

MEASURING EQUIPMENT

Multifunction instrument MoData 2

Document No.: 11-200-R0

Sheet: 1 of 2

German Cathodic Protection



MoData 2, a computer-aided measuring system, has been developed to integrate the function and capability of several instruments used in the field of cathodic corrosion protection in one instrument only.

MoData 2 combines 4 separate measuring instruments (AC/DC voltage, current, μ -volts, resistance).

With serial interface port for connection and direct data transfer between PC and MoData2.

Provided with bar code input for automatic test point identification on site.



MoData 2, Handheld computer

Technical Data

Type	Itronix fex21
Case	Impact-resistant plastic
Size	190 x 155 x 37 mm (D x W x H)
Weight	0.8 kg
Protection class	IP 65
Screen	6.5", 16 grayscale with backlight 640 x 240 pixel, touch screen
Keyboard, waterproof	Fluorescent membrane keyboard
Operating system	Windows Handheld PC 2000
Processor	Toshiba 129 MHz
Memory	32 MB
ROM	32 MB
Interfaces	2 x 9 pin serial port, infrared interface
Modem	V34 analog (installed)
Power supply	Rechargeable lithium ion battery Lifetime approx. 10 h
Operating temperature	-10 °C to 50 °C
Additional	Compact flash card (CF card) 64 MB installed

Measuring ranges and accuracy

The following tables contain details of the available measuring ranges, resolutions and maximum deviations.

DC voltage measurement (Channels A, B and C)

Input impedance:	> 10 M Ω	
DC voltage attenuation:	16.6 Hz / 60 dB (factor 10 ³) 50.0 Hz / 100 dB (factor 10 ⁵)	
Measuring range	Resolution	Max. deviation
\pm 1 V	0.1 mV	\pm 0.5 % \pm 0.5 mV
\pm 10 V	1.0 mV	\pm 0.5 % \pm 5.0 mV
\pm 100 V	10 mV	\pm 0.5 % \pm 10 mV

Simultaneous measurement of 3 channels, time difference between channels < 5 ms

AC voltage measurement (Channel A)

Input impedance:	> 10 M Ω	
Measuring range	Resolution	Max. deviation
1 V eff.	0.1 mV	\pm 2.0 % \pm 1.0 mV
10 V eff.	1.0 mV	\pm 2.0 % \pm 10 mV
100 V eff.	10 mV	\pm 2.0 % \pm 50 mV

Frequency range 10 Hz to 120 Hz, cut-off frequency 800 Hz (2 dB)

MoData 2, Multi task converter

Technical Data

Case	Impact-resistant plastic
Size	290 x 260 x 70 mm (D x W x H)
Weight	2.25 kg (including MoData computer)
Interfaces	2 x 9 pin serial port 12 V charging socket (with internal isolation) Terminal for synchronization or relay cable
Power supply	Rechargeable lead battery 6 V/1.3 Ah Lifetime approx. 10 h
Equipment	MoData 2 including Itronix fex21 External 230 V battery charger Synchronization cable Transfer cable User manual
Options	System carry case „Sprint“ carrying strap for maintenance „Marathon“ carrying strap for Intensive measurement External 12 V battery charger GPS antenna with integrated receiver



MEASURING EQUIPMENT
Multifunction instrument MoData 2

Document No.: 11-200-R0

Sheet: 2 of 2

German Cathodic Protection



Micro voltage measurement (Channel A)

Input impedance:	> 10 MΩ	
AC voltage attenuation:	16.6 Hz / 60 dB (factor 10 ³) 50.0 Hz / 100 dB (factor 10 ⁵)	
Measuring range	Resolution	Max. deviation
± 80000 μV	1 μV	± 0.2 % ± 5.0 μV

Current measurement (Channel A)

AC voltage attenuation:	16.6 Hz / 60 dB (factor 10 ³) 50.0 Hz / 100 dB (factor 10 ⁵)		
Measuring range	Internal shunt	Resolution	Max. deviation
± 10 mA	10 Ω	1 μA	± 1.0 % ± 5 μA
± 100 mA	3 Ω	10 μA	± 1.0 % ± 20 μA

Current measurement (30 A current input)

AC voltage attenuation:	16.6 Hz / 60 dB (factor 10 ³) 50.0 Hz / 100 dB (factor 10 ⁵)		
Measuring range	Internal shunt	Resolution	Max. deviation
± 30 A	0.01 Ω	1 mA	± 1.0 % ± 3 mA

Resistance measurement

Measuring method:	Wenner; 2-pole or 4-pole		
Measuring frequency:	128 Hz		
Output voltage:	max. 2 V eff. 1 kΩ measuring range max. 10 V eff. 10 kΩ measuring range max. 10 V eff. 800 kΩ measuring range		
Measuring range	Resolution (4-pole)	Max. deviation	
1 kΩ	0.01 Ω	0.0 Ω - 9.9 Ω	± 1.0 % ± 0.05 Ω
	0.1 Ω	10.0 Ω - 199.9 Ω	± 1.0 % ± 0.50 Ω
	1 Ω	200 Ω - 999 Ω	± 1.0 % ± 5 Ω
10 kΩ	10 Ω	0.00 kΩ - 0.99 kΩ	± 1.0 % ± 50 Ω
	100 Ω	1.0 kΩ - 9.9 kΩ	± 1.0 % ± 100 Ω
800 kΩ	10 Ω	0.00 kΩ - 9.99 kΩ	± 1.0 % ± 0.1 kΩ
	100 Ω	10.0 kΩ - 99.9 kΩ	± 1.0 % ± 0.5 kΩ
	100 Ω	100.0 kΩ - 199.9 kΩ	± 1.0 % ± 1 kΩ
	1 kΩ	200.0 kΩ - 799.9 kΩ	± 1.0 % ± 5 kΩ



Back carrying rack „Marathon“

To ensure a problem-free measuring execution on site, the cable drum is equipped with sliding contacts which guaranteed a simple unreeling of measuring cable without any interruption at the measuring points. Standard cable drum with 500 m measuring cable.