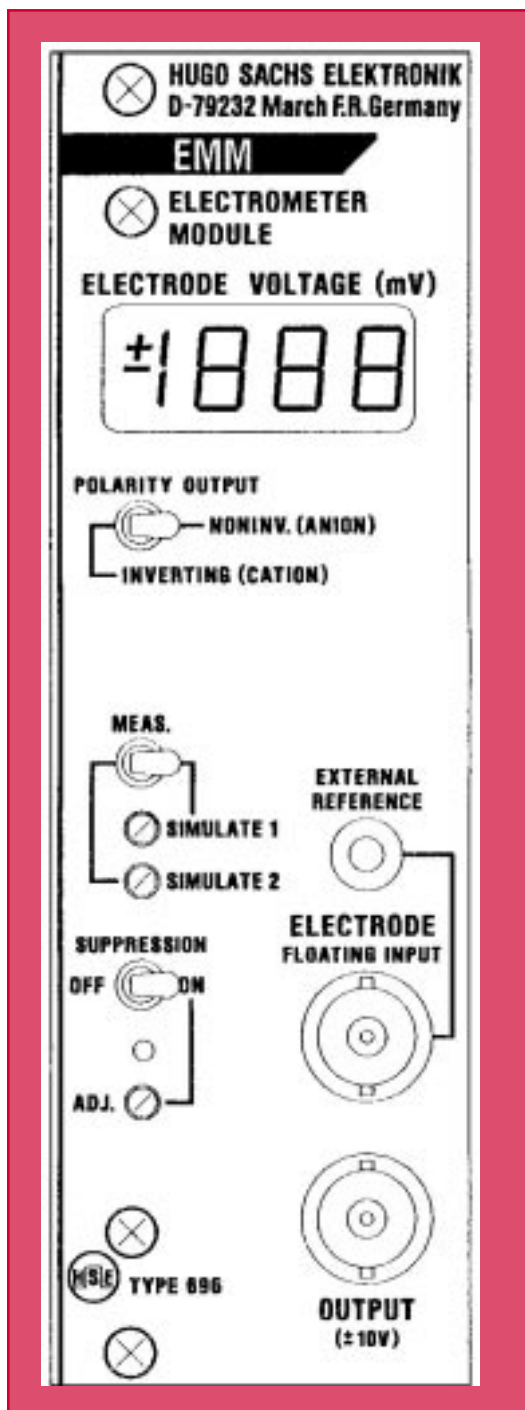


## HSE-Harvard Electrometer Module (EMM)

- Floating input to avoid leakage currents
- High input impedance  $10^{15} \Omega$
- Digital display for mV reading
- Specially designed for continuous  $pCO_2$ , or ion concentrations ( $K^+$ ,  $Ca^{++}$ ,  $Na^+$ , etc.) measurement in in-vitro perfused organs experiments

The HSE-Harvard\* Electrometer module is a high-impedance electrometer plug-in amplifier for the PLUGSYS measuring system. It is used to measure continuously concentrations with potentiometric electrochemical sensing electrodes. The main application is recording of  $pCO_2$  or  $Na^+$ ,  $K^+$  and  $Ca^{++}$  concentrations in biological fluids such as perfusate for isolated perfused organs, using the corresponding electrodes. The input circuit of the module includes an isolation amplifier (potential separation between sensing electrode and circuit ground of the PLUGSYS measuring system) to avoid measurement errors due to ground loops and leakage currents.



### Specifications

Input	Floating single-ended input, isolated barrier internally clamped to 300 V
Input Connector	Isolated BNC connector
Input Impedance	$10^{15} \Omega$
Input Bias Current	$\pm 300 \text{ fA}$
Resolution	$\pm$ one least significant digit
Display	3 1/2 -digit LED display
Millivolt Range	$\pm 1200 \text{ mV}$
Gain	x10, x20, x50, x100 set internally using jumper
Output	On BNC connector on front panel ( $\pm 10 \text{ V}$ , output impedance 100 Ohm); output voltage also available on PLUGSYS bus; signal output is assigned to connecting lines AV-1 to AV-16 through jumper
Suppression	Only active on output, adjustable with 10 turn trimmer (max. $\pm 10 \text{ V}$ ); suppression can be switched on and off
Simulation	Physiological measuring range for calibrating recording output can be simulated using 2 corresponding push buttons; for each simulated value can be adjusted in range of $\pm 150 \text{ mV}$
Power Supply	+5 V/450 mA
Dimensions, H x W x D	128.7 x 40.5 x 220 mm (5.1 x 1.6 x 8.7 in)
PLUGSYS Width	2 slot units
Connector	DIN 41612, 96-pin VG
Weight	0.4 kg (0.9 lbs)

Catalog No.	Product
CGS 8425.71	EMM Electrometer Module