a DwyerOmega brand

O2 Measurement / Amperometric ZrO_2

Selection guide for calibrated systems

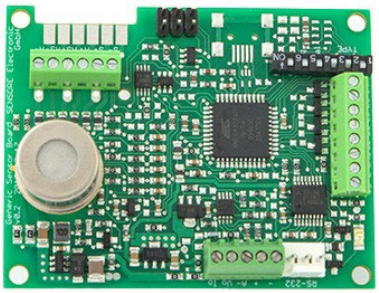
Key Features

- Ready to operate system, consisting of an oxygen sensor and an electronic board
- Factory O_2 calibration of the system is stored in the electronic board
- Analog signal output: 4-20mA or 0-5Vdc, linearized signal from 0% O_2 up to full scale O_2 (see Table 2)
- Recommended power supply 12Vdc/500mA

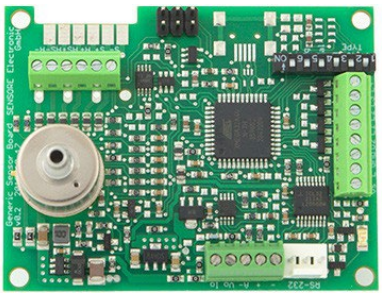
See also datasheets of O2-sensor and GSB electronic for more detailed information

Overview / Mechanical configurations

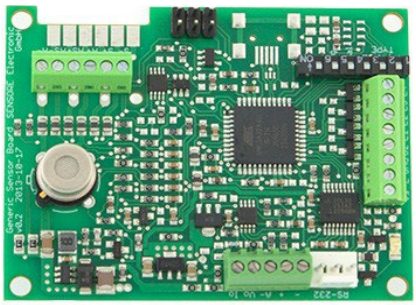
TO8 soldered on PCB / ambient gas diffusion



TO8 soldered on PCB / hose connector to apply



TO39 in PCB socket / ambient gas diffusion



“D1” M10 thread + 300cm cable / mount from inside the chamber

“D0” M16 thread + 300cm / mount from the outside of a chamber

“D2” Aluminum M16 thread +300cm cable / mount from the outside

Configuration options:

- **Mechanical (see pictures in Table 1)**
  - Compact system with sensor soldered or plugged directly onto the PCB
  - Sensor with 300cm cable connected to the PCB
- **Gas interface (see pictures in Table 1)**
  - Gas diffusion from ambient, via mesh on sensor cab
  - Hose connection, recommended gas flow, see Table 3
  - M16 thread sensor, for mount in the wall of a process chamber
  - M10 thread sensor, to mount int the wall of a process chamber from the inside
- **O_2 range (see Table 2)**
  - Fix range define by selected configuration and cannot be modified afterwards.
  - The min / max rating of the O_2 range should not be violated. Operation outside of the specified range will not lead to an immediate failure, but it causes a faster deterioration over time.
- **Available configurations are summarized in Table 3**

O2 ranges and typical accuracy:

O2 range (min / max)	GSB preset	DIP switch bit			GSB full scale (output)	O2-calibration concentration	Typical Accuracy	Sensor Voltage
		1	2	3				
10-1000ppm	1	OFF	ON	ON	1000 vol.-ppm	1000 vol.-ppm	+/- 20ppm	0.70 Vdc
0.01-1vol.%	2	ON	OFF	ON	1 vol.-%	1 vol.%	+/- 0.01vol.%	0.75 Vdc
0.01-2vol.%	3	OFF	OFF	ON	2 vol.-%	2 vol.%	+/- 0.2vol.%	0.75 Vdc
0.05-5vol.%	4	ON	ON	OFF	5 vol.-%	5 vol.%	+/- 0.5vol.%	0.80 Vdc
0.1-25vol.%	5	OFF	ON	OFF	25 vol.-%	20.9 vol.%	+/- 0.5vol.%	0.85 Vdc
50-96vol.%	6	ON	OFF	OFF	100 vol.-%	20.9 vol.%	+/- 1vol.%	1.60 Vdc
1-96vol.%	7	OFF	OFF	OFF	100 vol.-%	20.9 vol.%	+/- 1vol.%	1.00 Vdc

Table 2 O2-range specification

O2 ranges and typical accuracy:

Mouser Part No.	Part No. on product label	O_2 range	Mechanical Config.	Sensor gas interface
231-GA0202STDSOB0001	EGa0202std-B0001	10-1000ppm	TO8 soldered on PCB	Ambient gas diffusion
231-GA0202STDSOB0010	EGa0202std-B0010	0.01-1%	TO8 soldered on PCB	Ambient gas diffusion
231-GA0202STDSOB0250	EGa0202std-B0250	0.1-25%	TO8 soldered on PCB	Ambient gas diffusion
231-GA0202STDSOB0960	EGa0202std-B0960	1-96%	TO8 soldered on PCB	Ambient gas diffusion
231-GA0202STDSOE3010	EGa0202std-E3010	0.01-1%	TO8 soldered on PCB	Hose, gas flow ~0.5LPM
231-GA0202STDSOE3050	EGa0202std-E3050	0.05-5%	TO8 soldered on PCB	Hose, gas flow 0.2-0.5LPM
231-GA0202STDSOE3250	EGa0202std-E3250	0.1-25%	TO8 soldered on PCB	Hose, gas flow 0.1-0.5LPM
231-GA0202STDSOE3960	EGa0202std-E3960	1-96%	TO8 soldered on PCB	Hose, gas flow 0.1-0.5LPM
231-GA0202STDSOA0010	EGa0202std-A0010	0.01-1%	TO39 in PCB socket	Ambient gas diffusion
231-GA0202STDSOA0250	EGa0202std-A0250	0.1-25%	TO39 in PCB socket	Ambient gas diffusion
231-GA0202STDSOA0960	EGa0202std-A0960	1-96%	TO39 in PCB socket	Ambient gas diffusion
231-2STDSOD0001A300C	EGa0202std-D0001A300	10-1000ppm	300cm, Rast2.5 on GSB	M16 thread in chamber
231-2STDSOD0010A300C	EGa0202std-D0010A300	0.01-1%	300cm, Rast2.5 on GSB	M16 thread in chamber
231-2STDSOD0050A300C	EGa0202std-D0050A300	0.05-5%	300cm, Rast2.5 on GSB	M16 thread in chamber
231-2STDSOD0050A300C	EGa0202std-D0050A300	0.1-25%	300cm, Rast2.5 on GSB	M16 thread in chamber
231-2STDSOD0960A300C	EGa0202std-D0960A300	1-96%	300cm, Rast2.5 on GSB	M16 thread in chamber
231-2STDSOD1001A300C	EGa0202std-D1001A300	10-1000ppm	300cm, Rast2.5 on GSB	M10 thread in chamber
231-2STDSOD1010A300C	EGa0202std-D1010A300	0.01-1%	300cm, Rast2.5 on GSB	M10 thread in chamber
231-2STDSOD1050A300C	EGa0202std-D1050A300	0.05-5%	300cm, Rast2.5 on GSB	M10 thread in chamber
231-2STDSOD1050A300C	EGa0202std-D1050A300	0.1-25%	300cm, Rast2.5 on GSB	M10 thread in chamber
231-2STDSOD1960A300C	EGa0202std-D1960A300	1-96%	300cm, Rast2.5 on GSB	M10 thread in chamber
231-2STDSOD2001A300C	EGa0202std-D2001A300	10-1000ppm	300cm, Rast2.5 on GSB	Al, M16 thread in chamber
231-2STDSOD2010A300C	EGa0202std-D2010A300	0.01-1%	300cm, Rast2.5 on GSB	Al, M16 thread in chamber
231-2STDSOD2050A300C	EGa0202std-D2050A300	0.05-5%	300cm, Rast2.5 on GSB	Al, M16 thread in chamber
231-2STDSOD2050A300C	EGa0202std-D2050A300	0.1-25%	300cm, Rast2.5 on GSB	Al, M16 thread in chamber
231-2STDSOD2960A300C	EGa0202std-D2960A300	1-96%	300cm, Rast2.5 on GSB	Al, M16 thread in chamber

Table 3 available configurations