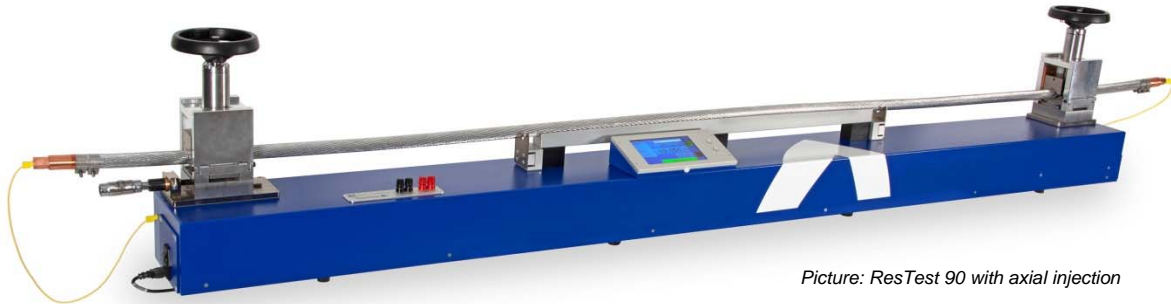




## ResTest 90

*Universal and accurate measuring equipment for small and medium-sized conductors*



Picture: ResTest 90 with axial injection

### DESCRIPTION

ResTest 90 is the most suitable solution for measuring the linear resistance of solid, stranded and flexible conductors.

The clamps are equipped with a quick-release system for an effective and intensive use. They ensure a homogeneous current distribution in all wires of the conductor. This is one of the key factors for accurate and reproducible measurements.

This fully integrated equipment offers not only ease of use, but also the control of all measurement uncertainties. This is why AESA specifies the overall accuracy of the measurement and not the accuracy of the micro-ohmmeter alone.

### KEY FEATURES

- **Broad measuring range**
  - high accuracy with fine wires and up to 1000 mm<sup>2</sup> (2000 MCM) conductors
  - prepared for axial current injection option
- **Adjustable gripping system**
  - two manually adjustable clamping jaws allowing the tightening of each cable's end individually
- **Ideal for conductor**
  - class 1 (rods & wires)
  - class 2 (stranded conductors)
  - class 5&6 (flexible conductors)
  - Sector conductors
- **Enhanced comfort**
  - LED monitoring system
- **Easy to use**
  - direct readings in  $\Omega/\text{km}$  @20°C, push button or touchscreen, embedded PC
- **Overall accuracy**
  - specifications relate to the whole measurement, not the instrument only



AESA Cortaillod

## TECHNICAL SPECIFICATIONS

Measuring range	10 $\mu\Omega$ - 200 $\Omega$						
Measuring length	1'000 mm						
Minimum sample length	2'500 mm / 99"						
Sample $\varnothing$	min	$\varnothing$ 0.8 mm / 0.03" (0.5 mm <sup>2</sup> / 20 AWG)					
	max	$\varnothing$ 38 mm / 1.49" (1000 mm <sup>2</sup> / 2000 MCM)					
Accuracy ( $\pm$ 3 digits)	Class 1	<b>Copper</b>			<b>Aluminium<sup>a)</sup></b>		
		< 1'000 mm <sup>2</sup>	< 2'000 MCM	$\pm$ 0.1%	< 1'000 mm <sup>2</sup>	< 2'000 MCM	$\pm$ 0.1%
	Class 2 Sector	< 1'000 mm <sup>2</sup>	< 2'000 MCM	$\pm$ 0.1%	< 35 mm <sup>2</sup>	< 2 AWG	$\pm$ 0.1%
					< 95 mm <sup>2</sup>	< 3/0 AWG	$\pm$ 0.3%
	Class 5 Class 6	< 1'000 mm <sup>2</sup>	< 2'000 MCM	$\pm$ 0.1%	b) < 630 mm <sup>2</sup>	< 1'250 MCM	$\pm$ 0.3%
				b) < 1'000 mm <sup>2</sup>	< 2'000 MCM	$\pm$ 0.5%	
				< 35 mm <sup>2</sup>	< 2 AWG	$\pm$ 0.1%	
				< 95 mm <sup>2</sup>	< 3/0 AWG	$\pm$ 0.3%	
						a) The conditions of the conductor are of increased importance and requiring special care. Therefore the accuracy is given as typical value.	
						b) Requires the axial injection option	
Resolution	4 ½ digits						
Display	State-of-the-art interface thanks to a 7" touchscreen and a push button system						
Operating mode	Simple (push buttons) / Advanced (touch screen)						
Consisting of	<ul style="list-style-type: none"> <li>• Measuring ruler (with all integrated functionalities: temperature, voltage, current,...)</li> <li>• Embedded metrology</li> <li>• Embedded MS Windows based PC</li> <li>• ISO 17025 certificate</li> </ul>						
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	2580 x 220 x 465mm (102" x 8.7" x 18.3")						
Weight	≈30 kg (66 lb)						
Article No	32.0090.0001.00						

## OPTIONS

- Torque wrench
- Axial current injection
- Water bath
- Label printer
- Remote control software
- ISO17025 certified calibration box
- ISO17025 certified rod
- Warranty extension
- Maintenance contract

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

## KEY BENEFITS



### USER-FRIENDLY

- Quick-release clamping system
- ResTest is multi-lingual
- Direct results without post calculation
- Only two buttons for ease of use in production
- Extended function for the use in the laboratory

## ISO 17025 ACCREDITED



### ACCURATE

- The equipment is certified ISO 17025
- All uncertainties are mastered
- The risk of human error is reduced to its strict minimum
- Specifications apply to the overall measurement
- Improved repeatability thanks to adequate accessories

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

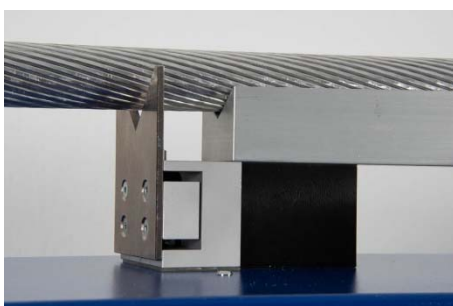
### SMART

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

**ROI < 1 year**

### COST EFFECTIVE

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



### UNIVERSAL

- class 1 (solid)
- class 2 (stranded)
- class 5 & 6 (flexible)
- sector-shaped

# Options

## 1. Torque wrench

Article No: 51.0300.0002.0



Optional torque wrench allowing the setting of the contact forces in an easier and repetitive way

## 2. Axial current injection

AESA Cortailod has developed a new patent filed method for measuring the linear resistance. Rather than injecting it transversely, current is injected axially. In this way, each wire in the conductor is in direct contact with the current source, thus minimizing the contact resistance effect between wires. As a result, the accuracy and reliability of the measurement is significantly enhanced. It is especially recommended for large section conductors, aluminium and/or waterproofing / Milliken cables.



Kit		Conductor size	Part number
1	small	50 - 630 mm <sup>2</sup>	<a href="#">51.0030.0104.0</a>
2	medium	400 - 2'000 mm <sup>2</sup>	<a href="#">51.0030.0105.0</a>

## 3. Water bath

Article No: 51.0030.0108.0

This option is a tabletop accessory that allows rapid pre-stabilization of the temperature of the sample to be measured. It could be well suited for hot conductors of medium cross section (highly compressed).

## 4. Label printer (e.g. Brother QL-700)

Article No: 51.0500.0012.0



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

AESA SA			
AESA ResTest Resistance Bridge			
ID	AESA310	Sn :	1#05659
Date	4/15/2011	Time	8:49:00 AM
$\alpha_{CU}$	0.393 %/°C	$\theta_{N1}$	20 °C
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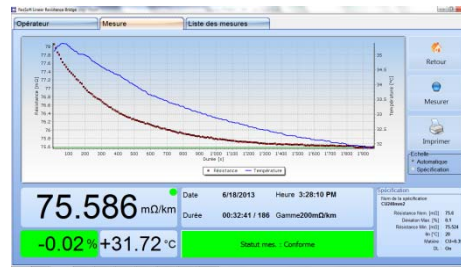
**5. Control software ResSoft**

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



**6. ISO 17025 certified calibration box ResCal 2**

Article No: 45.0001.0002.0

This standard is needed to verify the accuracy of each range of the ohmmeter. This standard is delivered with an ISO 17025 certificate.

Specification: ± 0.1% and ± 50 ppm/°C

Including 4 reference values:

- 0.1 mΩ
- 1.0 mΩ
- 10.0 mΩ
- 100.0 mΩ



**7. ISO 17025 certified manganin rod Ø 5.5 mm**

Article No: 45.0030.0002.0

This standard is needed to verify the overall accuracy of the equipment, included ruler and clamping jaws. This standard is delivered with an ISO 17025 certificate



**8. Warranty Extension**

Article No: 60.0900.0004.0

AESA is confident with its technology and the quality of its goods. This is why the system is supplied with a 2-years warranty period. In order to protect its customer's investment, AESA offers the possibility to extend the warranty period to 3 years.

**9. Maintenance contract**

Article No: 60.0100.0002.0

Even the most reliable systems require regular, planned and preventive maintenance as well as periodical calibrations. AESA proposes service packages to extend the operating life of your equipment, to control your maintenance costs, and to ensure optimal performances.