# **GROUND RESISTANCE TESTERS** MULTI-FUNCTION

## **MODELS 6422 & 6424**

To keep your installation safe, measure your resistance connection to earth!











### **SPECIFICATIONS**

MODELS   SHECKTICAL	SPECIFICATION	i o							
Voltage         Range         -         0.1-600VAc/oc         -         0.1-600VAc/oc         -         -         0.1V         -         -         0.1V         - <th>MODELS</th> <th></th> <th>6422</th> <th></th> <th colspan="4">6424</th>	MODELS		6422		6424				
Range         -         0.1-600VAc/bc           Resolution         -         0.1V         -           Accuracy         ±(1/RR + 1ct)         -         ±(1/RR + 1ct)         -         -         -         -         ±(1/RR + 1ct)         -         -         -         -         ±(1/RR + 1ct)         -         -         -         ±(1/RR + 1ct)         -	ELECTRICAL								
Resolution Accuracy         -         0.1	Voltage								
Accuracy Current         ±(1%R + 1ct)           Range Resistance (2P Mode)	Range	-			0.1-600Vac/dc				
Current Range         G.5-60.00Ac (requires optional MN72 probe)           Resistance (2P Mode)         Measurement Range         0.05-99.99Ω, 80.0-999.9Ω, 0.800-9.999.ΝΩ, 8.00-50.00κΩ           Resolution         0.01Ω, 0.1Ω, 1Ω, 0.1Ω         Colspan="5">0.01Ω, 0.1Ω, 1Ω, 1Ω         0.800-9.999.ΝΩ, 8.00-50.00κΩ           Intrinsic Uncertainty         ± (2%R + 10 ct), ± (2%R + 2 ct), ± (2%R + 1 ct), ± (2%R + 1 ct)         ± (2%R + 10 ct), ± (2%R + 2 ct), ± (2%R + 1 ct), ± (2%R + 1 ct)         ± (2%R + 10 ct), ± (2%R + 1 ct)         ± (2%R + 10 ct), ± (2%R + 1	Resolution		-		0.1V				
Range	Accuracy		-		±(1%R + 1ct)				
Resistance (2P Mode)           Measurement Range         0.05-99.99Ω, 80.0-999.9Ω, 0.800-9.999.Ω, 0.800-50.00kΩ	Current								
Measurement Range         0.05-99.9Ω, 0.00-99.9Ω, 0.800-9.999kΩ, 8.00-50.00kΩ           Resolution         0.01Ω, 0.1Ω, 1Ω, 1Ω           Intrinsic Uncertainty         ± (2%R + 10 ct), ± (2%R + 2 ct), ±(2%R + 1 c	Range	-			0.5-60.00Aac (requires optional MN72 probe)				
Resolution         0.01Ω, 0.1Ω, 1Ω, 1Ω           Intrinsic Uncertainty         ± (2%R + 10 ct), ± (2%R + 2 ct), ± (2%R + 1 ct), ±	Resistance (2P Mode)								
Intrinsic Uncertainty   Second Resistance (3P Mode)   Second Resistance (3P Mode)   Second Resistance (3P Mode)   Second Resolution   Second R	Measurement Range	$0.05\text{-}99.99\Omega,80.0\text{-}999.9\Omega$ , $0.800\text{-}9.999\mathrm{k}\Omega,8.00\text{-}50.00\mathrm{k}\Omega$							
Ground Resistance (3P Mode)           Measurement Range         0.50-99.99Ω         80.0-999.9Ω         0.800-2.000kΩ         0.50-99.99Ω         80.0-99.99Ω         0.800-9.999kΩ         8.00-50.000kΩ           Resolution         0.01Ω         0.1Ω         1Ω         0.01Ω         0.1Ω         1Ω         10Ω           Intrinsic Uncertainty         ± (1%R + 10ct)         ± (1%R + 1ct)         ± (1%R + 10ct)         ± (1%R + 2ct)         ± (1%R + 1ct)         ± (1%R + 2ct)         ± (1%R + 1ct)         ± (1%R + 2ct)         ± (1%R + 2ct)         ± (1%R + 1ct)         ± (1%R + 2ct)         ± (1%R + 2ct)         ± (1%R + 1ct)         ± (1%R + 2ct)         ± (1%R + 2ct) <th>Resolution</th> <th colspan="6"><math>0.01\Omega, 0.1\Omega, 1\Omega, 10\Omega</math></th>	Resolution	$0.01\Omega, 0.1\Omega, 1\Omega, 10\Omega$							
Measurement Range         0.50-99.99Ω         80.0-999.9Ω         0.800-2.000kΩ         0.50-99.99Ω         80.0-999.9Ω         0.800-9.999kΩ         8.00-50.000kΩ           Resolution         0.01Ω         0.1Ω         1Ω         0.01Ω         0.1Ω         1Ω         1ΩΩ           Intrinsic Uncertainty         ± (1%R + 10ct)         ± (1%R + 10ct)         ± (1%R + 2ct)         ± (1%R + 1ct)         ± (1%R + 2ct)         ± (1%R + 1ct)           Measurement Frequency         No-load Voltage         ± 10 V peak           Maximum Test Current         20mA           Measurement Mode         One shot or continuous           Data Storage         -         Stores the 52%, 62% and 72% 3P resistance measurements           Calculation         -         Calculates average and % deviation of the three saved readings           GENERAL         Display         Backlit LCD         V, I, 2P (Ω), 3P (Ω)           Measurement Mode         2P (Ω), 3P (Ω)         V, I, 2P (Ω), 3P (Ω)         V, I, 2P (Ω), 3P (Ω)           Power Supply         (6) NiMH rechargeable batteries, charging time approx. 6 hrs         SA78 x 4.96 x 2.75" (223 x 126 x 70mm)           SAFETY	Intrinsic Uncertainty	$\pm$ (2%R + 10 ct), $\pm$ (2%R + 2 ct), $\pm$ (2%R + 1 ct), $\pm$ (2%R + 1 ct)							
Resolution         0.01Ω         0.1Ω         1Ω         0.01Ω         0.1Ω         1ΩΩ         10Ω           Intrinsic Uncertainty         ± (1%R + 10ct)         ± (1%R + 1ct)         ± (1%R + 1ct)         ± (1%R + 2ct)         ± (1%R + 1ct)         ± (1%R + 2ct)         ± (1%R + 1ct)           Measurement Frequency         128Hz or 256Hz (automatically selected)           No-load Voltage         ± 10 V peak           Maximum Test Current         20mA           Measurement Mode         One shot or continuous           Data Storage         -         Stores the 52%, 62% and 72% 3P resistance measurements           Calculation         -         Calculates average and % deviation of the three saved readings           GENERAL           Display         Backlit LCD           Measurement Mode         2P (Ω), 3P (Ω)         V, 1, 2P (Ω), 3P (Ω)           Power Supply         (6) NiMH rechargeable batteries, charging time approx. 6 hrs         Charging time approx. 6 hrs           Battery Life         > 2,000 x 3P earth measurements at 100 Ω         >1,500 x 3P earth measurements at 100 Ω           Dimensions           SAFETY	Ground Resistance (3P Mode)								
Intrinsic Uncertainty $\pm$ (1%R + 10ct) $\pm$ (1%R + 2ct) $\pm$ (1%R + 1ct) $\pm$ (1%R + 10ct) $\pm$ (1%R + 2ct) $\pm$ (1%R + 1ct)         Measurement Frequency       128Hz or 256Hz (automatically selected)         No-load Voltage $\pm$ 10 V peak         Maximum Test Current       20mA         Measurement Mode       One shot or continuous         Data Storage       -       Stores the 52%, 62% and 72% 3P resistance measurements         Calculation       -       Calculates average and % deviation of the three saved readings         GENERAL         Display       Backlit LCD         Measurement Mode       2P (Ω), 3P (Ω)       V, I, 2P (Ω), 3P (Ω)         Power Supply       (6) NA Alkaline batteries       (6) NiMH rechargeable batteries, charging time approx. 6 hrs         Battery Life       > 2,000 x 3P earth measurements at 100 Ω       > 1,500 x 3P earth measurements at 100 Ω         Dimensions       8.78 x 4.96 x 2.75" (223 x 126 x 70mm)         SAFETY	Measurement Range	0.50-99.99Ω	80.0-999.9Ω	0.800-2.000kΩ	0.50-99.99Ω	80.0-999.9Ω	0.800-9.999kΩ	8.00-50.000kΩ	
Measurement Frequency128Hz or 256Hz (automatically selected)No-load Voltage $\pm 10 \text{ V peak}$ Maximum Test Current $20\text{mA}$ Measurement ModeOne shot or continuousData Storage-Stores the 52%, 62% and 72% 3P resistance measurementsCalculation-Calculates average and % deviation of the three saved readingsGENERALBacklit LCDMeasurement Mode $2P(\Omega)$ , $3P(\Omega)$ V, I, $2P(\Omega)$ , $3P(\Omega)$ Power Supply(6) AA Alkaline batteries(6) NiMH rechargeable batteries, charging time approx. 6 hrsBattery Life> 2,000 x 3P earth measurements at $100 \Omega$ > 1,500 x 3P earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x $126 \times 70\text{mm}$ )SAFETY	11000101011		0.1Ω		0.01Ω	0.1Ω	1Ω	10Ω	
Frequency128Hz of 256Hz (automatically selected)No-load Voltage $\pm 10 \text{ V peak}$ Maximum Test Current $20\text{mA}$ Measurement ModeOne shot or continuousData Storage-Stores the 52%, 62% and 72% 3P resistance measurementsCalculation-Calculates average and % deviation of the three saved readingsGENERALBacklit LCDDisplayBacklit LCDMeasurement Mode $2P(\Omega)$ , $3P(\Omega)$ V, I, $2P(\Omega)$ , $3P(\Omega)$ Power Supply(6) AA Alkaline batteries(6) NiMH rechargeable batteries, charging time approx. 6 hrsBattery Life> 2,000 x 3P earth measurements at $100 \Omega$ > 1,500 x 3P earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x $126 \times 70\text{mm}$ )SAFETY	Intrinsic Uncertainty	± (1%R + 10ct)	$\pm (1\%R + 2ct)$	± (1%R + 1ct)	± (1%R + 10ct)	± (1%R + 2ct)	± (1%F	R + 1ct)	
Maximum Test Current20mAMeasurement ModeOne shot or continuousData Storage-Stores the 52%, 62% and 72% 3P resistance measurementsCalculation-Calculates average and % deviation of the three saved readingsGENERALBacklit LCDDisplayBacklit LCDMeasurement Mode $2P(\Omega), 3P(\Omega)$ $V, I, 2P(\Omega), 3P(\Omega)$ Power Supply(6) AA Alkaline batteries(6) NiMH rechargeable batteries, charging time approx. 6 hrsBattery Life> 2,000 x 3P earth measurements at $100 \Omega$ > 1,500 x 3P earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x $126 \times 70$ mm)SAFETY		128Hz or 256Hz (automatically selected)							
Measurement ModeOne shot or continuousData Storage-Stores the 52%, 62% and 72% 3P resistance measurementsCalculation-Calculates average and % deviation of the three saved readingsGENERALDisplayBacklit LCDMeasurement Mode $2P(\Omega)$ , $3P(\Omega)$ V, I, $2P(\Omega)$ , $3P(\Omega)$ Power Supply(6) AA Alkaline batteries(6) NiMH rechargeable batteries, charging time approx. 6 hrsBattery Life> 2,000 x 3P earth measurements at $100 \Omega$ > 1,500 x 3P earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x $126 \times 70$ mm)SAFETY	No-load Voltage	±10 V peak							
Data Storage-Stores the 52%, 62% and 72% 3P resistance measurementsCalculation-Calculates average and % deviation of the three saved readingsGENERALDisplayBacklit LCDMeasurement Mode $2P(\Omega)$ , $3P(\Omega)$ V, I, $2P(\Omega)$ , $3P(\Omega)$ Power Supply(6) AA Alkaline batteries(6) NiMH rechargeable batteries, charging time approx. 6 hrsBattery Life> 2,000 x 3P earth measurements at $100 \Omega$ >1,500 x 3P earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x $126 \times 70$ mm)SAFETY	Maximum Test Current	20mA							
Calculation       Calculates average and % deviation of the three saved readings         GENERAL       Backlit LCD         Measurement Mode $2P(\Omega)$ , $3P(\Omega)$ V, I, $2P(\Omega)$ , $3P(\Omega)$ Power Supply       (6) AA Alkaline batteries       (6) NiMH rechargeable batteries, charging time approx. 6 hrs         Battery Life       > 2,000 x 3P earth measurements at 100 Ω       >1,500 x 3P earth measurements at 100 Ω         Dimensions       8.78 x 4.96 x 2.75" (223 x 126 x 70mm)         SAFETY	Measurement Mode	One shot or continuous							
GENERAL       Display     Backlit LCD       Measurement Mode $2P(\Omega)$ , $3P(\Omega)$ $V$ , $I$ , $2P(\Omega)$ , $3P(\Omega)$ Power Supply     (6) AA Alkaline batteries     (6) NiMH rechargeable batteries, charging time approx. 6 hrs       Battery Life     > 2,000 x 3P earth measurements at $100 \Omega$ > 1,500 x 3P earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x $126 \times 70$ mm)       SAFETY	Data Storage	-			,				
Display     Backlit LCD       Measurement Mode $2P(Ω)$ , $3P(Ω)$ $V$ , $I$ , $2P(Ω)$ , $3P(Ω)$ Power Supply     (6) AA Alkaline batteries     (6) NiMH rechargeable batteries, charging time approx. 6 hrs       Battery Life $> 2,000 \times 3P$ earth measurements at $100 \Omega$ $> 1,500 \times 3P$ earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x 126 x 70mm)       SAFETY	Calculation	- Calculates average and % deviation of the three saved readings							
Measurement Mode $2P (Ω), 3P (Ω)$ $V, I, 2P (Ω), 3P (Ω)$ Power Supply(6) AA Alkaline batteries(6) NiMH rechargeable batteries, charging time approx. 6 hrsBattery Life $> 2,000 \times 3P$ earth measurements at $100 \Omega$ $>1,500 \times 3P$ earth measurements at $100 \Omega$ Dimensions $8.78 \times 4.96 \times 2.75$ " (223 x 126 x 70mm)SAFETY	GENERAL								
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Power Supply(6) AA Alkaline batteriescharging time approx. 6 hrsBattery Life> 2,000 x 3P earth measurements at 100 Ω>1,500 x 3P earth measurements at 100 ΩDimensions $8.78 \times 4.96 \times 2.75$ " (223 x 126 x 70mm)SAFETY	Measurement Mode	2P (Ω), 3P (Ω)							
Dimensions         8.78 x 4.96 x 2.75" (223 x 126 x 70mm)           SAFETY	Power Supply	(6) AA Alkaline batteries							
SAFETY	Battery Life	$>$ 2,000 x 3P earth measurements at 100 $\Omega$			>1,500 x 3P earth measurements at 100 $\Omega$				
	Dimensions	8.78 x 4.96 x 2.75" (223 x 126 x 70mm)							
<b>Safety Ratings</b> EMC: IEC 61326-1; IEC 61010-2-030 / 600 V CAT IV	SAFETY								
	Safety Ratings	EMC: IEC 61326-1; IEC 61010-2-030 / 600 V CAT IV							

CATALOG NO.	DESCRIPTION	
2135.55	Ground Resistance Tester Model 6422 (Digital, 3-Point)	
2135.56	Ground Resistance Tester Model 6422 Kit-150ft (Digital, 3-Point)	
2135.57	Ground Resistance Tester Model 6424 (Digital, 3-Point)	
2135.58	Ground Resistance Tester Model 6424 Kit-150ft (Digital, 3-Point)	
2135.59	Ground Resistance Tester Model 6424 Kit-300ft (Digital, 3-Point)	Ø AEMO®



# **GROUND RESISTANCE TESTERS**MULTI-FUNCTION

#### MODELS 6422 & 6424

#### **FEATURES**

- · Simple, one button operation eliminates errors in testing
- Test button turns green when measurement is stable
- 2P resistance/ 3P ground resistance measurement up to  $50k\Omega$  for highly resistive terrain
- Large back lit digital display easier to read in all lighting conditions
- Automatic hold function retains last measurement after the reading stabilizes ensuring the measurement is valid
- Automatic test frequency selection between 128 and 256
   Hz, providing stable results in adverse environments
- Powers up in 2 pole mode automatically checks the injector lead connection when connected to the H auxiliary rod
- Convenient storage of the three measurements along with the average and % deviation - easily determines proper test results
- Built in test lead compensation capability improves the accuracy of low resistance measurements
- CAT IV 600V rated for a high level of operator safety
- Checks AC/DC voltage and AC leakage current (Model 6424)
- Stores 52, 62 and 72% measurements eliminates errors in determining the ground resistance (Model 6424)
- Leakage current measurement from 0.5mA to 70A (Model 6424)
- Battery recharging via AC adapter, USB or vehicle DC port b (Model 6424)
- Color coded leads and terminals provide fast, error-free connection hook-up
- Detects and prohibits hazardous voltage measurement
- Direct access to all functions, even when wearing work gloves
- Rugged water resistance case, for all terrain use
- Built-in display stand to prop up instrument for seeing the display better when placed on the ground

### **FUNCTIONAL DISPLAYS**



2P mode used for continuity and bonding checks – is active when the instrument is turned on.



3P mode used for measuring the grounding system. The resistance of the injector electrode and the test voltage are also displayed.

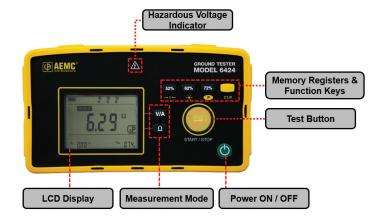


Live voltage is displayed when the V/A function is selected and test leads are connected to AC or DC voltage.



Leakage current is displayed when the optional MN72 probe is connected and the V/A function is selected

## **FRONT PANEL - 6424**



## ACCESSORIES/REPLACEMENTS

#### Catalog #2135.44

Ground Rod – Set of (2) 17" Stainless Steel T-shaped Auxiliary Ground Electrodes

#### Catalog #2153.06

MN72 AC Current Probe (6424 only)

CATALOG #5000.92 Calibration Checker







