inputs/outputs and PROFIBUS DP	A5E00057159

¹⁾ For measuring ranges below 1 %, a CO₂ absorber cartridge can be used for setting the zero point (see accessories)

²⁾ Without separate zero gas input or solenoid valve

³⁾ User language can be changed

⁴⁾ Standard setting: smallest measuring range, largest measuring range

⁵⁾ O₂ sensor in gas path of infrared measured component 1

⁶⁾ With chopper compartment purging (N₂ approx. 3 000 hPa required for measuring ranges below 0.1 % CO₂), to be ordered separately (see order code C02 or C03)

⁷⁾ Not suitable for use with emission measurements since the cross-sensitivity is too high

⁸⁾ CO₂ measurement in accompanying gas Ar or Ar/He (3:1); forming gas

⁹⁾ Only for version with Viton hose

¹⁰⁾ Only in conjunction with CO₂ measuring range 0 to 5 % to 0 to 25 % (CP)

Selection and ordering data

ULTRAMAT 23 gas analyzer

for measuring 3 infrared components and oxygen

Enclosure, version and gas paths

19" rack unit for installation in cabinets

Gas connections	Gas paths	Internal sample gas pump
6 mm pipe	Viton, not separate	Without ²⁾
¼" pipe	Viton, not separate	Without ²⁾
6 mm pipe	Viton, not separate	With
¼" pipe	Viton, not separate	With
6 mm pipe	Viton, separate	Without ²⁾
¼" pipe	Viton, separate	Without ²⁾
6 mm pipe	Stainless steel, mat. no. 1.4571, separate	Without ²⁾
¼" pipe	Stainless steel, mat. no. 1.4571, separate	Without ²⁾

Portable, in sheet steel enclosure, 6 mm gas connections, Viton gas path, with integrated sample gas pump, condensation trap with safety filter on the front plate

1. and 2nd infrared measured components

Measured component	Smallest measuring range	Largest measuring range
CO	0 ... 500 vpm	0 ... 2 500 vpm
NO	0 ... 500 vpm	0 ... 2 500 vpm
CO	0 ... 2 000 vpm	0 ... 10 000 vpm
NO	0 ... 1 000 vpm	0 ... 5 000 vpm
CO	0 ... 1 000 vpm	0 ... 5 000 vpm
NO	0 ... 1 000 vpm	0 ... 5 000 vpm
CO	0 ... 1 %	0 ... 5 %
NO	0 ... 1 000 vpm	0 ... 5000 vpm
CO	0 ... 250 mg/m ³	0 ... 1 250 mg/m ³
NO	0 ... 400 mg/m ³	0 ... 2 000 mg/m ³ TÜV version
CO	0 ... 10 %	0 ... 50 %
CO ₂	0 ... 10 %	0 ... 50 %
CO	0 ... 10 %	0 ... 50 %
CO ₂	0 ... 0,5 %	0 ... 2,5 %
CO	0 ... 20 %	0 ... 100 %
CO ₂	0 ... 20 %	0 ... 100 %
CO ₂	0 ... 5 %	0 ... 25 %
CO	0 ... 100 vpm	0 ... 500 vpm
CO ₂	0 ... 10 %	0 ... 50 %
CO	0 ... 0,5 %	0 ... 2,5 %
CO ₂	0 ... 5 %	0 ... 25 %
CO	0 ... 75 mg/m ³	0 ... 750 mg/m ³
CO ₂	0 ... 5 %	0 ... 25 %
CH ₄	0 ... 1 %	0 ... 5 %
CO ₂	0 ... 5 %	0 ... 25 %
CH ₄	0 ... 2 %	0 ... 10 %
CO ₂	0 ... 5 %	0 ... 25 %
NO	0 ... 500 vpm	0 ... 2 500 vpm

Oxygen measurement⁵⁾

Without O₂ sensor

With O₂ sensor

With paramagnetic oxygen measuring cell

Power supply

100 V AC, 50 Hz

120 V AC, 50 Hz

200 V AC, 50 Hz

230 V AC, 50 Hz

100 V AC, 60 Hz

120 V AC, 60 Hz

230 V AC, 60 Hz

Order No.

7MB2338-

0 -

Cannot be combined

0

1

2

3

4

5

6

7

8

AA

AB

AC

AD

AK

BA

BB

BD

BJ

BK

BL

CA

CB

DC

0

1

8

0

1

2

3

4

5

6

4 → A27, A29

5 → A27, A29

6

7

8

1

8 8

<i>Additional versions</i>	Order code
Add "-Z" to Order No. and specify order code	
Add-on electronics with 8 digital inputs/outputs, PROFIBUS PA interface	A12
Add-on electronics with 8 digital inputs/outputs, PROFIBUS DP interface	A13
Stainless steel (mat. no. 1.4571) connection pipe, 6 mm, complete with screwed gland (cannot be combined with Viton hose)	A27
Stainless steel (mat. no. 1.4571) connection pipe, 1/4", complete with screwed gland (cannot be combined with Viton hose)	A29
Telescopic rails (2 units, 19" rack unit version only)	A31
Set of Torx screwdrivers	A32
TAG labels (specific lettering based on customer information)	B03
Gas path for short response time ⁹⁾	C01
Chopper compartment purging for 6 mm gas connection	C02
Chopper compartment purging for 1/4" gas connection	C03
Presetting to reference temperature 0 °C for conversion into mg/m ³ , applies to all components	D15
Certificate FM/CSA Class I, Div. 2, ATEX II 3 G	E20
Measuring range indication in plain text ⁴⁾	Y11
Measurement of CO ₂ in forming gas ⁸⁾ (only in conjunction with measuring range 0 to 20/0 to 100 %)	Y14
<i>Accessories</i>	Order No.
CO ₂ absorber cartridge	7MB1933-8AA
<i>Retrofitting sets</i>	
RS 485/Ethernet converter	A5E00852383
RS 485/RS 232 converter	C79451-Z1589-U1
RS 485 / USB converter	A5E00852382
Add-on electronics with 8 digital inputs/outputs and PROFIBUS PA	A5E00056834
Add-on electronics with 8 digital inputs/outputs and PROFIBUS DP	A5E00057159

¹⁾ For measuring ranges below 1 %, a CO₂ absorber cartridge can be used for setting the zero point (see accessories)

²⁾ Without separate zero gas input or solenoid valve

³⁾ User language can be changed

⁴⁾ Standard setting: smallest measuring range, largest measuring range

⁵⁾ O₂ sensor in gas path of infrared measured component 1

⁶⁾ With chopper compartment purging (N₂ approx. 3 000 hPa required for measuring ranges below 0.1 % CO₂), to be ordered separately (see order code C02 or C03)

⁷⁾ Not suitable for use with emission measurements since the cross-sensitivity is too high

⁸⁾ CO₂ measurement in accompanying gas Ar or Ar/He (3:1); forming gas

⁹⁾ Only for version with Viton hose

¹⁰⁾ Only in conjunction with CO/CO₂, measuring range 0 to 75/750 mg/m³, 0 to 5/25 % [-BL-]

¹¹⁾ Only in combination with CO₂/NO, measuring range 0 to 5/25 %, 0 to 500/5 000 vpm [-DC-]

Ordering notes

Special selection rules must be observed when measuring some components.

Measured component N₂O

7MB2335, 7MB2337 and 7MB2338
(application: Si chip production)

- Measuring range 0 to 100 / 500 ppm (MB designation "E")
- Can only be used to measure N₂O in ultra-pure gases

7MB2337 and 7MB2338
(application: measurement in accordance with the requirements of the Kyoto protocol)

- Measuring range 0 to 500 / 5 000 vpm (MB designation "Y")
- Requires simultaneous measurement of CO₂ for correction of cross-interference

7MB2337-*CP*0-*SY* or
7MB2338-*DC*0-*SY* (including NO measurement)

7MB2338
(application in accordance with the requirements of the 30th BImSchV, "biomass")

- Measuring range 0 to 50 / 500 mg/m³ (MB designation "S")
- Requires simultaneous measurement of CO₂ and CO for correction of cross-interference

7MB2338-*BL*0-*SS*

7MB2337 and 7MB2338
(application with paramagnetic oxygen measuring cell and separate gas path)

7MB2337-4**80-**** - Z + C11
7MB2337-5**80-**** - Z + C11

7MB2338-4**80-**** - Z + C11
7MB2338-5**80-**** - Z + C11

Measured component SF₆

7MB2335, 7MB2337 and 7MB2338
(application: Si chip production)

- Measuring range 0 to 500 / 2 500 ppm (MB designation "H")
- Can only be used to measure SF₆ in inert gases

Calibration interval (TÜV versions)

Component	Smallest measuring range (TÜV)	Calibration interval	Remarks	Z suffix
CO	0 ... 150 mg/m ³	5 months	13./27. BImSchV	E50
CO	0 ... 250 mg/m ³	12 months	13./27. BImSchV	
NO	0 ... 100 mg/m ³	5 months	13./27. BImSchV	E50
NO	0 ... 250 mg/m ³	12 months	13./27. BImSchV	
SO ₂	0 ... 400 mg/m ³	12 months	13./27. BImSchV	
N ₂ O	0 ... 500 ppm		Kyoto protocol	
N ₂ O	0 ... 50 mg/m ³	6 months	30. BImSchV	

	AUTOCAL (ambient air)		AUTOCAL (inert gas e.g. N ₂)		Calibration with calibration gas		Comment (keep to technical specs)
	Zero point	Calibration point	Zero point	Calibration point	Zero point	Calibration point	
	Hours				Weeks		
IR components	3 ... 24		3 ... 24		o	52	
O ₂ - electrical chemical sensor	Stable	3 ... 24	Stable	-	52	o	
O ₂ paramagnetic Cell	-	3 ... 24			1	o	at MB < 5 %
	-	3 ... 24			8	o	at MB > 5 %
O ₂ paramagnetic Cell			3 ... 24	-	o	52	at MB < 5 %
			3 ... 24	-	o	52	at MB > 5 %
H ₂ S sensor	3	-	3	-	o	12	

o = with AUTOCAL

Calibration intervals, standard devices