

# pocketSTAT2.LC

## With low current interface



Unsurpassed performance  
at low currents  
and high impedances

### Applications:

- Corrosion and coating characterization
- Sensors
- Dielectrics
- Electrochemical Noise
- Mobile applications

### Measure extremely low currents, at high speed:

- Measurement resolution down to 0.3fA (3E-16A)
- Current bias: <20fA
- Measurement accuracy: 0.2% of range, down to 100fA
- Low noise: 24fA standard deviation at 10 points/s
- Settling time at current ranges: (to 90% of end value)
  - 1nA : 0.3ms
  - 100pA : 3ms
  - 10pA : 30ms
- Real current ranges (not post gained), all ranges also applicable galvanostatically

### EIS at extreme high impedances

- Impedances up to 1E15Ohm and down to 0.2pF
- High Bandwidth, -3dB at current ranges:
  - 1nA: 700Hz
  - 100pA: 70Hz
  - 10pA: 7Hz

### Key specifications:

- 10 current ranges: 10pA - 10mA (30mA max.)
- 9 voltage ranges: 1mV - 10V
- Voltage range:  $\pm 10V$
- 18 bits applied and measured
- 3 electrodes: CE/RE/WE and GND (15cm low current cell cable)
- USB powered
- Dimensions 22.3 x 6.7 x 1.9cm, 350g



## Technical specifications

### System performance

Current compliance	±30mA
Maximum output voltage	±10V
Electrode connections	3; WE, CE, RE (and GND)
Potentiostat bandwidth	>500kHz
Stability settings	High Speed, Standard and High Stability
Programmable response filter	1MHz, 100kHz, 10kHz, 1kHz, 10Hz
Signal acquisition	Dual channel 18bit ADC, 300,000 samples/s

### Potentiostat

Applied potential range	±10V, 0.08mV res.
Applied potential accuracy	0.2%, or 2mV
Applied potential accuracy	±10pA to ±10mA in 10 decades
Current ranges	0.003% of current range, minimum 0.3fA
Measured current resolution	0.2%
Measured current accuracy	20fA
WE bias current	

### Galvanostat

Applied current resolution	0.008% of applied current range
Applied current accuracy	0.2%
Potential ranges	±1mV, ±4mV, ±10mV, ±40mV, ±100mV, ±400mV, ±1V, ±4V, ±10V
Measured potential resolution	0.0008% of potential range, minimum 7nV
Measured potential accuracy	0.2% or 2mV

### Impedance analyser

Frequency range	10µHz to 1MHz
Amplitude	0.15mV to 2.0V, or 0.03% to 100% of current range
DC offset	16bit DC offset subtraction and 2 DC-decoupling filters

### Electrometer

Input impedance	>1000Gohm // <10pF
Input bias current	<20pA
Bandwidth	>5MHz

### Environment

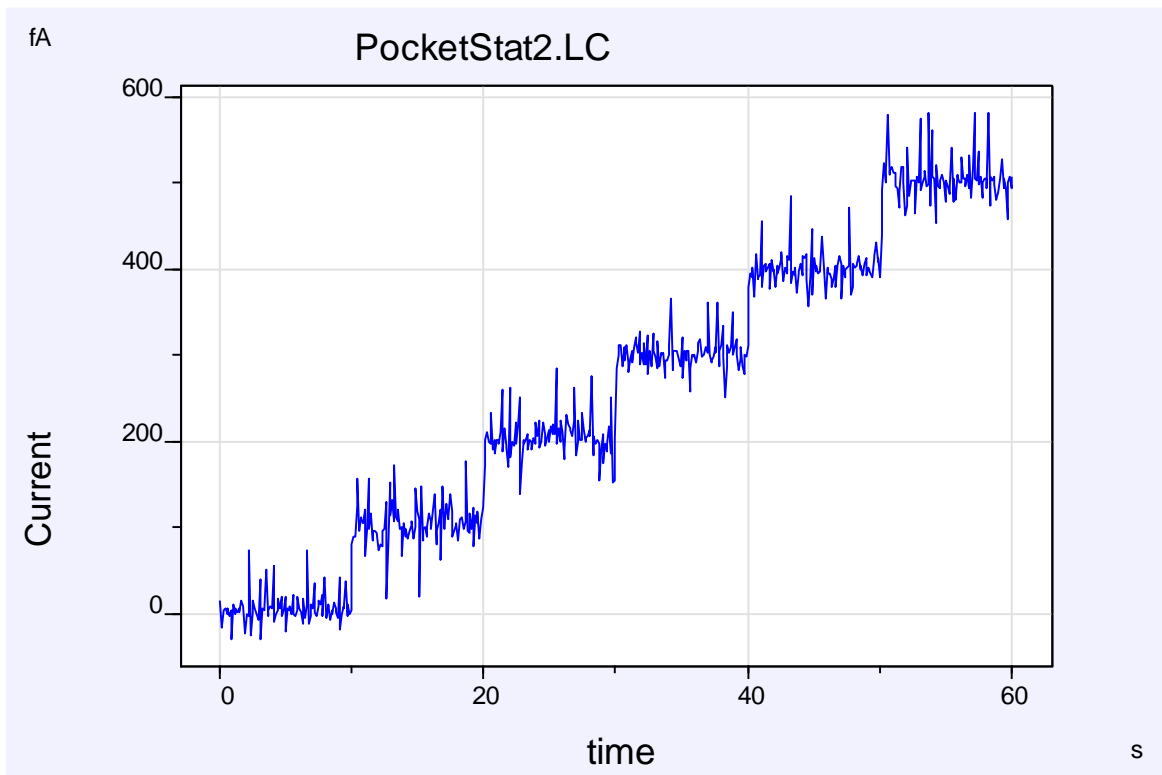
Power requirements	Via USB
Interfacing	USB
Size (w x d x h)	22.3 x 6.7 x 1.9cm
Weight	350g
PC requirements	Windows 8/10, with free USB port



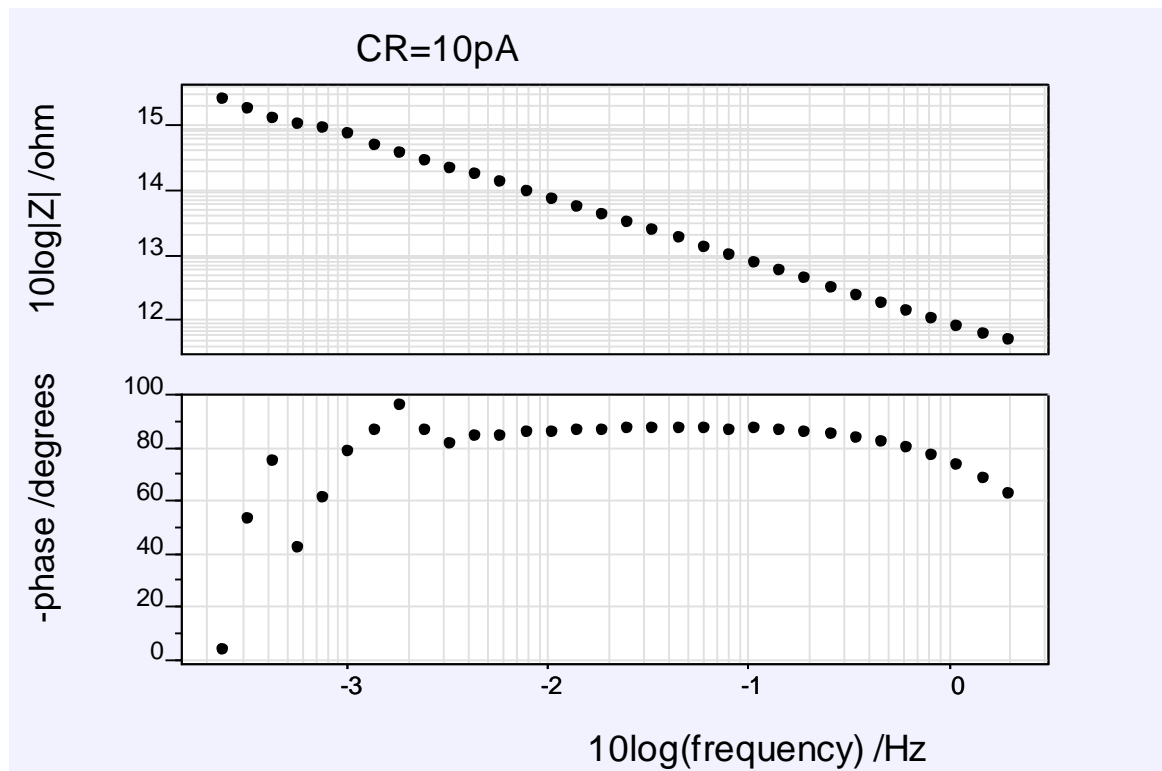
### Also available: Bluetooth Connection & Battery Module

The iBlue is a simple plug&play module that contains a battery pack for powering the pocketSTAT2 and at the same time provides a Bluetooth connection between the instrument and your computer. This is ideal for awkward and difficult to reach places. The battery pack operates the PocketSTAT2 for > 5 hours.

## Reference measurements



Discerning 100fA currents: 1mV steps on a 10Gohm resistor, 10 points/s



EIS at open leads: 0.18pF // >2pΩ (2E15Ω), 1V amplitude