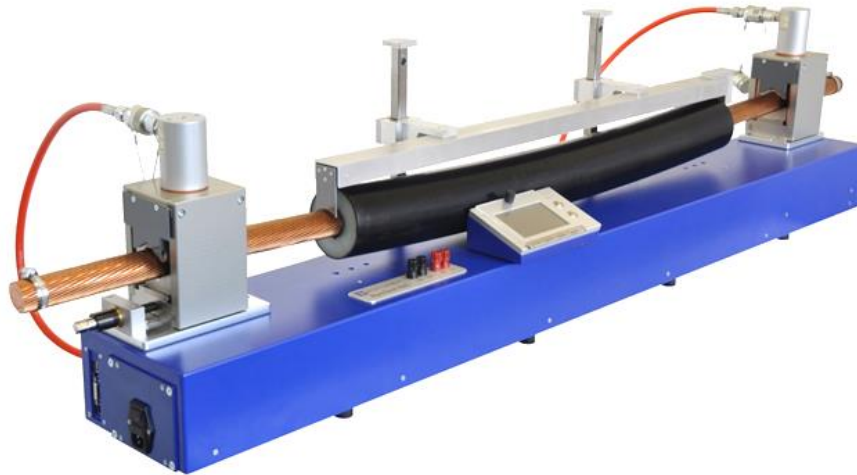


ResTest 110

Universal & powerful equipment for all types of conductors including insulated ones



DESCRIPTION

ResTest 110 perfectly masters the problems experienced in the measurement of a large range of sections and shapes especially with aluminum, flexible, and/or insulated conductors, a "flying ruler" enabling its adaptation to multiple shapes, sizes and types of cables.

The use of hydraulic jaws ensures a good current distribution while a hydraulic piston allows for the tensioning of the sample under test. Undoubtedly, ResTest 110 can also measure a variety of smaller sections.

This fully integrated equipment not only offers operating comfort, but is also the mastering of all the uncertainties connected with the measurement. Therefore, AESA specifies the overall accuracy of the measurement and not the accuracy of the micro-ohmmeter only.

KEY FEATURES

- **Very broad measuring range**
 - high accuracy up to 1'000 mm², adapted for samples up to 1'200 mm²
- **Ideal for any conductor**
 - class 1 (solid); 2 (stranded); 5/6 (flexible), sector shaped & insulated conductors
- **Hydraulic system**
 - mastered pressure and tension with an hydraulic system
- **Easy to use**
 - direct readings in Ω/km @20°C, button or touch, embedded PC
- **Overall accuracy**
 - specification related to the whole measurement, not the instrument only



AESA Cortailod

TECHNICAL SPECIFICATIONS

Measuring range	10 $\mu\Omega$ - 200 Ω			
Measuring length	1'000 mm			
Minimum sample length	1'700 mm			
Maximum sample \varnothing	45 mm			
Sections	Copper		Aluminium	
	0.5 – 1'200 mm ² 20 AWG – 2'400 kcmil		0.5 – 800 mm ² 20 AWG – 1'600 kcmil <i>Note: above 185 mm² / 370 kcmil, the conditions of the conductor are of increased importance and requiring special care and use of specific jaws.</i>	
Accuracy (\pm 3 digits)	<1'000 mm ² <2'000 kcmil	\pm 0.1%	<185 mm ² <365 kcmil	\pm 0.1%
	>1'000 mm ² >2'000 kcmil	\pm 0.2%	>185 mm ² >365 kcmil	\pm 0.2%
	<i>Note: the accuracy is given provided the required accessories for this material are utilized.</i>			
Operating mode	Simple (buttons) / Advanced (touch screen)			
Display	State-of-the-art interface thanks to a 7" touchscreen			
Resolution	4 ½ digits			
Consisting of	<ul style="list-style-type: none"> • Integrated measuring equipment : measuring ruler with all integrated functionalities (<i>temperature, length, voltage, current,...</i>), embedded metrology, embedded computer. • Hydraulic pump: fixed to the equipment 			
Supply voltage	100 - 240 VAC / 50-60Hz			
Interfaces	2 x USB (e.g. for printer) 1 x Display Port connector for external monitor 2 x RJ45 for LAN connection			
Dimensions	1780 x 510 x 600 mm (70" x 20.8" x 23.6")			
Weight	≈52 kg (114 lb)			
Article No	32.0110.0001.00			

COMPONENTS

We deliver:

- Integrated measuring equipment
- Hydraulic pump
- ISO 17025 Certificate

AVAILABLE OPTIONS

The equipment can be completed with:

- Calibration box
- Standard rod
- Teeth and compacting jaws
- Torque wrench
- Electric pump
- Label printer
- Control software
- Conductivity/Resistivity
- Maintenance contract

AESA proposes other specific equipment for the measurement in the laboratory and directly on the production line

KEY BENEFITS

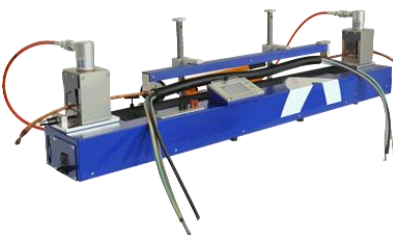


ISO 17025 ACCREDITED



AESA SA AESA ResTest Resistance Bridge			
ID	AESA310	Sn :	1#05659
Date	4/15/2011	Time	8:49:00 AM
α_{CU}	0.393 %/ $^\circ\text{C}$	θ_{N1}	20 $^\circ\text{C}$
Rmes	+3.8109 Ω /km	Duration	00:00:14 / 2
Tmes	+20.70 $^\circ\text{C}$		

ROI < 1 year



USER-FRIENDLY

- ResTest can be multi-lingual
- Direct results without post calculation
- Only two buttons for simplified use in production
- Extended functions for the use in the laboratory

ACCURATE

- The equipment is certified ISO 17025
- All uncertainties are mastered
- The risk of human error is reduced to its minimum
- Specifications apply to the overall measurement
- Improved repeatability, thanks to control of hydraulic force

POWERFUL

- The hydraulics jaws ensure homogeneous current distribution
- Includes a mechanical tensioning system
- Data tables recommending adequate pressure for exact and reproducible results

SMART

- All data (results and conditions) are saved in its internal PC
- Labels can be printed directly on site
- Data can be exported through the LAN
- Traceability is easily managed

COST EFFECTIVE

- High accuracy allows raw material savings
- Simplicity of use reduces operational costs
- Reliable information allows process improvement
- Options can make the system even more efficient

UNIVERSAL

- Broad measuring range (cross-sections)
- All type of conductors can be measured
 - class 1 (solid)
 - class 2 (stranded)
 - class 5/6 (flexible)
 - sector shaped
 - insulated conductors

Options

1. Calibration control box type AESA ResCal 2

Article No: 45.0001.0002.0

Needed to check the calibration of the different measurement scales.

Specification: $\pm 0.1\%$ and $\pm 50 \text{ ppm}/^\circ\text{C}$

Including 4 reference values:

- 0.1 m Ω
- 1.0 m Ω
- 10.0 m Ω
- 100.0 m Ω



Delivered with ISO 17025 certificate



2. Standard manganin rod $\varnothing 5.5 \text{ mm}$

Article No: 45.0030.0002.0

Needed to check the overall calibration (incl. ruler)

Delivered with ISO 17025 certificate



3. Teeth clamping jaws for class 1 & 2

120° Jaws for Copper and Aluminium 185 to 1'500 mm²

Article No: 51.0180.0038.0

4. Compacting jaws for class 5 & 6

Article No: 51.0180.0027.0

Jaws designed for class 5 and 6 conductors (AL/CU) (according to IEC 60228).



Other versions can be proposed upon request.

S [mm²]	D [mm] indicative (Class 2)	Comp. Jaws	Comp. Jaws range [mm]
800	33.9	S1	24.0 to 34.0
630	30		
500	26.5		
400	23.3	S2	16.9 to 23.9
300	20.7		
240	18.4		
185	15.8	S3	11.9 to 16.8
150	14.1		
120	12.8		
95	11.4	S4	8.3 to 11.8
70	9.8		
50	8.1	S5	5.8 to 8.2
35	6.9		
25	5.9	S6	4.0 to 5.7
16	4.7		

5. Set of four different compacting jaws

Article No: 51.0180.0031.0

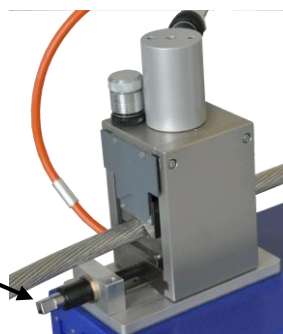


1 set includes 4 different compacting jaws that can be freely chosen within the ones listed in previous position.

6. Torque wrench

Article No: 51.0300.0002.0

For the tensioning system:
Optional torque wrench allowing the setting of the contact forces in an easier and repetitive way



7. Label printer type Brother QL-570

Article No: 51.0500.0012.0



AESA SA			
AESA ResTest Resistance Bridge			
ID	AESA310	Sn :	1#05659
Date	4/15/2011	Time	8:49:00 AM
α_{CU}	0.393 %/°C	θ_{N1}	20 °C
Rmes	+3.8109 Ω /km	Duration	00:00:14 / 2
Tmes	+20.70 °C		

This printer is connected directly to the USB port, printing labels like above example.

8. Electric pump

Article No: 51.0900.0006.0

In the standard version, the system is equipped with a manual pump. This electric pump replaces the manual one and offers more comfort of use to the operator.



9. Control software ResSoft

Article No: 52.0030.0007.0

This software allows driving the resistance bridge in a remote mode with a compatible PC-Type computer. This is done using a USB interface.

This software enables:

- Library of conductor specifications
- Measurement monitoring
- Reporting
- Maintenance



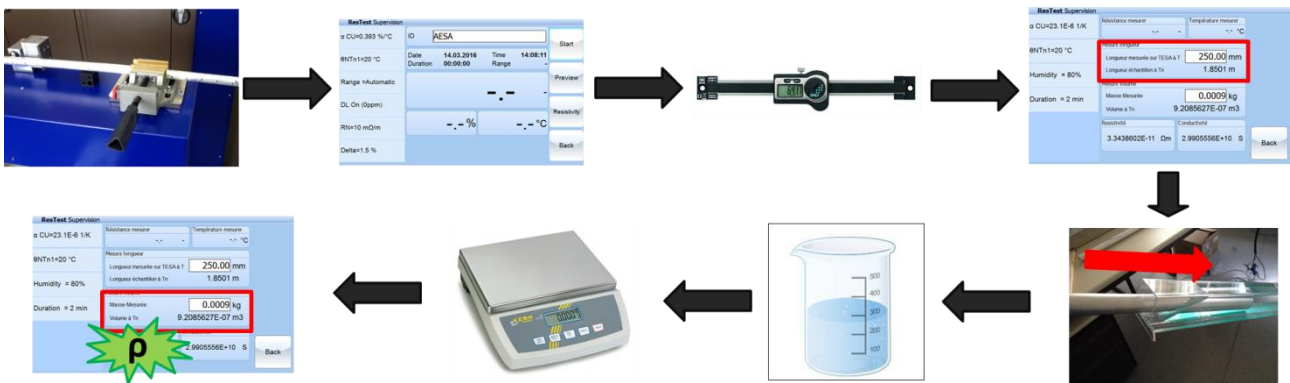
10. Conductivity / Resistivity option

Article No: 51.0030.0079.0

AESA Cortailod developed a novel, fast and accurate solution to measure the conductivity / resistivity. The principle consists in 3 different steps:

1. Resistance & temperature (with ResTest)
2. Length with special ruler
3. Cross-section by volume measurement

→ Results automatically computed & displayed



This new solution fills a gap in the linear resistance field with the precise conductivity / resistivity measurement for Class 1 conductors (according to the norm IEC 60228) in raw material incoming inspection test.