

HIGH QUALITY SURFACE ELECTROCHEMICAL SENSOR

Type: AC1P.W*.R*

Description

The sensor is formed on a corundum ceramic base. On to this surface the working, the reference and the auxiliary electrodes are applied. Working electrode has homogenous surface with roughness less than 1 μm . The working and the auxiliary electrodes are made of variety of materials. At the end of the sensor there is a contacting field which is connected with the active part by the silver conducting paths which are covered by a dielectric protection layer. A bio-chemically active substance can be immobilised on the working electrode of the sensor to create a biosensor.

Physical parameters

Dimensions:

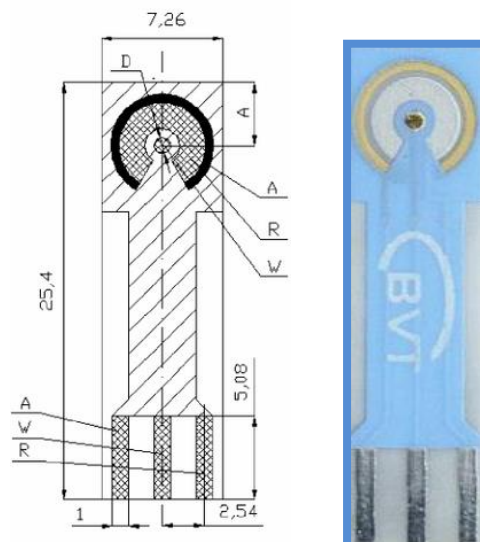
Weight: 0.4 gms
Length: 25.40 mm
Width: 7.26 mm
Thickness: 0.63 mm

A = 4.00 mm

D_w = 1.00 or 2.00 mm

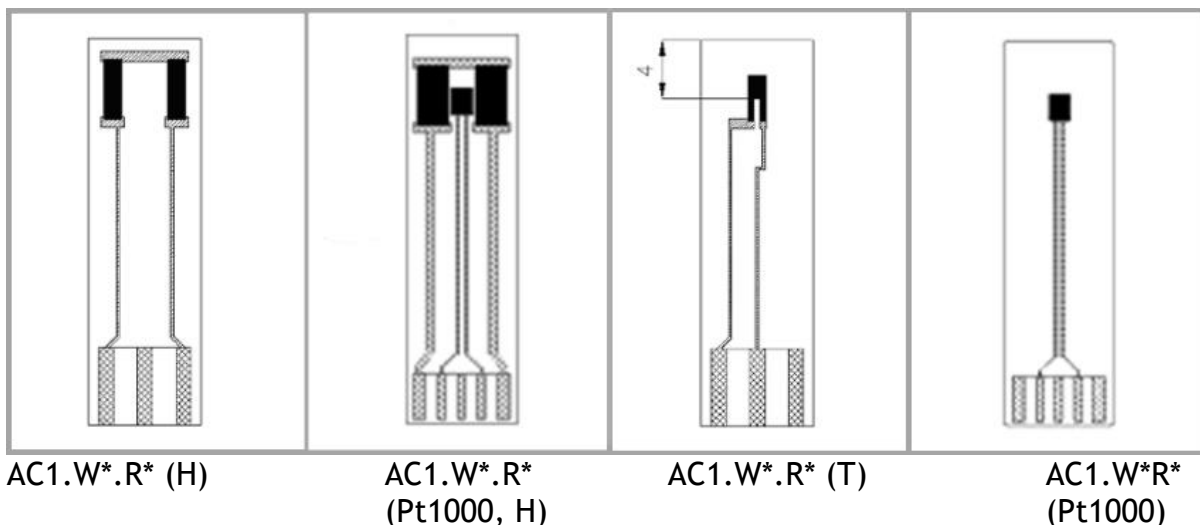
Electrode Materials are defined by:

AC1P.W*.R*



The asterisk is replaced by the appropriate number or letter.

AC - Amperometric sensor or electrode on corundum ceramic base	
AC1 - Sensor group reference number	
P - Polished working electrode	
W - Working electrode material	R - Reference electrode material
1 - Pure Gold	S - Silver
	2 - Silver covered by AgCl



Heating parameters:

Maximum voltage is 35 V and temperature approximately 500°C, resistance: 80 Ohm.

Thermistor:

- 1) Resistance paste -resistance 160 Ohm, coefficient K= 6100 ppm/K
- 2) Pt1000

Connector types for AC1P sensors range

	KA1	KA1.S	KA1.C	KA4
AC1P.W*.R*	✓	✓	✓	✓
AC1P.W*.R*(H)				✓
AC1P.W*.R* (T)				✓

Recommended Accessories

- FC2, FC4, TC4, TC5, TC6, MT

Sensor Usage

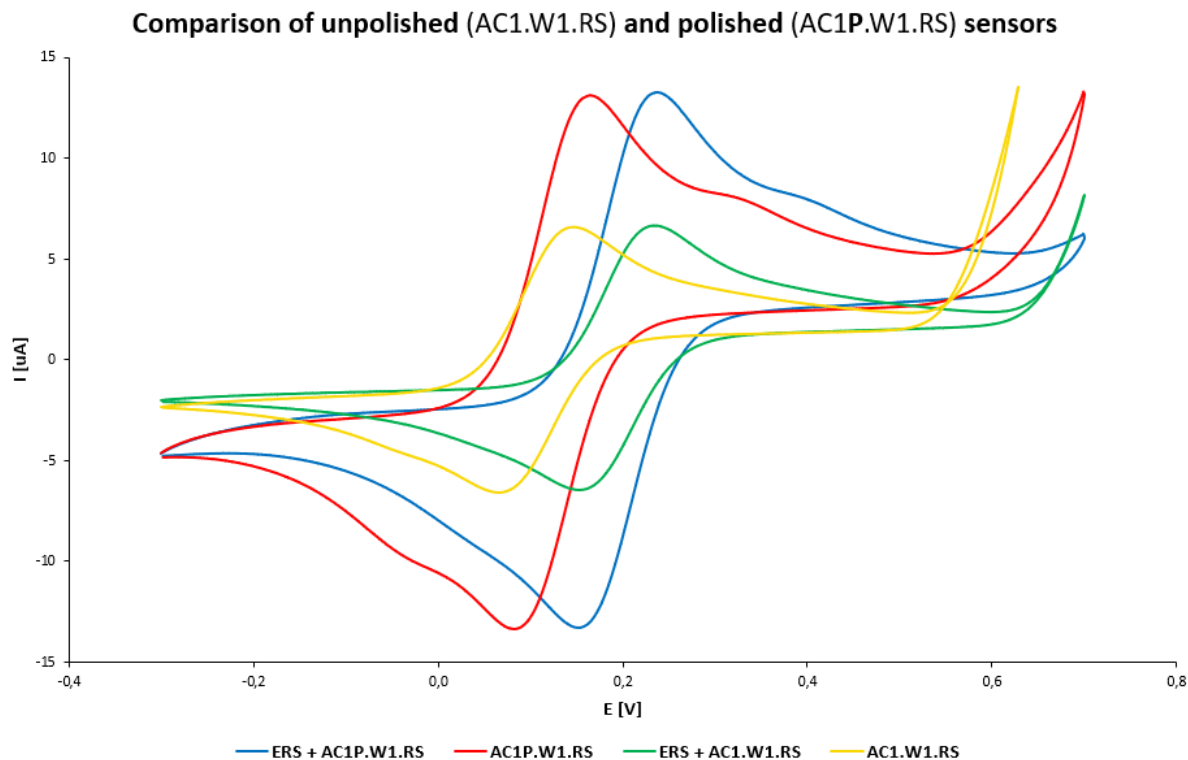
This specific range of AC1P sensors enable the measurement of:

- Basic electrochemical and bio-electrochemical techniques
- H₂O₂ concentration, Glucose, Ferricyanide
- Trace analysis (e.g. stripping voltammetry)
- Toxicity caused by pesticides
- Enzyme activity
- Enzyme activity and Michaelis Menten constant
- Immobilization of antibodies
- Preparation of nanostructures

Related patents

- PV 1994-864 (13.04.1994) utility design no. 6113/94

Typical Sensor Response



Measurement specification:

- Cyclic voltammetry, scan rate: 50 mV/s, potential range: -0,3 to +0,7V
 - Temperature: 20 °C
 - Working electrode: sensor AC*.W1.R*
1. Measurement with ERS (external reference system)
 - Reference electrode: RCEc.RS.R5 (external Ag/AgCl electrode (filled with 1M KCl))
 - Auxiliary electrode: sensor AC4.W1
 2. Measurement with sensor
 - The sensor's internal auxiliary and reference electrodes were used

Chemicals:

- FeFe: 0.005M $K_3[Fe(CN)_6]$ + 0.005M $K_4[Fe(CN)_6]$ in 0.2M KOH

Ordering information

- The order is specified by whole sensor description formula
- Minimum order quantity - 5 sensors
- All order quantities are to be in multiples of 5 e.g. 5, 10, 15, etc.
- Delivery time for standard AC1P sensors is 4 weeks from receipt of order
- Delivery time for non-standard AC1P sensors depends on final technical specification of order

Examples of Order

- 100 pieces - AC1P.W1.RS
- 250 pieces - AC1P.W1.RS