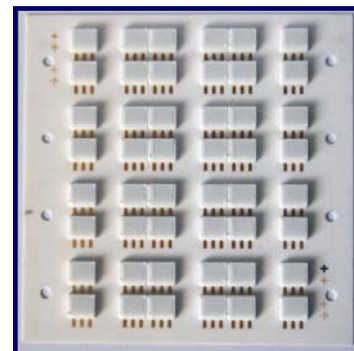
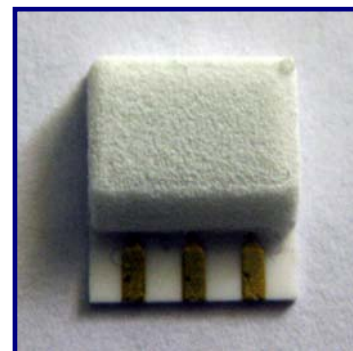


CARBON MONOXIDE 1000 SECS**Technical Specification**

<i>Sensor Type</i>	<i>CO 1000 SECS</i>
<i>Detectable Gases</i>	<i>Carbon Monoxide</i>
<i>PN wafer à 48 sensors</i>	<i>01-01-40-01</i>
<i>PN single sensor</i>	<i>01-02-40-01</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pads * non solderable</i>

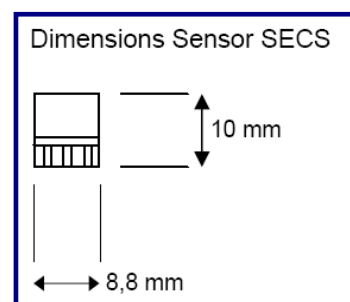


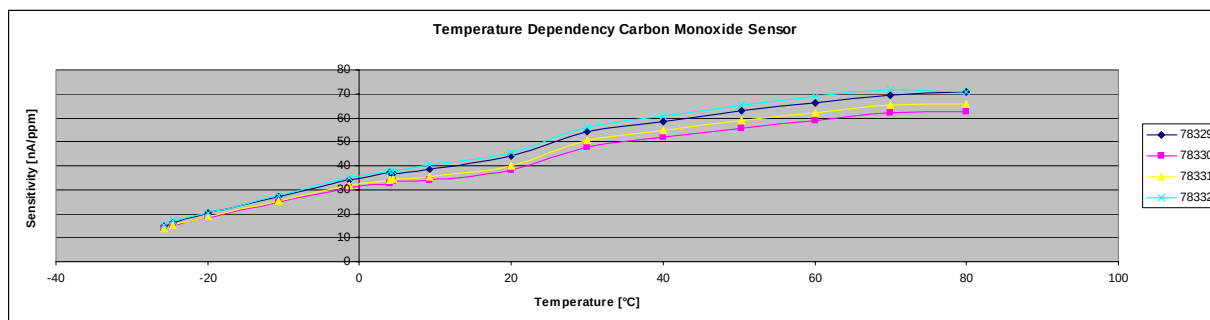
Standard Range	0 – 1000 ppm
Lower Detectable Limit (LDL)	2 ppm
Maximum Range	2000 ppm
MAK/TLV	30 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 100 nA
Sensitivity	30 ... 50 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +50°C
	10 ... 95 % r. h.
Expected life time	5 years

**CARBON MONOXIDE 1000 SECS****Dimensional Drawing**

Sensor dimensions 10 mm x 8,8 mm x 3 mm

* Soldering to the pads will damage the sensor



CARBON MONOXIDE 1000 SECS**Temperature Dependence****CARBON MONOXIDE 1000 SECS****Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen	H ₂	100 ppm	30
Hydrogen Sulphide	H ₂ S	10 ppm	30
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	0
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

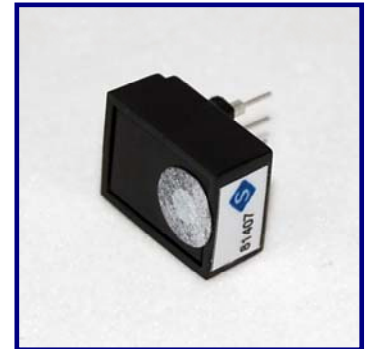
Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

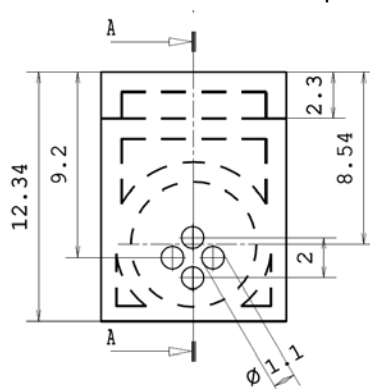
Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

CARBON MONOXIDE Micro**Technical Specification**

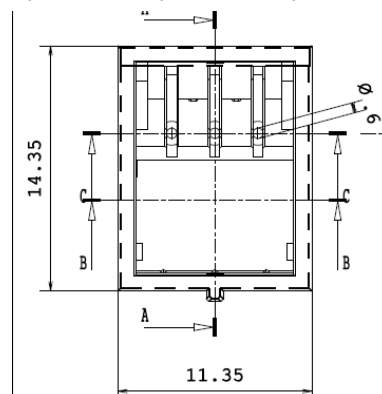
<i>Sensor Type</i>	<i>CO Sensor Micro</i>
<i>Detectable Gases</i>	<i>Carbon Monoxide</i>
<i>Part Number</i>	<i>01-27-40-01</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 pins non solderable *</i>
Standard Range	0 – 1000 ppm
Lower Detectable Limit (LDL)	2 ppm
Maximum Range	2000 ppm
MAK/TLV	30 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 100 nA
Sensitivity	30 ... 50 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +50°C
	10 ... 95 % r. h.
Expected life time	5 years

**CARBON MONOXIDE Micro****Dimensional Drawing**

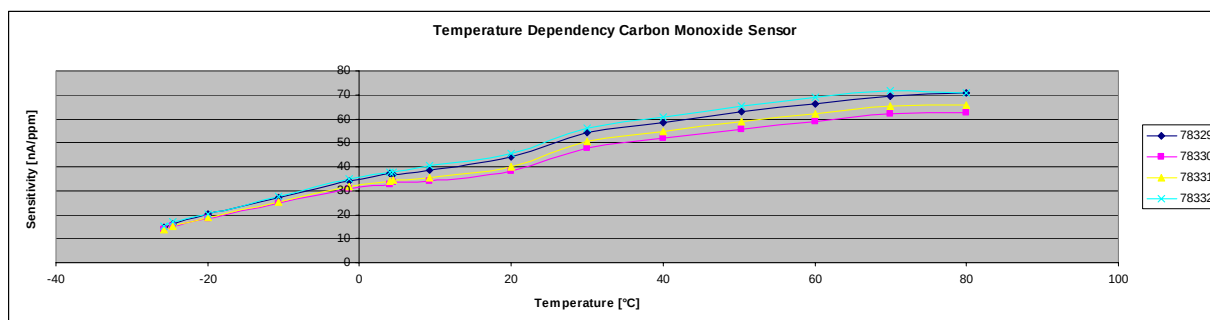
Sensor dimensions without pins



6,5 mm x 11,4 mm x 14,4 mm ± 0,15 mm tolerance



*soldering to the pins will damage the sensor

CARBON MONOXIDE *Micro***Temperature Dependence****CARBON MONOXIDE *Micro*****Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen	H ₂	100 ppm	30
Hydrogen Sulphide	H ₂ S	10 ppm	30
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	0
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

SEC Gas Sensor

CARBON MONOXIDE 4 S

Technical Specification

<i>Sensor Type</i>	<i>CO Sensor 4 S</i>
<i>Detectable Gases</i>	<i>Carbon Monoxide</i>
<i>Part Number</i>	<i>01-04-40-02</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pins *</i>
Standard Range	0 – 1000 ppm
Lower Detectable Limit (LDL)	2 ppm
Maximum Range	2000 ppm
MAK/TLV	30 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 100 nA
Sensitivity	30 ... 50 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +50°C
	10 ... 95 % r. h.
Expected life time	5 years



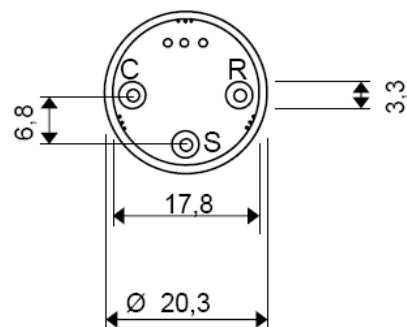
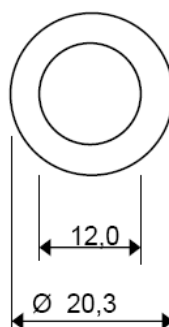
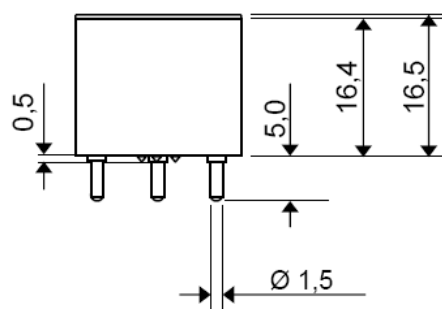
CARBON MONOXIDE 4 S

Dimensional Drawing

Sensor dimensions

Ø 20,3 mm; High 21,5 mm

± 0,15 mm tolerance

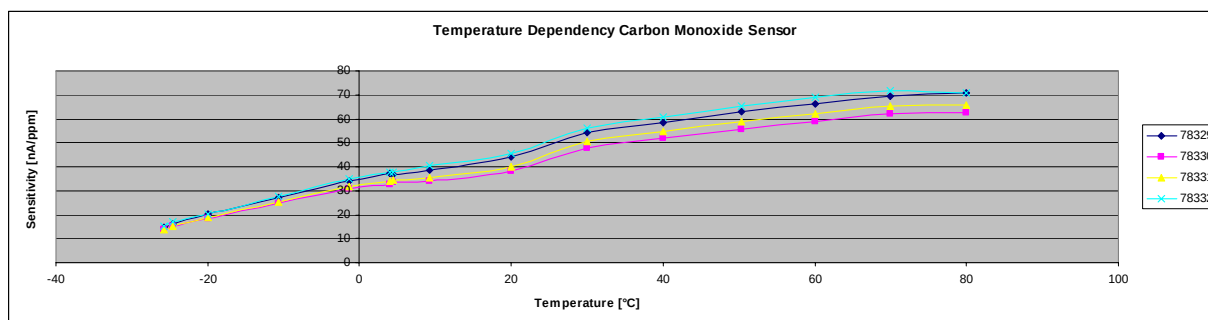


* soldering to the pins will damage the sensor

SEC Gas Sensor

CARBON MONOXIDE 4 S

Temperature Dependence



CARBON MONOXIDE 4 S

Cross Sensitivity

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen	H ₂	100 ppm	30
Hydrogen Sulphide	H ₂ S	10 ppm	30
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	0
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
Cross sensitivity gases are not target gases. Relation can change with aging.

SolidSense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which SolidSense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

SolidSense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany

Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

CARBON MONOXIDE 4 S 4000 ppm

Technical Specification

<i>Sensor Type</i>	<i>CO Sensor 4 S</i>
<i>Detectable Gases</i>	<i>Carbon Monoxide</i>
<i>Part Number</i>	<i>01-04-40-02</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pins*</i>
Standard Range	0 – 4000 ppm
Lower Detectable Limit (LDL)	2 ppm
Maximum Range	4000 ppm
MAK/TLV	30 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 100 nA
Sensitivity	30 ... 50 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +50°C
	10 ... 95 % r. h.
Expected life time	5 years



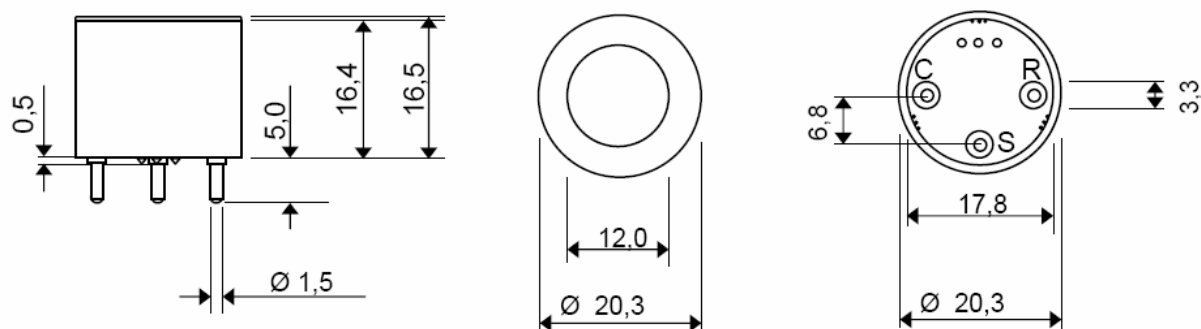
CARBON MONOXIDE 4 S

Dimensional Drawing

Sensor dimensions

Ø 20,3 mm; High 21,5 mm

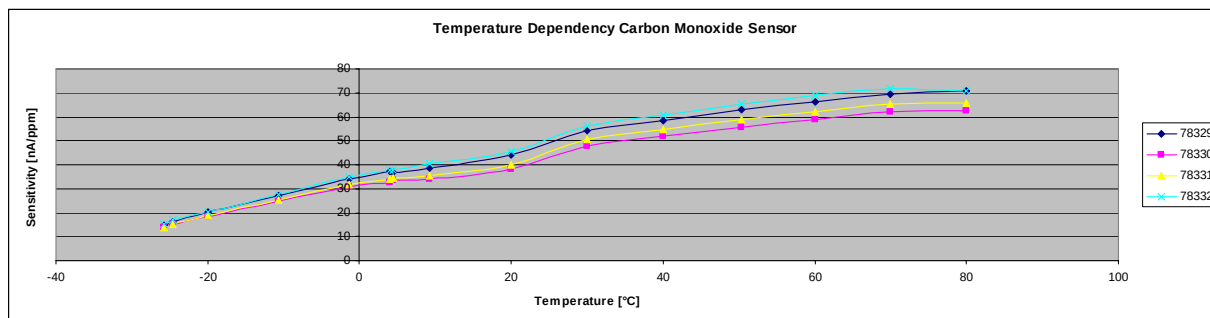
± 0,15 mm tolerance



SEC Gas Sensor

Carbon Monoxide 4 S

Temperature Dependence



Carbon Monoxide 4 S

Cross Sensitivity

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen	H ₂	100 ppm	30
Hydrogen Sulphide	H ₂ S	10 ppm	30
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	0
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany

Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de



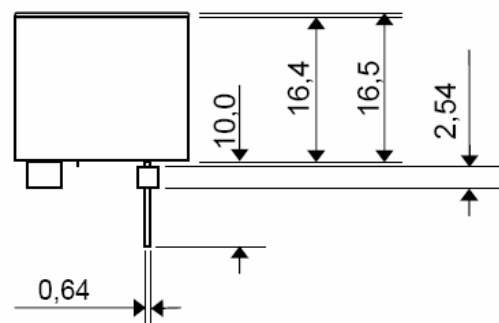
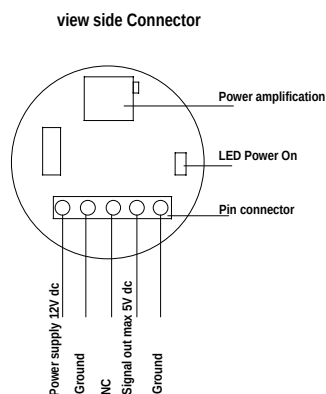
CARBON MONOXIDE 4 SE 5 V

Technical Specifications

<i>Sensor Type</i>	<i>CO Sensor 4 SE 5 V</i>
<i>Detectable Gases</i>	<i>CO Carbon Monoxide</i>
<i>Part Number</i>	<i>01-34-40-02</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Specific Sensor Data</i>	<i>no</i>
<i>Connector</i>	<i>5 pin socket connector (spacing 2,54 mm)</i>



Standard Range	0 – 1000 ppm
Lower Detectable Limit (LDL)	3 ppm
Maximum Range	2000 ppm
MAK/TLV	30 ppm
Long Term Sensitivity Drift	< 1 % / month
Deviation from linearity at standard range	< 10 % FS
Zero line	@ 1 VDC
Sensitivity	1 mV/ppm
Signal Out	1 – 5 VDC
Calibrated	1V Δ = 1000 ppm
Supply Voltage	6 to 24 VDC (3 mA @ 12 VDC)
Temperatur compensation	Not available
Amplification	With trim potentiometer
Power On	LED – signal green
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +50°C 15 ... 90 % r. h.
Sensor life time	5 years expected
Sensor dimensions	Ø 20,3 mm; Height 26,5 mm





Carbon Monoxide 4 SE 5 V

Cross Sensitivity

<i>Gas</i>	<i>Formula</i>	<i>Test Gas Concentration</i>	<i>Reading in ppm</i>
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	60 ppm	60
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen	H ₂	100 ppm	30
Hydrogen Sulphide	H ₂ S	25 ppm	0
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	0
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

Please Note: Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min, Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Rev.: 111108

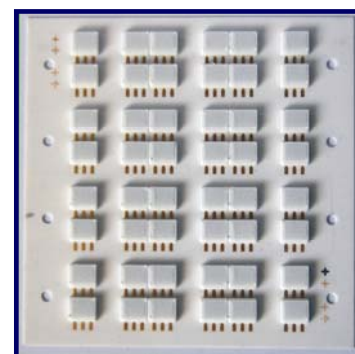
Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

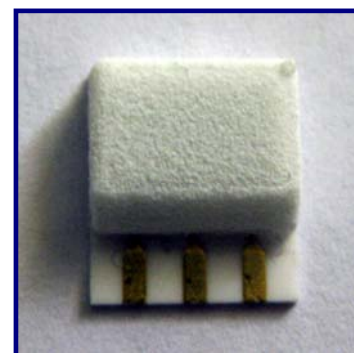
HYDROGEN SECS 1000

Technical Specification

Sensor Type	H ₂ 1000 SECS
Detectable Gases	Hydrogen
PN wafer à 48 sensors	01-01-10-01
PN single sensor	01-02-10-01
Measuring Principle	Amperometric 3-electrode sensor
Contact	3 gold pads * non solderable



Standard Range	0 – 20.000 ppm
Lower Detectable Limit (LDL)	10 ppm
Maximum Range	40.000 ppm
LEL	40.000 ppm
Long Term Sensitivity Drift	< 10 % / year
Linearity at standard range	< 10 % FS
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 100 nA
Sensitivity	0,4 ... 10,0 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	20 s
Operating conditions	- 20°C ... + 80°C
	10 ... 95 % r. h.
Expected life time	5 years

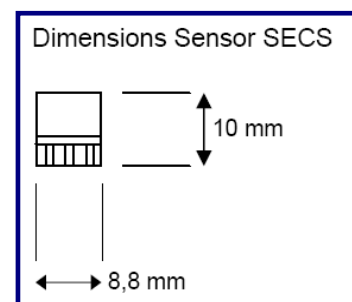


HYDROGEN SECS 1000

Dimensional Drawing

Sensor dimensions 10 mm x 8,8 mm x 3 mm

* Soldering to the pads will damage the sensor



SEC Gas Sensor**HYDROGEN SECS 1000****Temperature Dependence**

0,5 %/°C (October 2010)

HYDROGEN SECS 1000**Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	37
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen Sulphide	H ₂ S	10 ppm	440
Isopropanol	C ₃ H ₇ OH	1000 ppm	nA
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	nA
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany**Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de**

SEC Gas Sensor

HYDROGEN *Micro*

Technical Specification

Sensor Type	H ₂ 1000 Micro
Detectable Gases	Hydrogen
PN single sensor	01-27-10-01
Measuring Principle	Amperometric 3-electrode sensor
Contact	3 pins * non solderable
Standard Range	0 – 20.000 ppm
Lower Detectable Limit (LDL)	10 ppm
Maximum Range	40.000 ppm
LEL	40.000 ppm
Long Term Sensitivity Drift	< 10 % / year
Linearity at standard range	< 10 % FS
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 100 nA
Sensitivity	0,4 ... 10,0 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	20 s
Operating conditions	- 20°C ... + 80°C
	10 ... 95 % r. h.
Expected life time	5 years



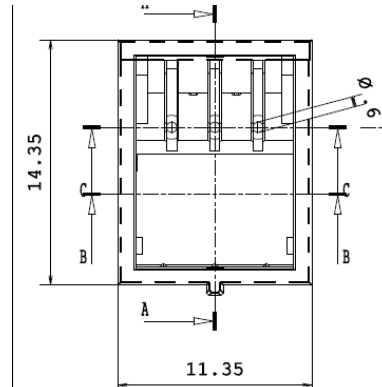
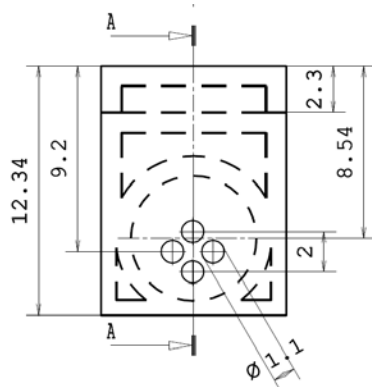
HYDROGEN *Micro*

Dimensional Drawing

Sensor dimensions without pins

6,5 mm x 11,4 mm x 14,4 mm

± 0,15 mm tolerance



* Soldering to the pins will damage the sensor

SEC Gas Sensor**HYDROGEN *Micro*****Temperature Dependence**

0,5%/°C (October 2010)

HYDROGEN *Micro***Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	37
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen Sulphide	H ₂ S	10 ppm	440
Isopropanol	C ₃ H ₇ OH	1000 ppm	nA
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	nA
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

SolidSense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which SolidSense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

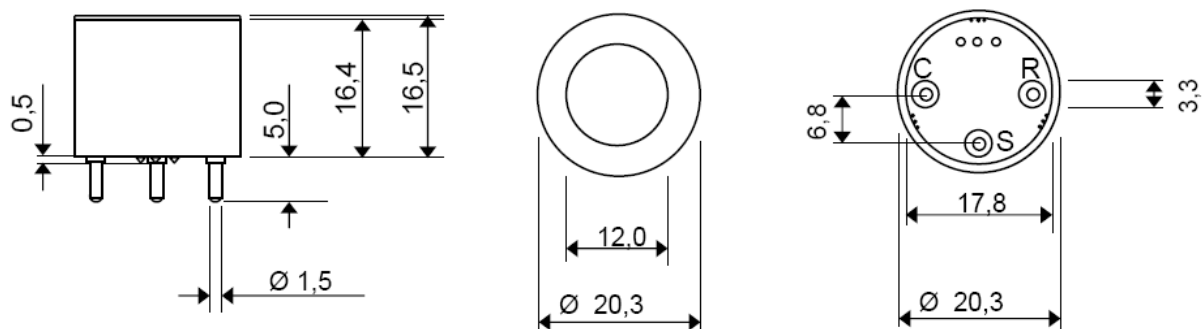
SolidSense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany**Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidSense.de – www.solidSense.de**

SEC Gas Sensor**HYDROGEN 4S****Technical Specification**

<i>Sensor Type</i>	<i>H₂ 1000 4S</i>
<i>Detectable Gases</i>	<i>Hydrogen</i>
<i>PN single sensor</i>	<i>01-04-10-02</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pins * non solderable</i>
Standard Range	0 – 20.000 ppm
Lower Detectable Limit (LDL)	10 ppm
Maximum Range	40.000 ppm
LEL	40.000 ppm
Long Term Sensitivity Drift	< 10 % / year
Linearity at standard range	< 10 % FS
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 100 nA
Sensitivity	0,4 ... 10,0 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	20 s
Operating conditions	- 20°C ... + 80°C
	10 ... 95 % r. h.
Expected life time	5 years

**HYDROGEN 4S****Dimensional Drawing**

Sensor dimensions without pins 6,5 mm x 11,4 mm x 14,4 mm ± 0,15 mm tolerance



* Soldering to the pins will damage the sensor

SEC Gas Sensor**HYDROGEN 4S****Temperature Dependence**

0,5%/°C (October 2010)

Will be updated soon

HYDROGEN 4S**Cross Sensitivity**

<i>Gas</i>	<i>Formula</i>	<i>Test Gas Concentration</i>	<i>Reading in ppm</i>
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	37
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen Sulphide	H ₂ S	10 ppm	440
Isopropanol	C ₃ H ₇ OH	1000 ppm	nA
Nitric Oxide	NO	20 ppm	0
Nitrogen Dioxide	NO ₂	10 ppm	nA
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	0

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany**Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de**



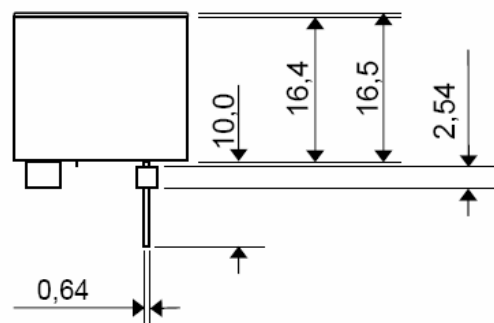
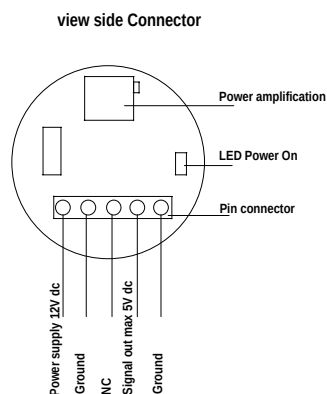
HYDROGEN 4 SE 5 V

Technical Specifications

Sensor Type	H2 Sensor 4 SE 5 V
Detectable Gases	H2 Hydrogen
Part number	01-34-10-02
Measuring Principle	Amperometric 3-electrode sensor
Specific Sensor Data	no
Connector	5 pin and socket connector (Spacing 2,54 mm)



Standard Range	0 – 20.000 ppm
Lower Detectable Limit (LDL)	100 ppm
Maximum Range	40.000 ppm
LEL	40.000 ppm
Long Term Sensitivity Drift	< 20 % / year
Deviation from linearity at standard range	< 20 % FS
Zero Line	@ 1 VDC
Sensitivity	0,12 mV to 0,24 mV/ppm
Signal Out	1 – 5 V
Calibrated	1 V Δ = 20.000 ppm
Supply Voltage	6 to 24 VDC (3 mA @ 12 VDC)
Temperatur compensation	Not available
Amplification	With trim potentiometer
Power on	LED – signal green
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	20 s
Operating conditions	- 20°C ... +60°C 15 ... 90 % r. h.
Sensor life time	5 years expected
Sensor dimensions	Ø 20,3 mm; Height 26,5 mm



Other Detection Ranges on Request



Hydrogen 4 SE 5 V

Cross Sensitivity

<i>Gas</i>	<i>Formula</i>	<i>Test Gas Concentration</i>	<i>Reading in ppm</i>
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	37
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	1000 ppm	1000
Hydrogen Sulphide	H ₂ S	10 ppm	0
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	?
Nitrogen Dioxide	NO ₂	10 ppm	?
Ozone	O ₃	0.5 ppm	0
Sulphur Dioxide	SO ₂	20 ppm	?

Please Note: Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min, Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Rev 110902

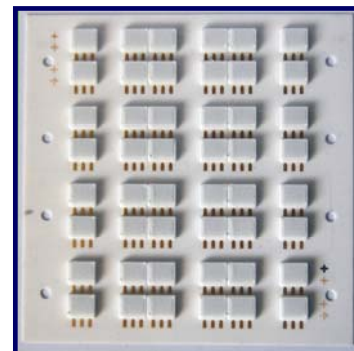
Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

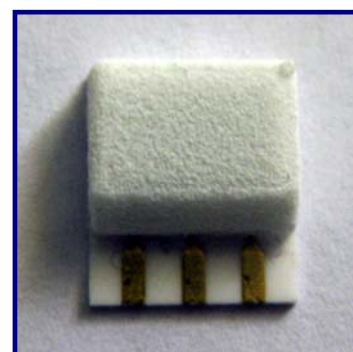
HYDROGEN SULFIDE SECS 500 HS

Technical Specification

<i>Sensor Type</i>	<i>H₂S Sensor SCES 500 HS</i>
<i>Detectable Gases</i>	<i>Hydrogen Sulfide</i>
<i>PN wafer à 48 sensors</i>	<i>01-01-20-01</i>
<i>PN single sensor</i>	<i>01-02-20-01</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pads * non solderable</i>



Standard Range	0 – 200 ppm
Lower Detectable Limit (LDL)	1 ppm
Maximum Range	500 ppm
MAK/TLV	10 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 20 nA
Sensitivity	60 ... 160 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +60°C
	10 ... 95 % r. h.
Expected sensor life time	3 years

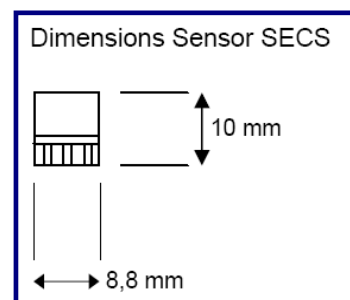


HYDROGEN SULFIDE SECS 500 HS

Dimensional Drawing

Sensor dimensions 10 mm x 8,8 mm x 3 mm

* Soldering to the pads will damage the sensor



SEC Gas Sensor**HYDROGEN SULFIDE SECS 500 HS****Temperature Dependency**

3%/°C (October 2010)

Will be updated soon

HYDROGEN SULFIDE SECS 500 HS**Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	3
Chlorine	Cl ₂	1.0 ppm	n/a
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	100 ppm	3
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	?
Nitrogen Dioxide	NO ₂	10 ppm	-2
Ozone	O ₃	0.5 ppm	n/a
Sulphur Dioxide	SO ₂	20 ppm	n/a

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany**Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de**

SEC Gas Sensor

HYDROGEN SULFIDE 500 HS Micro

Technical Specification

Sensor Type	H ₂ S 500 HS Sensor Micro
Detectable Gases	Hydrogen Sulfide
PN single sensor	01-27-20-02
Measuring Principle	Amperometric 3-electrode sensor
Contact	3 pins * non solderable



Standard Range	0 – 200 ppm
Lower Detectable Limit (LDL)	1 ppm
Maximum Range	500 ppm
MAK/TLV	10 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 20 nA
Sensitivity	60 ... 160 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +60°C
	10 ... 95 % r. h.
Expected sensor life time	3 years

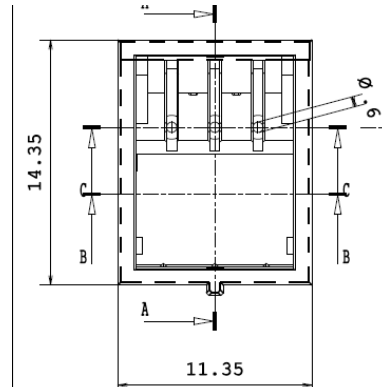
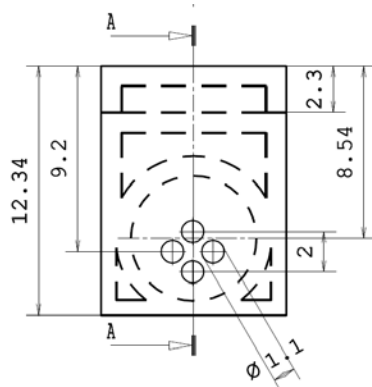
HYDROGEN SULFIDE 500 HS Micro

Dimensional Drawing

Sensor dimensions

6,5 mm x 11,4 mm x 14,4 mm

± 0,15 mm tolerance



* Soldering to the pins will damage the sensor

SEC Gas Sensor**HYDROGEN SULFIDE 500 HS Micro****Temperature Dependency**

3%/°C (October 2010)

Will be updated soon

HYDROGEN SULFIDE 500 HS Micro**Cross Sensitivity**

<i>Gas</i>	<i>Formula</i>	<i>Test Gas Concentration</i>	<i>Reading in ppm</i>
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	3
Chlorine	Cl ₂	1.0 ppm	n/a
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	100 ppm	3
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	?
Nitrogen Dioxide	NO ₂	10 ppm	-2
Ozone	O ₃	0.5 ppm	n/a
Sulphur Dioxide	SO ₂	20 ppm	n/a

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany**Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de**

SEC Gas Sensor

HYDROGEN SULFIDE 500 HS 4S

Technical Specification

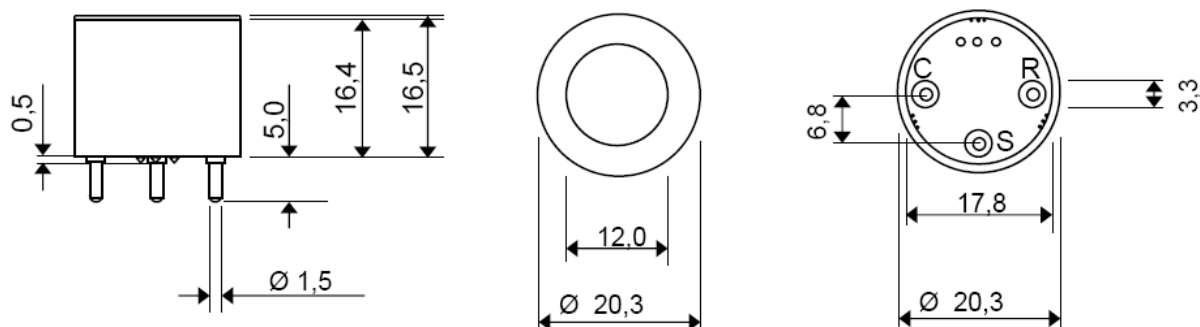
<i>Sensor Type</i>	<i>H₂S 500 HS Sensor 4S</i>
<i>Detectable Gases</i>	<i>Hydrogen Sulfide</i>
<i>PN single sensor</i>	<i>01-04-20-03</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pins * non solderable</i>
Standard Range	0 – 200 ppm
Lower Detectable Limit (LDL)	1 ppm
Maximum Range	500 ppm
MAK/TLV	10 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 20 nA
Sensitivity	60 ... 160 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +60°C
	10 ... 95 % r. h.
Expected sensor life time	3 years



HYDROGEN SULFIDE 500 HS 4S

Dimensional Drawing

Sensor dimensions 6,5 mm x 11,4 mm x 14,4 mm ± 0,15 mm tolerance



* Soldering to the pins will damage the sensor

SEC Gas Sensor**HYDROGEN SULFIDE 500 HS 4S****Temperature Dependency**

3%/°C (October 2010)

Will be updated soon

HYDROGEN SULFIDE 500 HS 4S**Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	3
Chlorine	Cl ₂	1.0 ppm	n/a
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	100 ppm	3
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	?
Nitrogen Dioxide	NO ₂	10 ppm	-2
Ozone	O ₃	0.5 ppm	n/a
Sulphur Dioxide	SO ₂	20 ppm	n/a

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany**Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de**



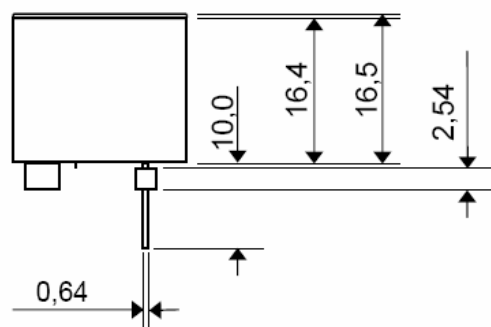
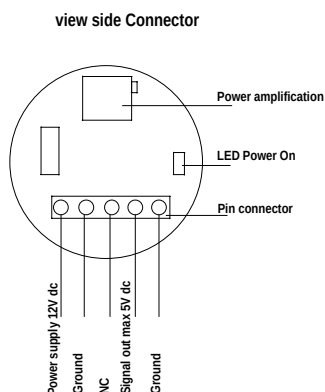
HYDROGEN SULFIDE 4 SE 5 V

Technical Specifications

<i>Sensor Type</i>	<i>H2S 4 SE 5 V</i>
<i>Detectable Gases</i>	<i>H2S Hydrogen Sulfide</i>
<i>Part Number</i>	<i>01-34-20-02</i>
<i>Measuring Principle</i>	<i>Amperometric</i>
<i>Specific Sensor Data</i>	<i>3-electrode sensor</i>
<i>Connector</i>	<i>no</i>
	<i>5 pin socket connector</i>
	<i>(Spacing 2,54 mm)</i>



Standard Range	0 – 200 ppm
Lower Detectable Limit (LDL)	1 ppm
Maximum Range	500 ppm
MAK/TLV	10 ppm
Long Term Sensitivity Drift	< 1 % / month
Deviation from linearity at standard range	< 10 % FS
Zero line	@ 1 VDC
Sensitivity	9,6 - 24 mV/ppm
Signal Out	1 to 5 VDC
Calibrated	1 V Δ = 200 ppm
Supply Voltage	6 to 24 VDC (3 mA @ 12 VDC)
Temperatur compensation	Not available
Amplification	With trim potentiometer
Power on	LED – signal green
Response time at target level	
T50	< 20 s
T90	< 60 s
Sensor warm up time typically	10 min
Operating conditions	- 20°C ... +60°C
	15 ... 90 % r. h.
Sensor life time	5 years expected
Sensor dimensions	Ø 20,3 mm: Height 26,5 mm



Other Detection Ranges on Request



Hydrogen Sulfide 4 SE 5 V

Cross Sensitivity

<i>Gas</i>	<i>Formula</i>	<i>Test Gas Concentration</i>	<i>Reading in ppm</i>
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	3
Chlorine	Cl ₂	1.0 ppm	?
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	100 ppm	3
Hydrogen Sulphide	H ₂ S	10 ppm	10
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	?
Nitrogen Dioxide	NO ₂	10 ppm	-2
Ozone	O ₃	0.5 ppm	?
Sulphur Dioxide	SO ₂	20 ppm	?

Please Note: Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min, Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Rev. 111125

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor



Specification Sheet HYDROGEN SULFIDE HL 4 SE 5 V

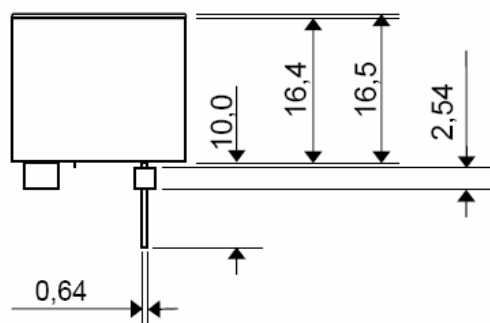
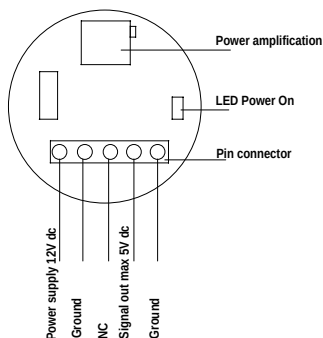
<i>Sensor Type</i>	<i>H2S HL 4 SE 5 V</i>
<i>Detectable Gases</i>	<i>H2S Hydrogen Sulfide</i>
<i>Part Number</i>	<i>01-34-20-03</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Specific Sensor Data</i>	<i>no</i>
<i>Connector</i>	<i>4 pin socket connector</i>



Standard Range	0 – 2000 ppm
Lower Detectable Limit (LDL)	1 ppm
Maximum Range	5000 ppm expected
MAK/TLV	10 ppm
Long Term Sensitivity Drift	< 1 % / month
Deviation from linearity at standard range	< 10 % FS
Zero voltage at normal conditions	200 mV (± 10 mV) shifted for Offset
Sensitivity	0,9 – 2,4 mV/ppm
Output Range	0 to 5 V
Supply Voltage	6 to 12 V
Response time at target level	
T50	< 20 s
T90	< 60 s
Sensor warm up time typically	10 min
Operating conditions	- 20°C ... +60°C 15 ... 90 % r. h.
Sensor life time	1 years expected
Sensor dimensions	Ø 20,3 mm: Height 26,5 mm

Technical Specifications

view side Connector



Other Detection Ranges on Request

SEC Gas Sensor



Specification Sheet H₂S HL 4 SE 5 V

Cross Sensitivity

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	50 ppm	3
Chlorine	Cl ₂	1.0 ppm	?
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	100 ppm	3
Hydrogen Sulphide	H ₂ S	10 ppm	10
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	?
Nitrogen Dioxide	NO ₂	10 ppm	-2
Ozone	O ₃	0.5 ppm	?
Sulphur Dioxide	SO ₂	20 ppm	?

Please Note: Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Rev. 111125

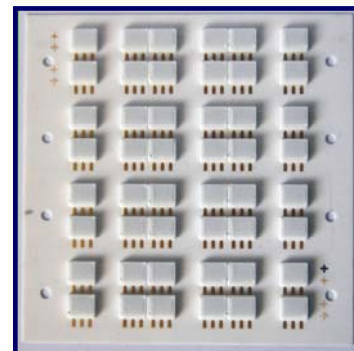
Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

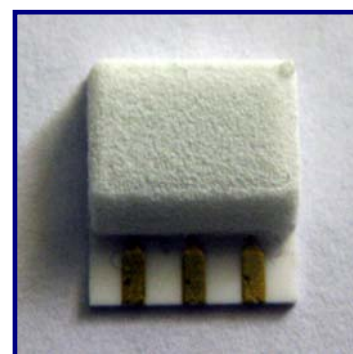
NITROGEN DIOXIDE 100 SECS

Technical Specification

<i>Sensor Type</i>	<i>NO₂ Sensor SCES</i>
<i>Detectable Gases</i>	<i>Nitrogen Dioxide</i>
<i>PN wafer à 48 sensors</i>	<i>01-01-50-01</i>
<i>PN single sensor</i>	<i>01-02-50-01</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pads * non solderable</i>



Standard Range	0 – 100 ppm
Lower Detectable Limit (LDL)	200 ppb
Maximum Range	500 ppm
MAK/TLV	3 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 2 nA
Sensitivity	10 ... 30 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +60°C
	10 ... 95 % r. h.
Expected sensor life time	5 years

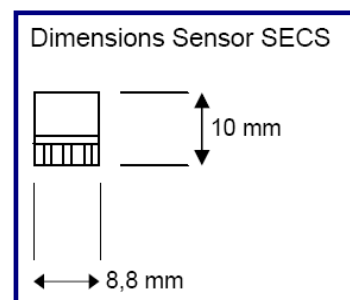


NITROGEN DIOXIDE 100 SECS

Dimensional Drawing

Sensor dimensions 10 mm x 8,8 mm x 3 mm

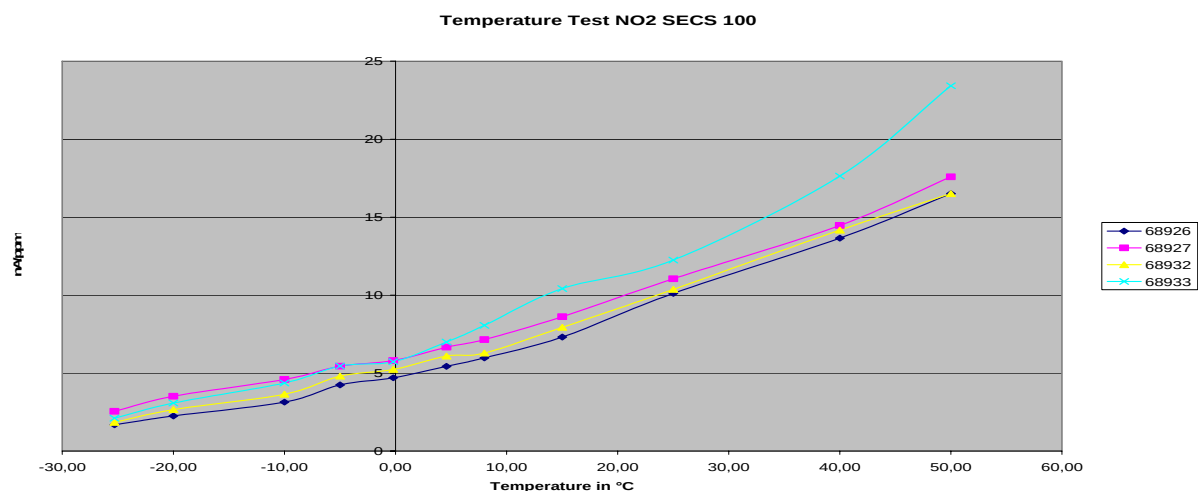
* Soldering to the pads will damage the sensor



SEC Gas Sensor

NITROGEN DIOXIDE 100 SECS

Temperature Dependency



NITROGEN DIOXIDE 100 SECS

Cross Sensitivity

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	30 ppm	0
Chlorine	Cl ₂	1.0 ppm	1.0
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	3800 ppm	0
Hydrogen Sulphide	H ₂ S	10 ppm	-7
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Chlorine Dioxide	ClO ₂	1 ppm	1
Ozone	O ₃	0.5 ppm	n/a
Sulphur Dioxide	SO ₂	20 ppm	n/a

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

SolidSense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which SolidSense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

SolidSense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany

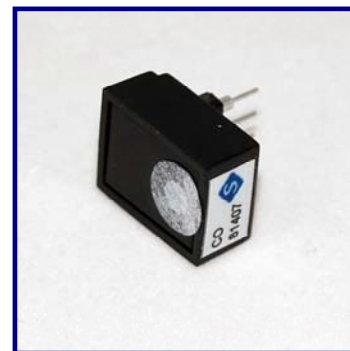
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

NITROGEN DIOXIDE *Micro*

Technical Specification

Sensor Type	NO ₂ Sensor Micro
Detectable Gases	Nitrogen Dioxide
Part Number	01-27-50-01
Measuring Principle	Amperometric 3-electrode sensor
Contact	3 pins * non solderable



Standard Range	0 – 100 ppm
Lower Detectable Limit (LDL)	200 ppb
Maximum Range	500 ppm
MAK/TLV	3 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 2 nA
Sensitivity	10 ... 30 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +60°C
	10 ... 95 % r. h.
Expected sensor life time	5 years

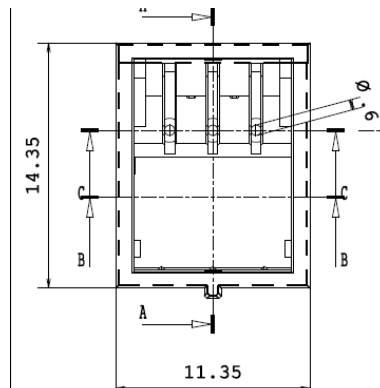
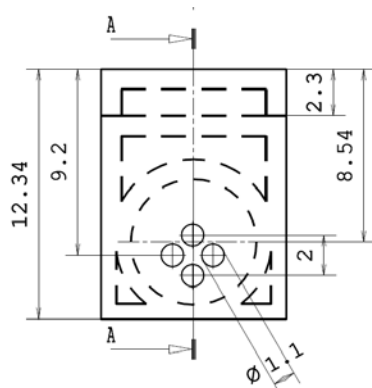
NITROGEN DIOXIDE *Micro*

Dimensional Drawing

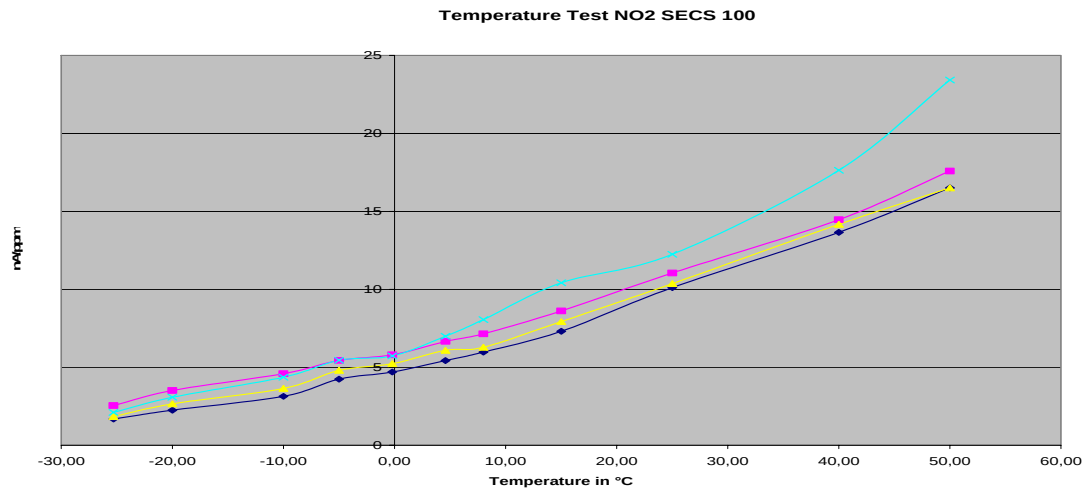
Sensor dimensions

6,5 mm x 11,4 mm x 14,4 mm

± 0,15 mm tolerance



* Soldering to the pins will damage the sensor

SEC Gas Sensor**NITROGEN DIOXIDE Micro****Temperature Dependency****NITROGEN DIOXIDE Micro****Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	30 ppm	0
Chlorine	Cl ₂	1.0 ppm	1.0
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	3800 ppm	0
Hydrogen Sulphide	H ₂ S	10 ppm	-7
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Chlorine Dioxide	ClO ₂	1 ppm	1
Ozone	O ₃	0.5 ppm	n/a
Sulphur Dioxide	SO ₂	20 ppm	n/a

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

SolidSense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which SolidSense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

SolidSense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany

Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

NITROGEN DIOXIDE 4 S

Technical Specification

<i>Sensor Type</i>	<i>NO₂ Sensor 4 S</i>
<i>Detectable Gases</i>	<i>Nitrogen Dioxide</i>
<i>Part Number</i>	<i>01-04-50-03</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pins * non solderable</i>
Standard Range	0 – 100 ppm
Lower Detectable Limit (LDL)	200 ppb
Maximum Range	500 ppm
MAK/TLV	3 ppm
Long Term Sensitivity Drift	< 1 % / month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Zero current at normal conditions	+/- 2 nA
Sensitivity	10 ... 30 nA/ppm
Response time at target level	
T50	< 10 s
T90	< 30 s
Sensor warm up time typically	60 s
Operating conditions	- 20°C ... +60°C
	10 ... 95 % r. h.
Expected sensor life time	5 years



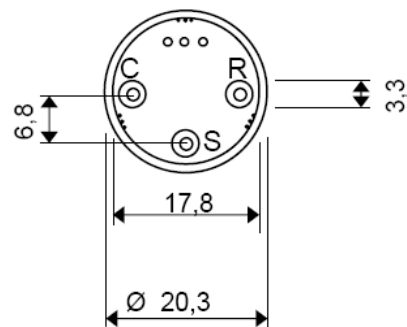
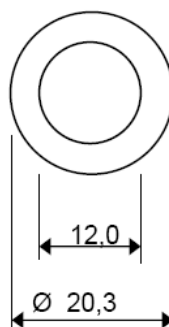
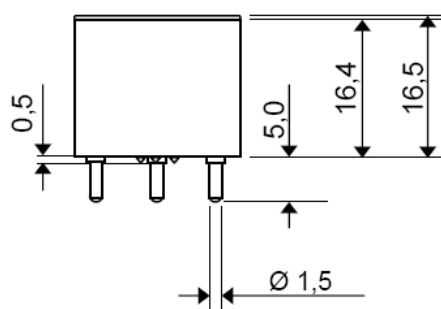
NITROGEN DIOXIDE 4 S

Dimensional Drawing

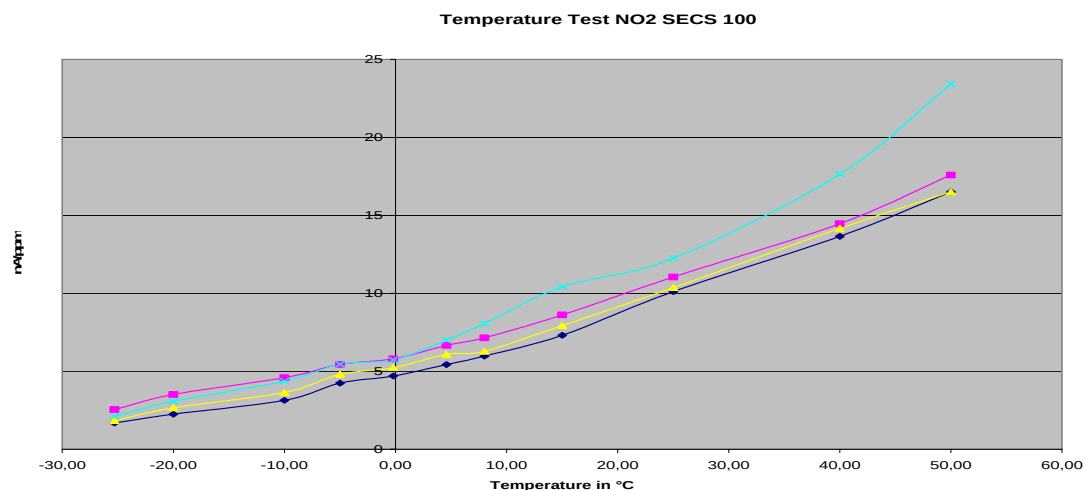
Sensor dimensions

Ø 20,3 mm; High 21,5 mm

± 0,15 mm tolerance



* Soldering to the pins will damage the sensor

SEC Gas Sensor**NITROGEN DIOXIDE 4 S****Temperature Dependency****NITROGEN DIOXIDE 4 S****Cross Sensitivity**

Gas	Formula	Test Gas Concentration	Reading in ppm
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	30 ppm	0
Chlorine	Cl ₂	1.0 ppm	1.0
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	3800 ppm	0
Hydrogen Sulphide	H ₂ S	10 ppm	-7
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Chlorine Dioxide	ClO ₂	1 ppm	1
Ozone	O ₃	0.5 ppm	n/a
Sulphur Dioxide	SO ₂	20 ppm	n/a

Note:

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany

Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor



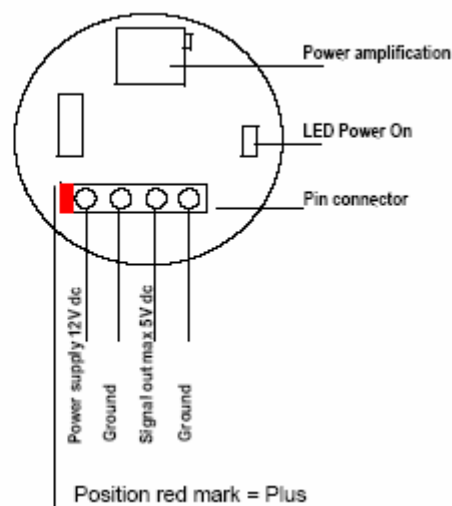
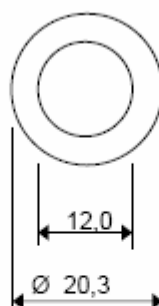
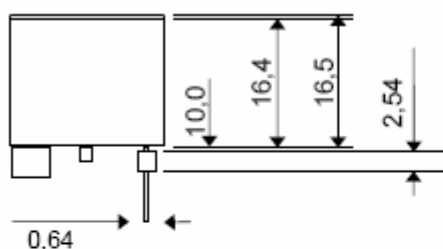
Specification Sheet NITROGEN DIOXIDE 4 SE 5 V

<i>Sensor Type</i>	<i>NO2 4 SE 5 V</i>
<i>Detectable Gases</i>	<i>NO2 Nitrogen Dioxide</i>
<i>Part Number</i>	<i>01-34-50-02</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Specific Sensor Data</i>	<i>no</i>
<i>Connector</i>	<i>4 pin socket connector</i>



Standard Range	0 – 100 ppm
Lower Detectable Limit (LDL)	200 ppb
Maximum Range	500 ppm
MAK/TLV	3 ppm
Long Term Sensitivity Drift	< 1 % / month
Deviation from linearity at standard range	< 10 % FS
Zero voltage at normal conditions	200 mV (± 10 mV) shifted for Offset
Sensitivity	~ 48 mV/ppm
Signal Out:	0,2 to 5 VDC
Supply Voltage	8 -24 VDC
Temperatur compensation	Not available
Amplification	With trim potentiometer
Power On	LED – signal green
Response time at target level	
T50	< 3 s
T90	< 10 s
Sensor warm up time typically	10 min
Operating conditions	- 20°C ... +60°C 15 ... 90 % r. h.
Sensor life time	5 years expected
Sensor dimensions	Ø 20,3 mm: Height 26,5 mm

Technical Specifications



SEC Gas Sensor**Specification Sheet NO₂ 4 SE 5 V****Cross Sensitivity**

<i>Gas</i>	<i>Formula</i>	<i>Test Gas Concentration</i>	<i>Reading in ppm</i>
Ammonia	NH ₃	25 ppm	0
Carbon Dioxide	CO ₂	5000 ppm	0
Carbon Monoxide	CO	30 ppm	0
Chlorine	Cl ₂	1.0 ppm	0
Hydrocarbons unsaturated	-	1 %	0
Hydrogen	H ₂	100 ppm	0
Hydrogen Sulphide	H ₂ S	10 ppm	-7
Isopropanol	C ₃ H ₇ OH	1000 ppm	0
Nitric Oxide	NO	20 ppm	0
Chlorine Dioxide	ClO ₂	1 ppm	1
Ozone	O ₃	0.5 ppm	?
Sulphur Dioxide	SO ₂	20 ppm	?

Please Note: Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
 Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Rev. 11-11-02

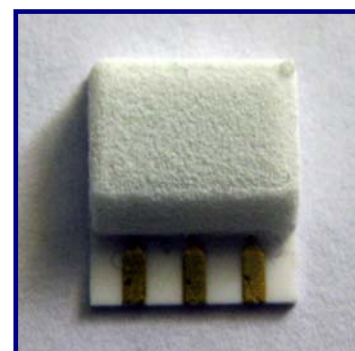
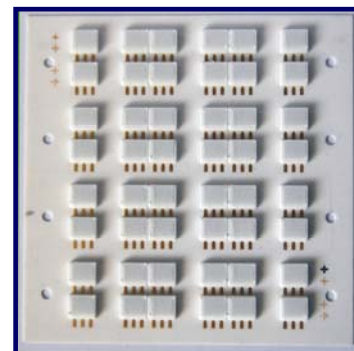
Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

OXYGEN SECS

Technical Specification

<i>Sensor Type</i>	<i>O₂ Sensor SECS</i>
<i>Detectable Gases</i>	<i>Oxygen</i>
<i>PN wafer à 48 sensors</i>	<i>01-01-30-01</i>
<i>PN single sensor</i>	<i>01-02-30-01</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pads * non solderable</i>
Standard Range	0.0 – 30.0 Vol. %
Lower Detectable Limit (LDL)	0.1 Vol. %
Maximum Range	50 Vol. %
Bias Voltage	- 400 to -600 mV
Long Term Sensitivity Drift	< 0.1 Vol. % / 6 month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Current at 21 Vol. % Oxygen	7 – 11 µA
Sensitivity	~ 0,04 nA/ppm
Response time at target level	
T50	< 5 s
T90	< 15 s
Sensor warm up time typically	15 s
(Pre-powered)	(10) s
Operating conditions	- 20°C ... +50°C
	10 ... 95 % r. h.
Pressure dependence	linear
Expected life time	> 3 years

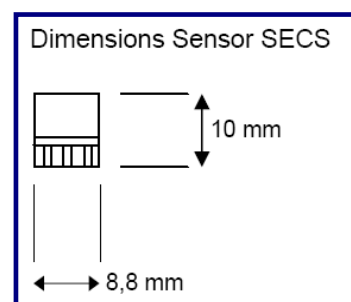


OXYGEN SECS

Dimensional Drawing

Sensor dimensions without pins
10 mm x 8,8 mm x 3 mm
± 0,15 mm tolerance

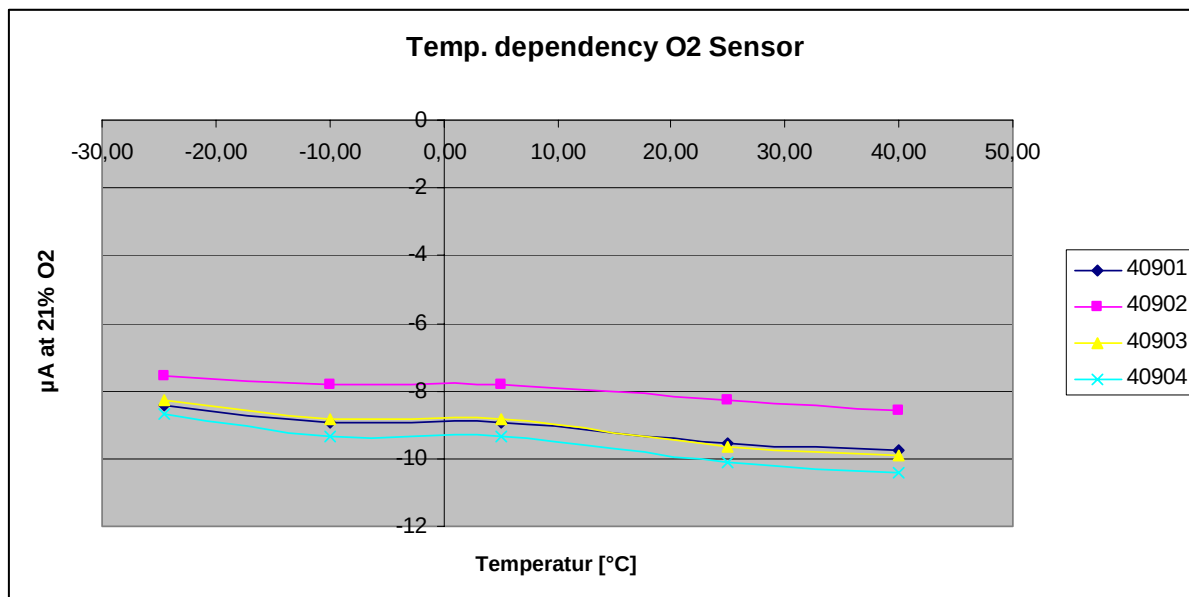
* soldering to the pads will damage the sensor



SEC Gas Sensor

OXYGEN SECS

Temperature Dependence



OXYGEN SECS

Cross Sensitivity

N.A.

Note:

The sensor can be used in applications of high CO₂ level due to the fact that it contains an acid electrolyte.

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor

OXYGEN Micro

Technical Specification

Sensor Type	O ₂ Sensor Micro
Detectable Gases	Oxygen
Part Number	01-27-30-01
Measuring Principle	Amperometric 3-electrode sensor
Contact	3 pins* non solderable
Standard Range	0.0 – 30.0 Vol. %
Lower Detectable Limit (LDL)	0.1 Vol. %
Maximum Range	50 Vol. %
Bias Voltage	- 400 to -600 mV
Long Term Sensitivity Drift	< 0.1 Vol. % / 6 month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Current at 21 Vol. % Oxygen	7 – 11 µA
Sensitivity	~ 0,04 nA/ppm
Response time at target level	
T50	< 5 s
T90	< 15 s
Sensor warm up time typically	15 s
(Pre-powered)	(10) s
Operating conditions	- 20°C ... +50°C
	10 ... 95 % r. h.
Pressure dependence	linear
Expected life time	> 3 years



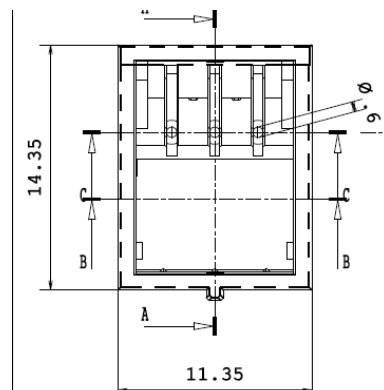
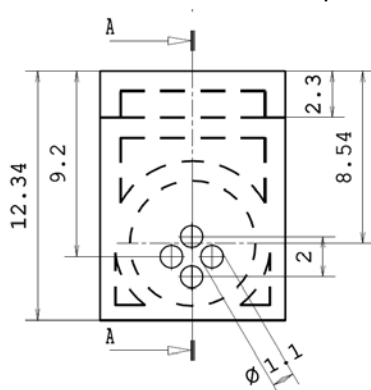
OXYGEN Micro

Dimensional Drawing

Sensor dimensions without pins

6,5 mm x 11,4 mm x 14,4 mm

± 0,15 mm tolerance



Sensor Datasheet O2 Micro_Rev 2012-03-15.doc

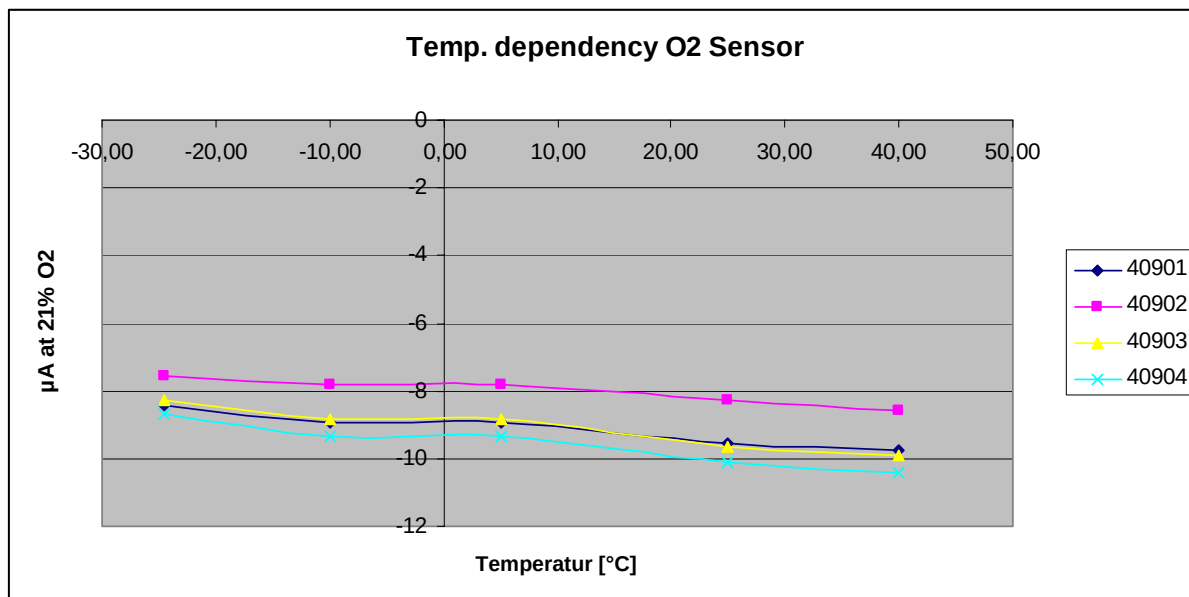
* soldering to the pins will damage the Sensor

Page 1 of 2

SEC Gas Sensor

OXYGEN Micro

Temperature Dependence



OXYGEN Micro

Cross Sensitivity

N.A.

Note:

The sensor can be used in applications of high CO₂ level due to the fact that it contains an acid electrolyte.

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
Cross sensitivity gases are not target gases. Relation can change with aging.

SolidSense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which SolidSense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

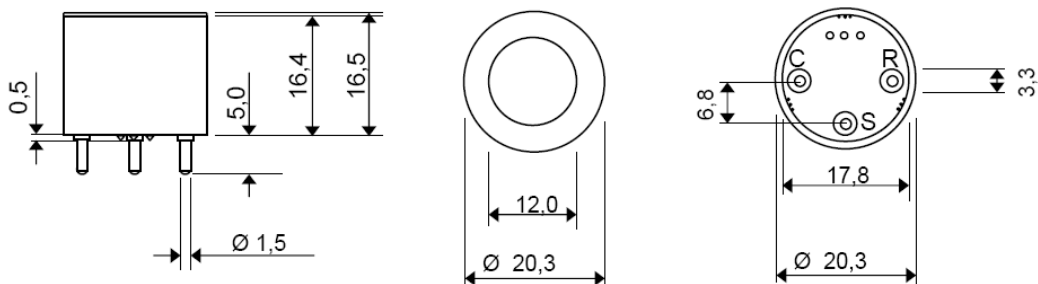
SolidSense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de

SEC Gas Sensor**OXYGEN 4 S****Technical Specification**

<i>Sensor Type</i>	<i>O₂ Sensor 4 S</i>
<i>Detectable Gases</i>	<i>Oxygen</i>
<i>Part Number</i>	<i>01-04-30-02</i>
<i>Measuring Principle</i>	<i>Amperometric 3-electrode sensor</i>
<i>Contact</i>	<i>3 gold pins* non solderable</i>



Standard Range	0.0 – 30.0 Vol. %
Lower Detectable Limit (LDL)	0.1 Vol. %
Maximum Range	50 Vol. %
Bias Voltage	- 400 to -600 mV
Long Term Sensitivity Drift	< 0.1 Vol. % / 6 month
Linearity at standard range	linear
Repeatability	> 98 % of signal
Current at 21 Vol. % Oxygen	7 – 11 µA
Sensitivity	~ 0,04 nA/ppm
Response time at target level	
T50	< 5 s
T90	< 15 s
Sensor warm up time typically	15 s
(Pre-powered)	(10) s
Operating conditions	- 20°C ... +50°C
	10 ... 95 % r. h.
Pressure dependence	linear
Expected life time	> 3 years
Sensor dimensions	Ø 20,3 mm; High 21,5 mm (± 0,15 mm tolerance)



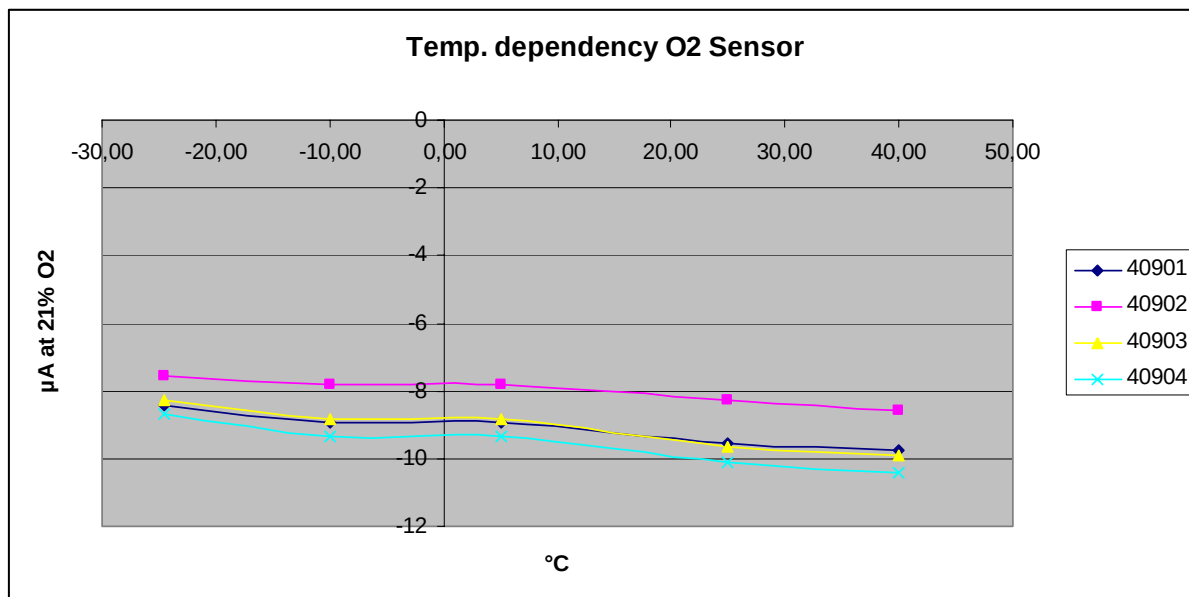
* soldering to the pins will damage the sensor

SEC Gas Sensor



Oxygen 4 S

Temperature Dependence



Oxygen 4 S

Cross Sensitivity

N.A.

Note:

The sensor can be used in applications of high CO₂ level due to the fact that it contains an acid electrolyte.

Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min
Cross sensitivity gases are not target gases. Relation can change with aging.

Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de



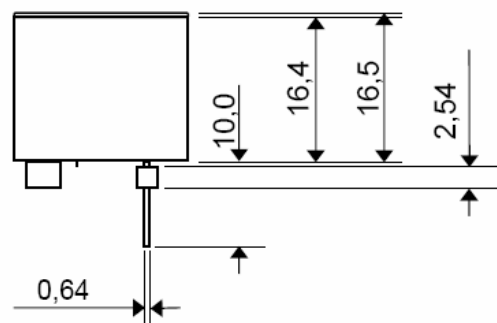
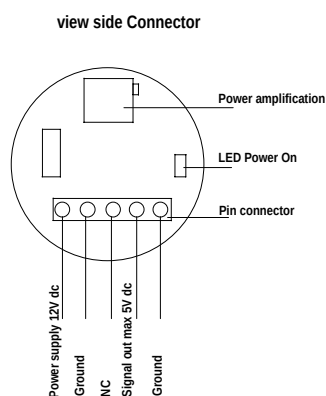
OXYGEN 4 SE 5 V

Technical specifications

<i>Sensor Type</i>	<i>O2 Sensor 4 SE 5 V</i>
<i>Detectable Gases</i>	<i>O2 Oxygen</i>
<i>Part number</i>	<i>01-34-30-02</i>
<i>Measuring Principle</i>	<i>Amperometric</i>
<i>Specific Sensor Data</i>	<i>3-electrode sensor</i>
<i>Connector</i>	<i>no</i>
	<i>5 pin socket connector</i>
	<i>(Spacing 2,54 mm)</i>



Standard Range	0.0 – 30.0 Vol.%
Lower Detectable Limit (LDL)	0.1 Vol.%
Maximum Range	50 Vol.%
Long Term Sensitivity Drift	< 0.1 Vol.% / month
Deviation from linearity at standard range	< 5 % FS
Voltage at 21 Vol.% Oxygen	2,1 VDC
Sensitivity	100 mV / % O2
Signal Out	0 – 5 VDC
Calibrated	2,1 VDC = 21% O2
Supply Voltage	6 -24 VDC (3 mA @ 12 VDC)
Temperatur compensation	Not available
Amplification	With trim potentiometer
Power On	LED – signal green
Response time at target level	
T50	< 5 s
T90	< 30 s
Sensor warm up time typically (pre-sourced)	10 min (10 s)
Operating conditions	- 20°C ... +50°C
	15 ... 90 % r. h.
Sensor life time	3 years expected
Sensor dimensions	Ø 20,3 mm, Heigth 26,5 mm (+/- 0,15 mm)





Oxygen 4 SE 5 V

Cross Sensitivity

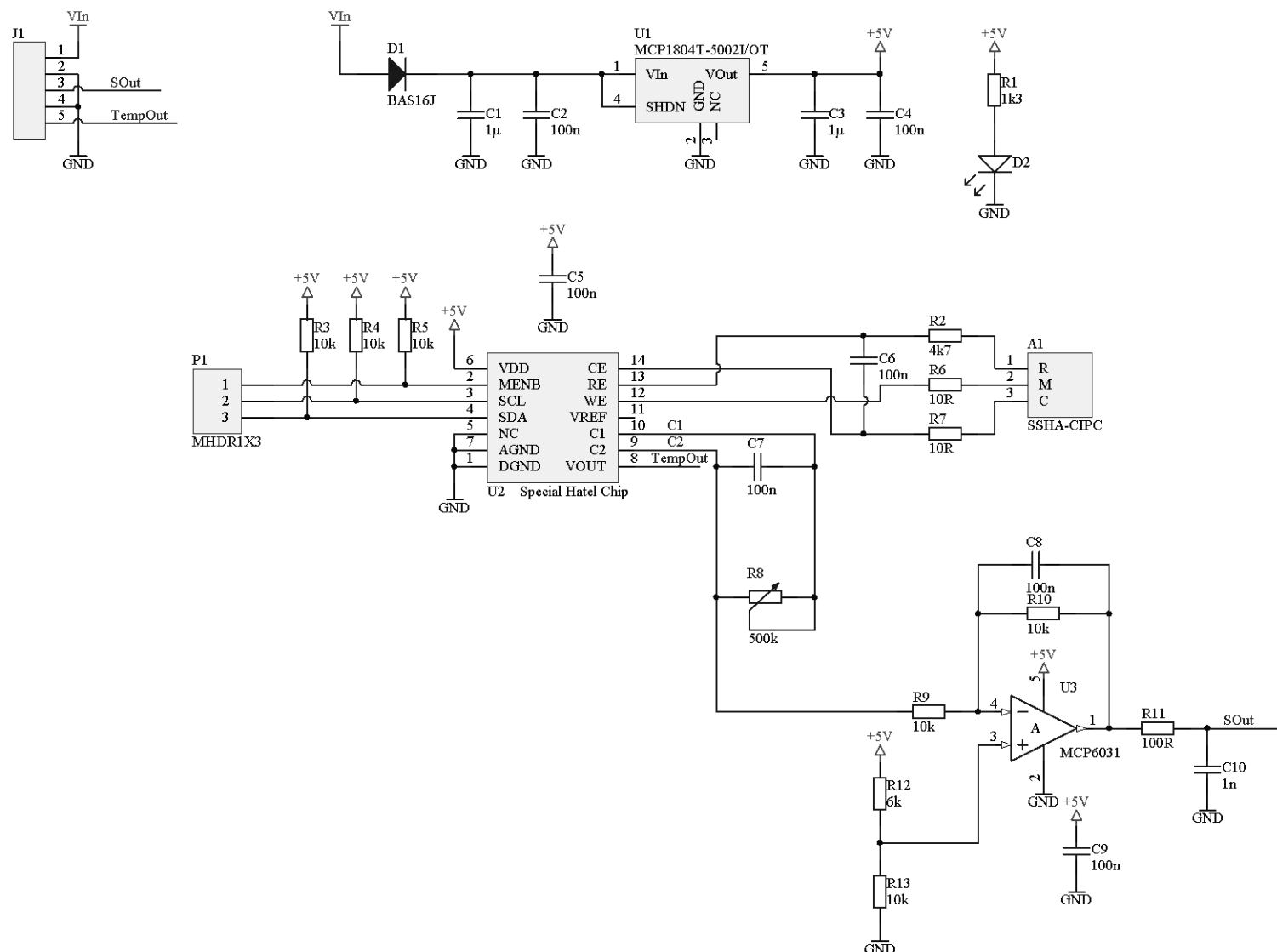
Gas	Formula	Test Gas Concentration	Reading in %
Ammonia	NH ₃	100 ppm	0.0
Carbon Dioxide	CO ₂	5000 ppm	0.0
Carbon Monoxide	CO	60 ppm	0.0
Chlorine	Cl ₂	1.0 ppm	0.0
Hydrocarbons unsaturated	-	1 %	0.0
Hydrogen	H ₂	100 ppm	0.0
Hydrogen Sulphide	H ₂ S	10 ppm	0.0
Isopropanol	C ₃ H ₇ OH	1000 ppm	0.0
Nitric Oxide	NO	20 ppm	0.0
Nitrogen Dioxide	NO ₂	10 ppm	0.0
Ozone	O ₃	0.5 ppm	0.0
Sulphur Dioxide	SO ₂	20 ppm	0.0

Please Note: Test conditions at 20°C/ 1013 hPa, Flow Rate > 500 qcm/min, Cross sensitivity gases are not target gases. Relation can change with aging.

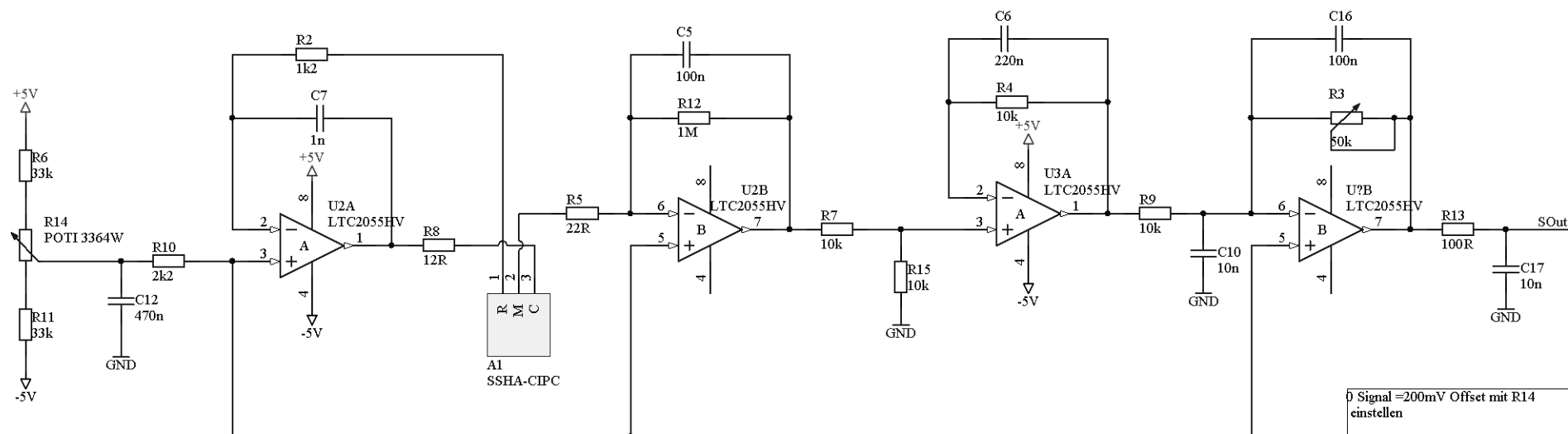
Solidsense GmbH believes the data contained herein are factual, and the opinions expressed are of qualified experts regarding the results of tests conducted, the data are not to be taken as warranty or representation which Solidsense assumes legal responsibility. The data are offered solely for consideration, investigation, and verification. Any use of these data and information must be determined by the user to be in accordance with federal, state, and local laws and regulations. Specifications are subject to change without notice.

Rev. 2011-09-01

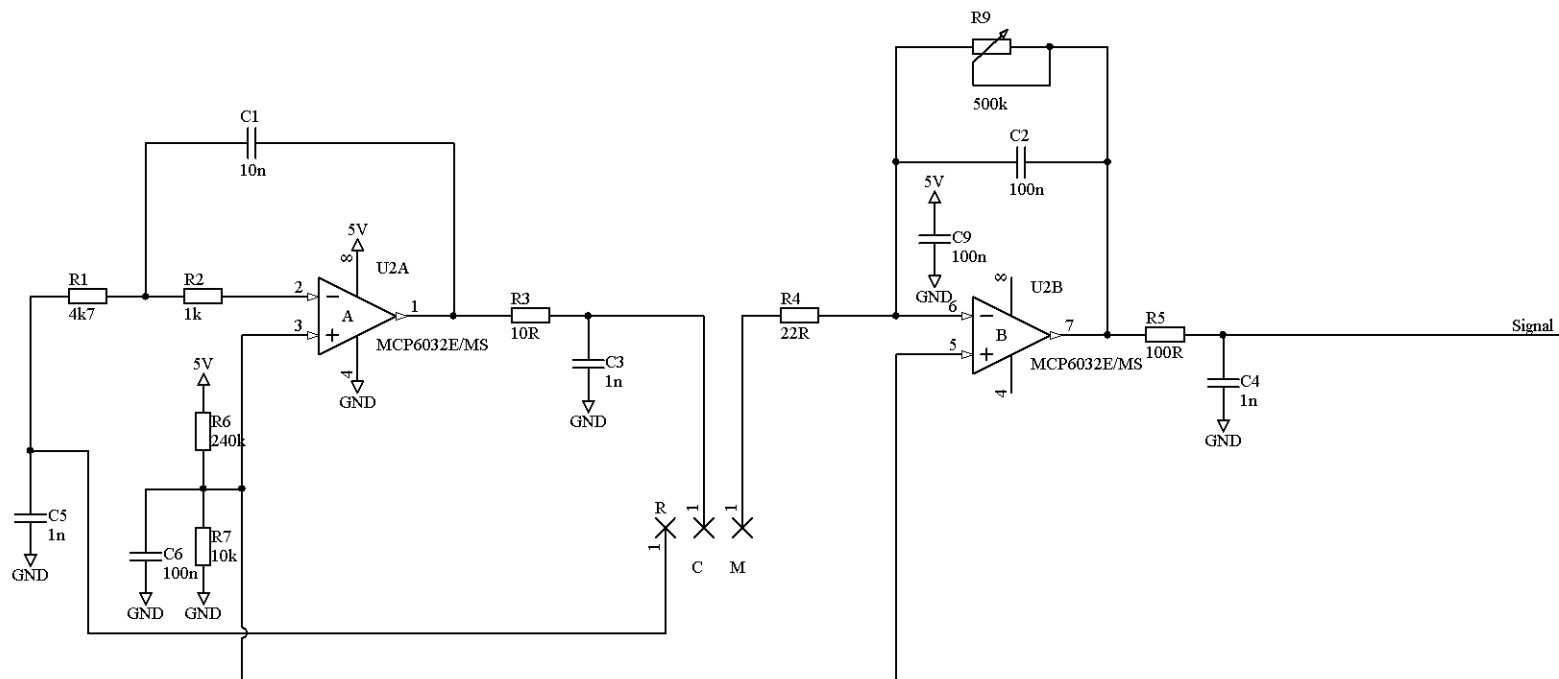
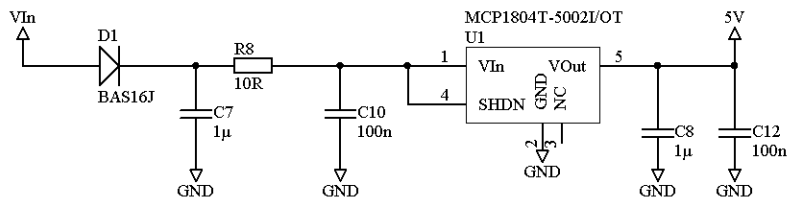
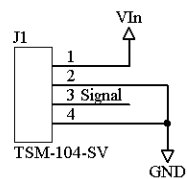
Solidsense GmbH - Felix-Wankel-Str. 5 - 82152 Krailling, Germany
Tel: +49 89 893 255 21 – Fax: +49 89 850 9374 – info@solidsense.de – www.solidsense.de



Title <i>RGO2</i>			* <i>Felix-Wankel-Str.5</i> 82152 Krailling * <i>Bayern</i>
Size: A4	Number: *	Revision: *	
Date: 31.08.2011	Time: 15:04:44	Sheet1 of 1	
File: C:\Geräte und Anlagen\Gasmeßtechnik\RGO2\Platinen\RGO2.SCHDOC			



Title <i>RGNO2</i>			Hatel GmbH Felix-Wankel-Str.5 82152 Krailling * Bayern
Size: A4	Number: *	Revision: *	
Date: 15.12.2011	Time: 16:23:18	Sheet 1 of 1	
File: C:\Geräte und Anlagen\Gasmeßtechnik\RGNO2\Platinen\RGNO2b.SCHDOC			



Title H2 Signalreiber 5V VIn für H2S,CO,H2			Hatel GmbH Felix-Wankel-Str.5 82152 Krailling Bayern
Size: A4	Number:	Revision: 7	
Date: 31.08.2011	Time: 14:35:52	Sheet1 of 1	
File: C:\Geräte und Anlagen\Gasmeßtechnik\H2 Signalreiber\Platine\H2 Signalreiber 5V.SCHDOC			

USB Gas Inspector

Description:

The USB Gas Inspector is a very quick and comfortable solution for the detection of gas leaks. Likewise it makes initial testing of our sensors as simple as possible. We have adapted our sensors to an USB which can be directly connected to a PC. The USB is always delivered with software that allows online concentration view, trend graph and data filing.

Framework requirements

Administrator rights to run the software

Laptop, PC with free USB port

Operation system Microsoft Windows 2000 or Windows XP, Microsoft Vista 07

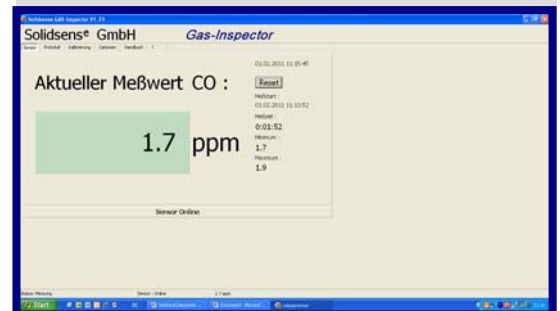
Microsoft Excel has to be installed

Option:

USB gas stick extension cable, length up to 2 m, helpful for typical customer application

FEATURES

- Online concentration view
- Trend graph and data filing in excel
- Simply and quick installation in 4 steps only

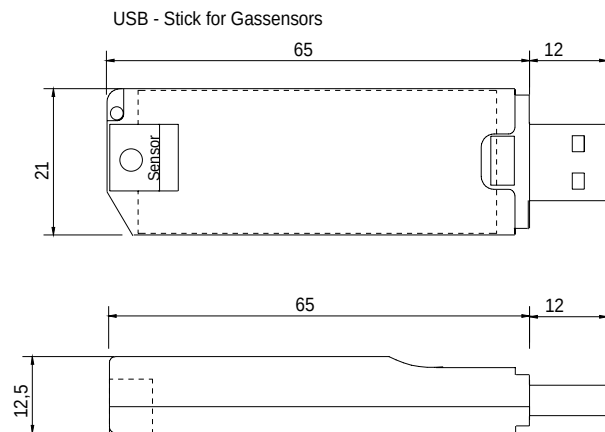


www.solidsense.de

USB Gas Sensor Stick with integrated sensor SECS:

Description:	Part-Number:
USB Gas Sensor Stick CO	01-05-40-01
USB Gas Sensor Stick H2	01-05-10-01
USB Gas Sensor Stick H2S	01-05-20-01
USB Gas Sensor Stick NO2	01-05-50-01
USB Gas Sensor Stick O2	01-05-30-01

Dimensions:



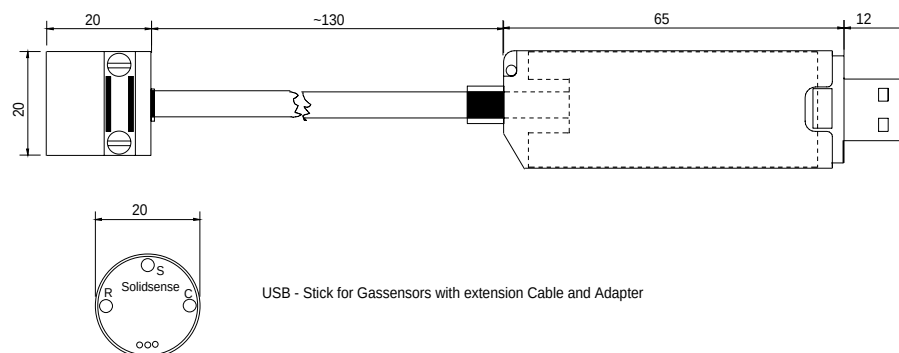
USB Gas Sensor Stick with adapter cable for use with sensor 4S housing version:

Description:	Part-Number:
USB Gas Sensor Stick	01-05-00-01

Please order sensor separately:

CO Sensor 4 S	01-04-40-02
H2 Sensor 4S	01-04-10-02
H2S Sensor 4S high speed	01-04-20-03
NO2 Sensor 4S	01-04-50-02
O2 Sensor 4S	01-04-30-02

Dimensions:



For further detailed information please visit www.solidsense.de

Solidsense GmbH • Felix-Wankel-Str. 5 • 82152 Krailling • Germany

Phone +49 89 893 255 21 • Fax +49 89 850 9374

info@solidsense.de • www.solidsense.de