

Ammonia 1 - 100 ppm

Order-No. 86 10 130

Measuring Range:	1 to 100 ppm
Typical Measuring Time:	10 to 75 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	1 to 30 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 25 ppm ammonia by: 2000 ppm hydrogen sulfide

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		4
Probe Set GP600 (83 28 667)		3

Place You Put Your Faith

Ammonia 100 - 2500 ppm

Order-No. 86 10 020

Measuring Range:	100 to 2500 ppm
Typical Measuring Time:	approx. 3 to 45 s
Accuracy:	± 20 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	1 to 40 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 250 ppm ammonia by: 500 ppm hydrogen sulfide

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		2
Telescopic probe ES 150 (83 16 533)		2
Probe Set GP600 (83 28 667)		3

Place You Put Your Faith

Benzene 1 - 150 ppb

Order No. 86 10 600

Measuring Range:	1 to 150 ppb (only in conjunction with Tube ppb Booster Basic 37 02 013)
Typical Measuring Time:	approx. 100 to 900 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	20 to 30 °C → none < 20 °C → 3 % from measured value per °C
Humidity:	1 to 30 mg/L
Humidity correction:	none
Cross Sensitivity:	
No influence at 25 ppb benzene by:	20 ppm octan 130 ppb toluene 150 ppb xylene

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	5
Bar probe 90 (83 16 532)		2
Telescopic probe ES 150 (83 16 533)		1
Probe Set GP600 (83 28 667)		3

Benzene 0.15 - 10 ppm

Order No. 86 10 030

Measuring Range:	0.15 to 10 ppm
Typical Measuring Time:	approx. 25 to 150 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 30 °C
Temperature correction:	20 to 30 °C → none 0 to 19 °C → + 4% from the measured value per °C
Humidity:	1 to 25 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 1 ppm benzene by:	50 ppm toluene
	50 ppm xylene
	800 ppm n-octane

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	7
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		2
Probe Set GP600 (83 28 667)		3

1,3-Butadiene 25 - 500 ppb

Order No. 86 10 460

Measuring Range:	25 to 500 ppb (only in conjunction with Tube ppb Booster Basic 37 02 013)
Typical Measuring Time:	approx. 200 to 600 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	0 to 25 °C → none > 25 °C → - 2.5 % from measurement value per °C
Humidity:	5 to 30 mg/L
Humidity correction:	none
Cross Sensitivity:	
No influence at 250 ppb 1,3 butadiene by:	15 ppm toluene 50 ppm n-hexane 75 ppm benzene 500 ppb hydrogen sulfide 500 ppb white spirit
Hose and probe measurement	
Tube and probe measurements are not possible with the MicroTube 1,3-butadiene 25 - 500 ppb.	

Place You Put Your Faith

1,3-Butadiene 0.5 - 25 ppm

Order No. 86 10 300

Measuring Range:	0.5 to 25 ppm
Typical Measuring Time:	10 to 280 s
Accuracy:	± 15 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	0 to 25 °C → none > 25 °C → - 2.5 % from measurement value per °C
Humidity:	5 to 30 mg/L
Humidity correction:	< 10 mg/L → 8 % from measurement value per mg/L > 10 mg/L → - 1 % from measurement value per mg/L

Cross Sensitivity:

No influence at 2 ppm 1,3 butadiene by:

- 5 ppm H₂S
- 25 ppm white spirit
- 50 ppm toluene
- 50 ppm n-hexane
- 100 ppm benzene

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		1
Probe Set GP600 (83 28 667)		3

Carbon Dioxide 200 – 50,000 ppm

Order-No. 86 10 190

Measuring Range:	200 to 50,000 ppm
Typical Measuring Time:	2 to 120 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 30 °C
Temperature correction:	none
Humidity:	1 to 30 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 5000 ppm carbon dioxide by:

100 ppm hydrogen sulfide

200 ppm sulfur dioxide

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		2
Telescopic probe ES 150 (83 16 533)		2
Probe Set GP600 (83 28 667)		3

Place You Put Your Faith

Carbon Monoxide 2 - 1000 ppm

Order-No. 86 10 080

Measuring Range:	2 to 1000 ppm
Typical Measuring Time:	approx. 5 to 300 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	10 to 40 °C
Temperature correction:	none
Humidity:	1 to 40 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 10 ppm carbon monoxide by:

2000 ppm hydrogen

1000 ppm butane

1000 ppm propane

500 ppm n-octane

100 ppm hydrogen sulfide

15 ppm nitrogen dioxide

10 ppm sulfur dioxide

Hose and probe measurement

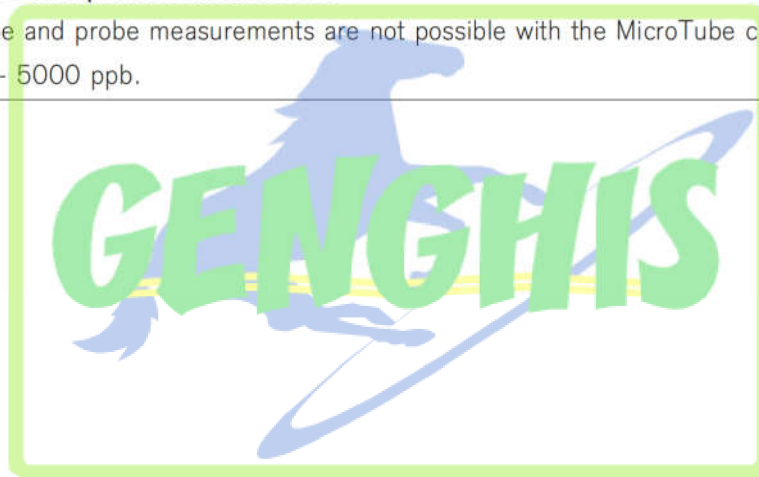
The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		2
Telescopic probe ES 150 (83 16 533)		2
Probe Set GP600 (83 28 667)		3

Chlorine 50 - 5000 ppb

Order-No. 86 10 010

Measuring Range:	50 to 5000 ppb
Typical Measuring Time:	10 to 400 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	1 to 20 mg/L
Humidity correction:	none
Cross Sensitivity:	
No influence at 250 ppb chlorine by: 10 ppm hydrochloric acid	
Hose and probe measurement	
Tube and probe measurements are not possible with the MicroTube chlorine 50 - 5000 ppb.	



Place You Put Your Faith

Ethylene Oxide 25 - 250 ppb

Order No. 86 10 200

Measuring Range:	25 to 250 ppb
Typical Measuring Time:	150 to 600 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	10 to 25 °C
Humidity:	2 to 15 mg/L

Cross Sensitivity:

No influence at 100 ppb ethylene oxide by:

250 ppb acroleine
300 ppb formaldehyde
2500 ppb 2-chloroethanol
3000 ppb ethanol
4500 ppb iso-propanol

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		1
Probe Set GP600 (83 28 667)		3

Place You Put Your Faith

Ethylene Oxide 0.25 - 10 ppm

Order No. 86 10 580

Measuring Range:	0.25 to 10 ppm
Typical Measuring Time:	100 to 500 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	10 to 30 °C
Temperature correction:	none
Humidity:	1 to 25 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 1 ppm ethylene oxide by:

0.1 ppm acrolein
10 ppm formaldehyde
25 ppm iso-propanol
50 ppm ethanol

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		1
Probe Set GP600 (83 28 667)		3

Formaldehyde 5 - 150 ppb

Order No. 86 10 540

Measuring Range:	5 to 150 ppb
Typical Measuring Time:	approx. 360 to 960 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	15 to 35 °C
Temperature correction:	none
Humidity:	4 to 18 mg/L
Humidity correction:	< 8 mg/L → 40 % from measurement value per mg/L 8 to 12 mg/L → none > 12 mg/L → -10 % from measurement value per mg/L

Cross Sensitivity:

No influence at 75 ppb formaldehyde by:

- 0.5 ppm acrolein
- 10 ppm vinyl acetate
- 100 ppm styrene
- 100 ppb acetaldehyde

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3	3
PTFE-lined PVC hose	15	10
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		2
Probe Set GP600 (83 28 667)		3

Formaldehyde 0.15 - 3 ppm

Order No. 86 10 100

Measuring Range:	0.15 to 3 ppm
Typical Measuring Time:	300 to 600 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	4 to 20 mg/L
Humidity correction:	< 8 mg/L → +40 % from measurement value per mg/L 8 to 12 mg/L → none > 12 mg/L → -10 % from measurement value per mg/L

Cross Sensitivity:

No influence at 0.6 ppm formaldehyde by:

0.25 ppm acrolein
10 ppm vinyl acetate
50 ppm acetaldehyde
100 ppm styrene

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (8316532)		1
Telescopic probe ES 150 (8316533)		2
Probe Set GP600 (83 28 667)		3

Hydrochloric acid 0.5 - 25 ppm

Order-No. 86 10 090

Measuring Range:	0.5 to 25 ppm
Typical Measuring Time:	10 to 100 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 30 °C
Temperature correction:	none
Humidity:	1 to 5 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 5 ppm hydrochloric acid by:

100 ppm hydrogen sulfide

100 ppm sulfur dioxide

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5	5
FKM hose	10	7
FKM hose	20	20
FKM hose	45	not possible
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (8316532)		6
Telescopic probe ES 150 (8316533)		not possible
Probe Set GP600 (83 28 667)		5

Hydrocyanic acid 0.5 - 50 ppm

Order-No. 86 10 520

Measuring Range:	0.5 to 50 ppm
Typical Measuring Time:	approx. 20 to 180 s
Accuracy:	± 15 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	1 to 40 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 5 ppm hydrocyanic acid by:

200 ppm hydrocyanic acid

200 ppm ammonia

25 ppm sulfur dioxide

10 ppm hydrogen sulfide

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	8
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		3
Telescopic probe ES 150 (83 16 533)		not possible
Probe Set GP600 (83 28 667)		3

Hydrogen Sulfide 0.1 - 50 ppm

Order No. 86 10 050

Measuring Range:	0.1 to 50 ppm
Typical Measuring Time:	5 to 960 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	1 to 40 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 1 ppm hydrogen sulphide by:

1 ppm sulfur dioxide

20 ppm nitrogen dioxide

100 ppm mercaptane

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		1
Probe Set GP600 (83 28 667)		3

Mercury 0.005 - 0.25 mg/m³

Order No. 86 10 350

Measuring Range:	0.005 to 0.25 mg/m ³
Typical Measuring Time:	approx. 240 to 1200 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	1 to 40 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 0.025 mg/m³ mercury by:

50 ppm benzene

200 ppm toluene

200 ppm xylol, mix. of isomeric

1 Vol.% methane

Hydrogen Sulphide leads to considerable plus errors, therefore mercury measurements in the presence of hydrogen Sulphide are not possible.

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		1
Probe Set GP600 (83 28 667)		3

Nitrogen Dioxide 0.25 - 25 ppm

Order-No. 86 10 120

Measuring Range:	0.25 to 25 ppm
Typical Measuring Time:	10 to 210 s
Accuracy:	± 20 % (under calibration conditions)
Ambient Conditions:	
Temperature:	10 to 40 °C
Temperature correction:	none
Humidity:	1 to 30 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 1 ppm nitrogen dioxide by:

0.1 ppm ozone

50 ppm sulfur dioxide

0.5 ppm chlorine

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	10
FKM hose	45	20
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		2
Telescopic probe ES 150 (83 16 533)		not possible
Probe Set GP600 (83 28 667)		10

Nitrous Fumes 0.25 - 50 ppm

Order-No. 86 10 060

Measuring Range:	0.25 to 25 ppm
Typical Measuring Time:	5 to 120 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	none
Humidity:	1 to 30 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 1 ppm nitrous fumes by:

1 ppm ozone

30 ppm sulfur dioxide

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		1
Probe Set GP600 (83 28 667)		3

Place You Put Your Faith

Petroleum Hydrocarbon 10 - 3000 ppm

Order No. 86 10 270

Measuring Range:	10 to 3000 ppm cyclohexane
Typical Measuring Time:	approx. 10 to 360 s
Accuracy:	± 15 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	< 17 °C → + 5 % from measured value per °C 17 to 25 °C → none > 25 °C → - 5 % from measured value per °C
Humidity:	1 to 40 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 250 ppm cyclohexane by

50 ppm n-octane
100 ppm n-hexane
100 ppm n-nonane
100 ppm toluene
150 ppm xylene, isomer mixture
250 ppm n-heptane

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	5
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		1
Telescopic probe ES 150 (83 16 533)		2
Probe Set GP600 (83 28 667)		3

Sulfur Dioxide 0.05 - 5 ppm

Order-No. 86 10 110

Measuring Range:	0.05 to 5 ppm
Typical Measuring Time:	20 to 480 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 30 °C
Temperature correction:	none
Humidity:	1 to 20 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 0.5 ppm sulfur dioxide by:

150 ppm hydrogen sulfide

5 ppm hydrogen chlorine

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flushing time (min)
FKM hose	5 - 20	10
FKM hose	45	20
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		3
Telescopic probe ES 150 (83 16 533)		15
Probe Set GP600 (83 28 667)		10

Place You Put Your Faith

Toluene 10 - 1000 ppm

Order No. 86 10 250

Measuring Range:	10 to 1000 ppm
Typical Measuring Time:	6 to 360 s
Accuracy:	± 20 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	< 10 °C: +4% from the measured value per °C 10 °C to 40 °C → none
Humidity:	1 to 40 mg/L
Humidity correction:	none

Cross Sensitivity:

No influence at 50 ppm toluene by:	10 ppm xylene, isomer mixture
	10 ppm p-xylene
	25 ppm o-xylene
	25 ppm benzene
	300 ppm n-octane

Hydrogen Sulphide leads to considerable plus errors, therefore mercury measurements in the presence of hydrogen Sulphide are not possible.

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	7
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		2
Telescopic probe ES 150 (83 16 533)		3
Probe Set GP600 (83 28 667)		3

Xylene 10 - 1000 ppm

Order No. 86 10 260

Measuring Range:	10 to 1000 ppm
Typical Measuring Time:	10 to 240 s
Accuracy:	± 25 % (under calibration conditions)
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	< 10 °C → + 3 % from measured value per °C 10 to 40 °C → none
Humidity:	1 to 40 mg/L
Humidity correction:	none
Cross Sensitivity:	
No influence at 50 ppm xylene by	5 ppm toluene 5 ppm benzene 300 ppm n-octane

Hose and probe measurement

The following flushing time recommendations for hose and probe measurements are marked with a brand-new, dry and clean hose and probes.

Hose	Length (meter)	Flashing time (min)
FKM hose	5 - 20	3
FKM hose	45	20
PTFE-lined PVC hose	3 - 15	3
Bar probe 90 (83 16 532)		5
Telescopic probe ES 150 (83 16 533)		7
Probe Set GP600 (83 28 667)		3

Place You Put Your Faith

MicroTubes Demo

Order No. 86 10 290

Measuring Range:	n.a.
Typical Measuring Time:	5 to 30 s
Accuracy:	n.a.
Ambient Conditions:	
Temperature:	0 to 40 °C
Temperature correction:	n.a.
Humidity:	1 to 40 mg/L
Humidity correction:	n.a.
Cross Sensitivity:	n.a.
Hose and probe measurement	n.a.



Place You Put Your Faith