

ECWS

Compact Electrochemical Workstations



EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

▶▶ Electrochemical workstation

EIS Frequency Range 10 μ Hz - 2 MHz

Controlled Current ± 2.0 A

Controlled Current ± 2.0 A

Compliance Voltage ± 14 V

Floating / Grounded Switchable

Operating Modes POT/GAL/OC/ZRA/FRA

▶▶ General

Overall Bandwidth	DC - 2.5 MHz
ADC Resolution	3 ADCs @ 18 bit
Harmonic Reject	> 60 dB @ $\frac{1}{2}$ full scale
Potentiostat Modes	Potentiostatic, galvanostatic, pseudo-galvanostatic, rest potential, off, ZRA, FRA
Cell Connection	Switchable
Floating / Grounded	Ground
PC interface	USB
Dimensions / Weight	255 x 160 x 385 mm / 8 kg
Accessories	cell cable set, USB-cable, power cord, manual
Power supply	230/115/100 V, 50/60 HzT
Ambient temperature, humidity	+15° C to +35° C, < 50 % without derating

▶▶ Frequency Generator & Analyzer

Frequency Range	10 μ Hz to 2 MHz
Accuracy	< 0.0025%
Resolution	0.0025%, 10.000 steps/decade

►► Output Potentiostatic

Full Scale Voltage	± 4 V, ± 12 V
Resolution	125 μ V, 375 μ V
Accuracy	± 500 μ V ± 0.025 % of set value, ± 2 mV ± 0.025 % of set value
Temperature Stability	better 20 μ V/ $^{\circ}$ C
Compliance Voltage	± 14 V (Main) / ± 120 V (with CVB120)
AC-Amplitude	1 mV to 1 V (Main) / 1 mV to 25 V (with CVB120)
Bandwidth	2 MHz @ 33 Ω load
IR Compensation	Method Auto AC Impedance Technique Range 0 to 10 M Ω Resolution 0.012%
Small Signal Rise Time	250 ns to 200 μ s in 5 steps, automatic selection by automatic stability control
Slew Rate	15 MV/s
Phase Shift	10 $^{\circ}$ @ 250 kHz

►► Output Galvanostatic

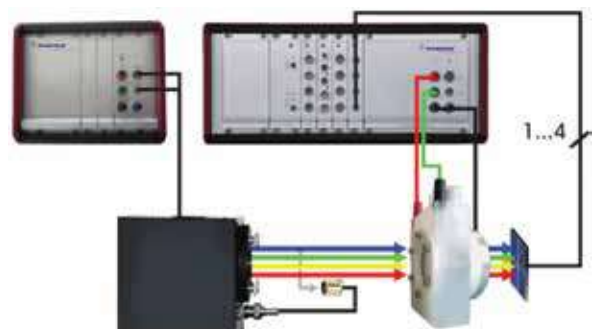
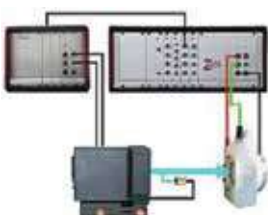
Full Scale Current Ranges	Main	± 100 nA to ± 2.0 A in 10 Steps, resolution 0.0031 % (16 Bit) of range, lowest full scale range ± 100 nA, resolution 12.5 pA
	HiZ	± 1 nA to ± 0.5 A in 12 steps, resolution 0.0031% (16 Bit) of range, lowest full scale range ± 1 nA, resolution 125 fA
Accuracy **	Main	± 0.1 % of set value @ $> 2 \mu\text{A} $ to $ $ 100 mA $ $
		± 1 % of set value @ $ 1 \text{ nA} $ to $ \text{A} $ or $> $ 100 mA $ $
		± 1 % of set value, ± 20 pA @ $< 1 \text{ nA} $
	HiZ	± 1 % of set value, ± 250 fA @ $< 1 \text{ nA} $

►► Input

Full Scale Potential Ranges		±1, ±2, ±4, ±12 V
Potential Resolution DC *		0.0008 % / 32 µV (4 V range) 0.0008 % / 100 µV (12 V range)
Potential Resolution AC *		16 nV
Potential Accuracy DC **		±0.025 % of reading ±0.25 mV (4 V range) ±0.025 % of reading ±1 mV (12 V range)
Offset Temperature Stability		< 10 µV/°C
Full Scale Current Ranges *	Main	±100 pA to ±2.0 A in 33 ranges, automatic range selection
	HiZ	±1 pA to ±0.5 A in 35 ranges, automatic range selection
Current Accuracy DC **	Main	±0.05 % of reading @ > 2 µA to 100 mA ±0.5 % of reading @ < 2 µA or > 100 mA ±0.5 % of reading, ±10 pA @ < 1 nA
	HiZ	±0.5 % of reading, ±125 fA @ < 1 nA
Input Bias Current **	Main	±1 pA (typ.) / ±5 pA (max.) ±10 fA (typ.) / ±50 fA (max.)
Current Resolution DC *		2.5 pA (Main) / 25 fA (HiZ)
Current Resolution AC *		1.6 fA (Main) / 16 aA (HiZ)
Input Impedance	Main	10 TΩ // ±5 pF (typ.)
	HiZ	1000 TΩ // ±1 pF (typ.)
		100 mΩ to 10 MΩ / ±0.2 %
Impedance Range	Potentiostatic	1 mΩ to 1 GΩ / ±2 %
	Galvanostatic	30 µΩ to 1 GΩ / ±2 %
	HiZ	100 mΩ to 100 GΩ / ±3 %
Common Mode Rejection		> 86 dB @ 10 µHz to 100 kHz > 66 dB @ 100 kHz to 2 MHz
Input Channel Phase-Tracking Accuracy		±0.1° @ 10 µHz to 100 kHz ±0.25° @ 100 kHz to 2 MHz
Equiv. Effective Input Noise	Main	2 µV rms / 200 fA rms @ 1 mHz to 10 Hz
	HiZ	20 µV rms / 30 fA rms @ 1 mHz to 10 Hz

Photo Electrochemical workstation(ECWs) -IMPS , IMVS, CLV , emit , abs, PCS, FIT ,DTR

**Modular electrochemical workstation
including a potentiostat / galvanostat and a
frequency response analyzer (FRA)**



►► Specifications

	ECWs X	ECWs Pro	ECWs Y	ECWs E
Compliance Voltage	±32V	±28V	±14V	±14V
Applied Voltage (dual ranges)	±15V / ±5V	±15V / ±5V	±10V / ±4V	±12V / ±4V
Maximum current	±4A	±3A	±2.5A	±2A
Impedance Frequency Range	10 µHz to 12 MHz	10 µHz to 8MHz	10 µHz to 4 MHz	10 µHz to 2 MHz
ADC Resolution	32 Bit	32 Bit	18 Bit	18 Bit
Current resolution	±5 atto A (10 ⁻¹⁸)	±5 atto A (10 ⁻¹⁸)	±2.5 pico A (10 ⁻¹²)	±2.5 pico A (10 ⁻¹²)

▶▶ **HPLC Servicing, Validation, Trainings and Preventive Maintenance :**

- HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.
- Trainings :We also take up preventive maintenance to reduce downtime of HPLC’s Trainings.
- AMC’s/CMC : We offer user training both in-House and at customer sites on PLC principles, operations, troubleshooting.
- Validations : We have protocols for carrying out periodic Validations as per GLP/ GMP/U SFDA norms.
- Instruments : We offer instruments/Renting Services Modules like pumps, detector etc. on Rent.



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Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the globe. Analytical Technologies Limited is an ISO :9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

▶▶ **Our Products & Technologies**

						
UV/VIS Spectro 2080+ Double Beam	Infra FTIR	Optima Gas Chromatograph 3007	Optima Gas Chromatograph 2979 Plus	Flash Chromatograph	Atomic Absorption Spectrophotometer	Liquid Partical Counter
						
Optical Emission Spectrophotometer	DSC/TGA	Semi Auto Bio Chemistry Analyzer	HEMA 2062 Hematology Analyzer	Micro Plate Reader/Washer	URINOVA 2800 Urine Analyzer	Total Organic Carbon 3800
						
Fully Automated CLIA	NOVA-2100 Chemistry Analyzer	PCR/Gradient PCR/ RTPCR	TOC Analyzer	Laser Particle Size Analyzer	Ion Chromatograph	Water purification system

▶▶ Regulatory compliances



▶▶ Corporate Social Responsibility

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2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.



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