bvt.cz
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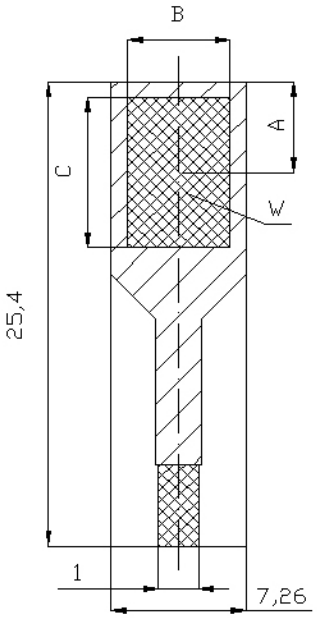
ELECTROCHEMICAL SENSOR

Type: AC4.W* (*)

DESCRIPTION

Substrate material	corundum ceramic
WE material	Au + Pt alloy, Au, Pt, Ag, carbon* (graphite)
Amounts of WEs	1
Final dielectric protection layer	ceramic, polymeric
Electrode system	1 WE
WE geometric area	**A** = 5.20 ± 0.05 mm **B** = 4.60 ± 0.05 mm **C** = 7.30 ± 0.05 mm
Surface modification	blank, (*sensors with carbon WE can be activated on customer request)
Possible applications	Detection of redox active species, electrolysis, modification with biomolecules



PHYSICAL PARAMETERS

Weight:	0.60	g	**Width:**	7.26	mm
Length:	25.40	mm	**Thickness:**	0.63	mm

TOPOLOGY

Electrode materials are defined by: **AC4.W***
The aterisk is replaced by appropriate number or letter.

AC4 – sensor group reference number

W – working electrode material	**(*) – additional technical specification**
S - alloy of gold and platinum	H, Pt1000, T – sensor sensing elements
1 – pure gold	
2 – pure platinum	
3 – pure silver	
4 – carbon (graphite)	

RECCOMENDED ACCESORIES

Connector for electrochemical sensor

Connector KA4.C.*	https://bvt.cz/produkt/ka4/
Reference electrode RCEc.R*	https://bvt.cz/produkt/rcec/
Auxiliary electrode ACEc.Pt plate	https://bvt.cz/produkt/acec-pt-plate-auxiliary-classic-electrode-conic-with-platinum-plate/

EVALUATION UNITS

Recommended potentiostats

PalmSens	https://bvt.cz/kategorie-produktu/potentiostats/palmsens-potentiostats/
BVT	https://bvt.cz/produkt/gx102-potentiostat/
eDAQ	https://bvt.cz/kategorie-produktu/potentiostats/edaq-potentiostats/

MATERIAL RESISTANCE

Sensor is (in final step of production) covered by a polymeric or ceramic dielectric protection layer.
Please note, polymeric dielectric protection layer (and also polymeric binder in graphite paste) has limited resistance to organic solvents.
Ceramic protection layer has limited resistance to strong acids.

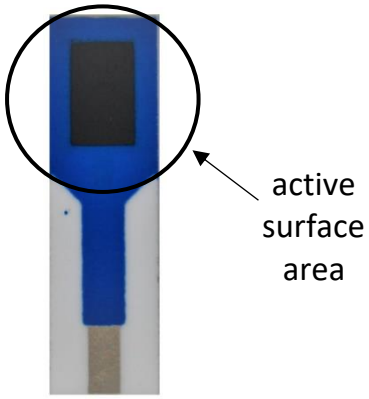
Sensors can be dried in an oven up to 150 °C (max. 2 hours) or left to dry freely.

For detailed information see: https://bvt.cz/wp-content/uploads/2024/01/AC1.-senzory-materials-handling-letak-V.6-aktualizace-2023.pdf

HANDLING

The active surface of the sensor should not be wiped mechanically or with a cloth with an organic solvent.
The active surfaces of the sensor should not be touched by fingers during handling.

After connecting the AC4 sensor to the KA4.C.* connector, use only the red marked wire/banana that corresponds to the middle pin on the sensor to connect to the potentiostat.

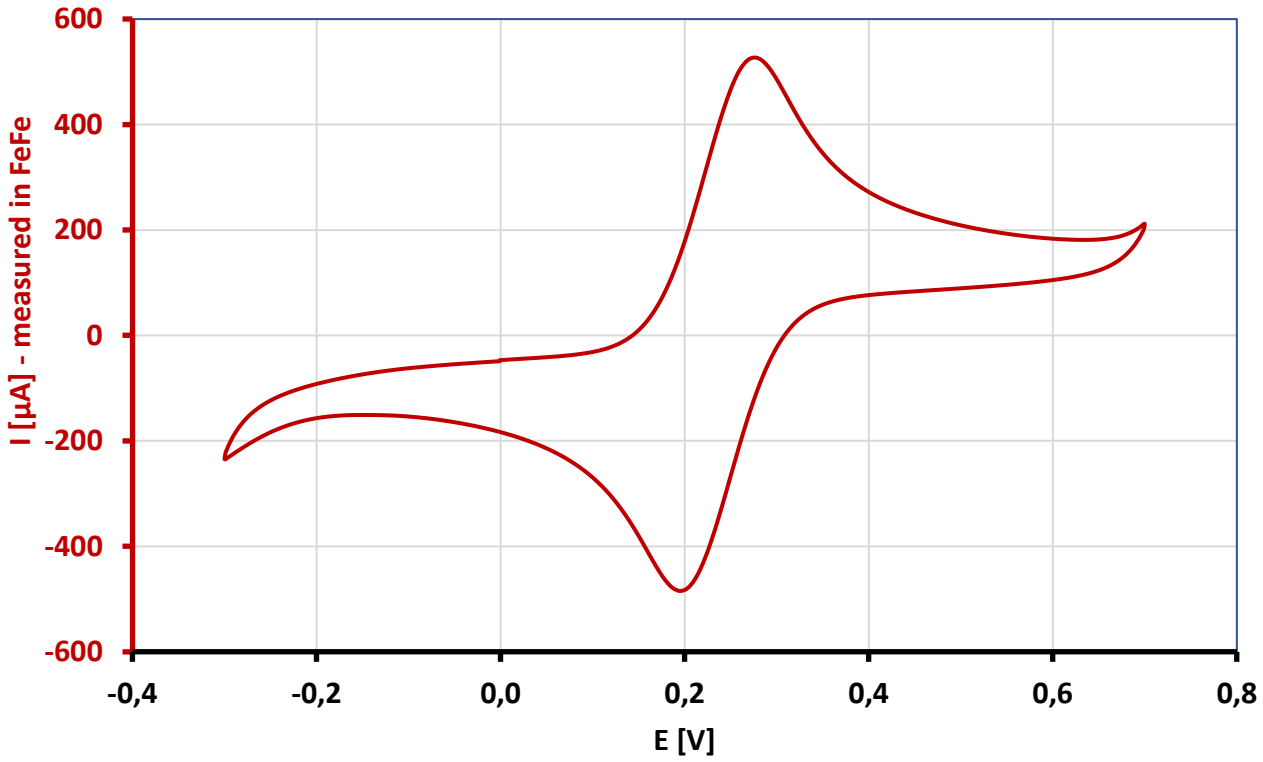


STORAGE

Sensors should be stored in a closed box with silica gel away from light.

EXAMPLE OF MEASUREMENT

Example of sensor response AC4.W2



Measurement specification

Cyclic voltammetry (3 scanns – 3rd scans are used for graph), scan rate: 50 mV/s, potential range: -0,3 to +0,7 V
Temperature: 20 °C

Used equipment

Potentiostat eDAQ, electrochemical glass cell TC6, stand for TC*, connector KA4.S

Sensor AC4.W2

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. 10, 15, 20, etc.

Example of order

20 pcs – AC4.W1

DELIVERY TIME

Delivery time for standard AC4 sensors is a maximum 4 weeks from receipt of order.
Delivery time for non-standard AC4 sensors depends on final technical specification of order.