

ResTest 8134 *standard version*

The unique solution to measure directly on the stranding machine.



DESCRIPTION

On-the-line measurement avoids cutting samples for the laboratory. It allows rapid measurement, even at high temperature, of extremely compact and warm strands. AESA's patented dry heating system (no water use) avoids unnecessary waiting for the strand to cool down since the whole area surrounding the measurement zone is heated to the same temperature as the conductor. Contrary to other solutions, ResTest 8134 doesn't require the need of insulating a part of the production line (dangerous and unlawful).

Excess material represents a safety margin. Therefore cables are generally supplied with unnecessary and expensive 2% to 5% excess material, just because of the lack for any efficient means to control the resistance of the cable.

KEY FEATURES

- **Very broad measuring range**
 - for conductors up to 2'000 mm²
- **For usual conductors**
 - class 1 (solid); 2 (stranded) and sector shaped conductors
- **Important savings**
 - raw material savings enable pay-back in less than one year
 - testing without generation of any scrap
 - rapid check of production adjustment effects thanks to a short feedback loop
- **Overall accuracy**
 - our specification relates to the overall measurement, not only to the instrument
 - no earth/ground insulation thanks to AESA's patented technology



AESA Cortaillod

TECHNICAL SPECIFICATIONS

Measuring range	9 $\mu\Omega$ - 7000 $\mu\Omega$			
Measuring length	1000 mm			
Mechanical capability (max. sample OD)	Max \varnothing 60 mm / 2.36"			
Sections	Copper		Aluminium	
	2.5 – 2'000 mm ² 13 AWG – 4'000 kcmil		2.5 – 300 mm ² 13 AWG – 600 kcmil	
Accuracy (\pm 3 digits)	<1000 mm ²	$\pm 0.1\%$	<300 mm ²	$\pm 0.1\%$
	<2000 kcmil		<600 kcmil	
	>1000 mm ²	$\pm 0.2\%$	>300 mm ²	Not specified
	>2000 kcmil			
	$\pm 0.4\%$ with microprocessor heating facility <i>Note: The accuracy may depend on the corrosion level and construction characteristics of the tested strand</i>			
Resolution	4 ½ digits			
Operating modes	<ul style="list-style-type: none"> Operator mode for production use (Start-Stop button) Advanced mode for supervisor use (touchscreen with password locked screens) 			
Display	State-of-the-art interface thanks to a 10" touchscreen			
Conductor temperature range	5 - 65°C			
Stabilization time	Usually 3 to 25 minutes			
Supply voltage	Total consumption: 6 KW (230 W without controlled heating) <ul style="list-style-type: none"> European version: 3 x 400V (340-440V) 50Hz US & Japanese version: 3 x 205V (175-225V) 50-60Hz 			
Components	<ul style="list-style-type: none"> Measuring ruler with all integrated components (temperature probes, voltage and current knives) Movable and adjustable trolley (height & inclination) Control unit (with embedded touchscreen, PC, metrology,...) ISO 17025 Certificate 			
Interfaces	2 x USB (e.g. for printer) 1 x Display Port connector for external monitor 2 x RJ45 for LAN connection			
Dimensions	2060 x 800 x 1230 mm (81.1" x 31.5" x 48.4")			
Weight	\approx 120 kg (265 lb)			
Article No	31.8134.0001.0			

OPTIONS

- ISO 17025 control box
- ISO 17025 copper rod
- Printer (for labels or full page)
- Protective cover
- Maintenance contract

*AESA proposes also ResTest 8135 for copper and large aluminium sections,
 ResTest 8136 (short version) when space is limited on the production line and different models for the laboratory (for samples).*

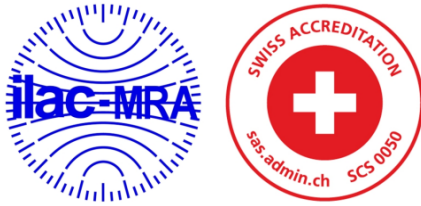
KEY BENEFITS



USERFRIENDLY

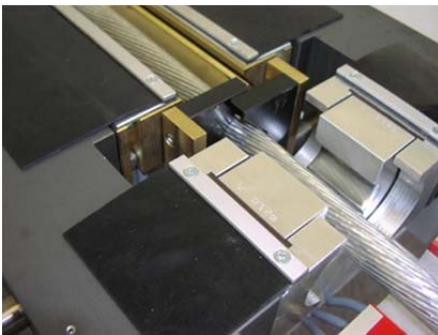
- ResTest is multilingual
- Direct results without post calculation
- Simple Start/Stop button for use in production
- Advanced mode for supervisor use

ISO 17025 ACCREDITED



ACCURATE

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



EFFICIENT

- Measurement directly on the stranding machine
- Elimination of destructive sample cutting
- Usable on several production lines (trolley)
- Short measuring time (integrated heating system)
- No need for water for temperature stabilisation
- No need for earth/ground insulation

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	βN1	20 °C
Rmes	+3.8109 Ω/km	Duration	00:00:14 / 2
Tmes	+20.70 °C		

SMART

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

ROI < 1 year

COST EFFECTIVE

- High accuracy allows important raw material savings
- ROI < 1 year, therefore savings at short term
- Simplicity of use reduces operational costs
- Reliable information allows process improvement

INTERFACE

ResTest 8134 measurer is supplied with a 10" lighted screen PCT-sensor covered with a protection glass (unbreakable), perfectly suitable for a production use. Interface can be supplied in the language of your choice (English, French, Chinese, Arabic, Russian etc.) and changed directly by the user if needed.



The front panel is made of the screen and an illuminated button giving indication of the measurement status. This button is specially designed for production use, where the operator can easily start/stop the measurement

On the back panel, 2 USB ports are available to connect a printer, keyboard or mouse. 2 x RJ-45 allow the connection to another computer in your network, or during a possible remote maintenance with AESA using Teamviewer. One Display Port connector can be used to connect an external monitor (laboratory use for example).



INTEGRATED FUNCTIONS

CREATE A LIBRARY OF STRAND SPECIFICATIONS

Each specification includes:

- A specification name
- The nominal resistance
- The maximum allowed deviation
- The nominal temperature
- The material being used and its physical constants α (temperature coefficient) and ρ (resistivity)

START A MEASUREMENT

The users can access to two different menus:

1. **Direct measurement:** All parameters can be modified (as α : Temperature coefficient, ρ Resistivity, allowing to show the section of the conductor in [mm²], θ_n : Nominal temperature at which the resistance value is given (generally 20 [°C] etc.) Libraries of these coefficients are available in a dedicated Menu. They can be completed depending on your needs.
2. **Specification measurement:** The operator preselects a specification (created previously by a supervisor). Graphical information is also available. It is possible to select previous measurement and to print the last value measured.

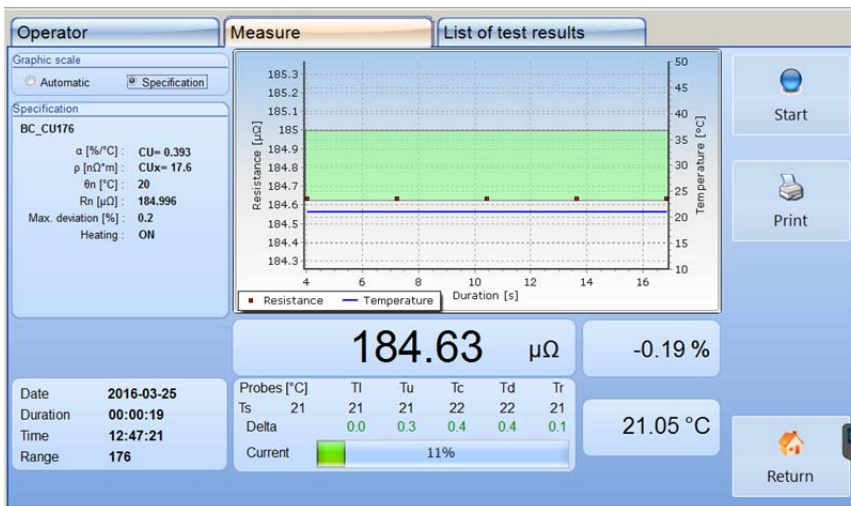
All measurements are stored thanks to an internal PC. The data can be used for post-analysis, measurement verifications or printing if needed.

GRAPHICAL DISPLAY

The measurement window allows following, second after second, the evolution of the resistance and temperature values as the automatic temperature stabilization process moves on.

All possible data are given in this window, including:

- The measurement status versus the specification at the end of the process,
- The deviation to the specification,
- The margin in percentage to the limit (the raw material given away)
- The measurement duration
- Cross-section in mm²

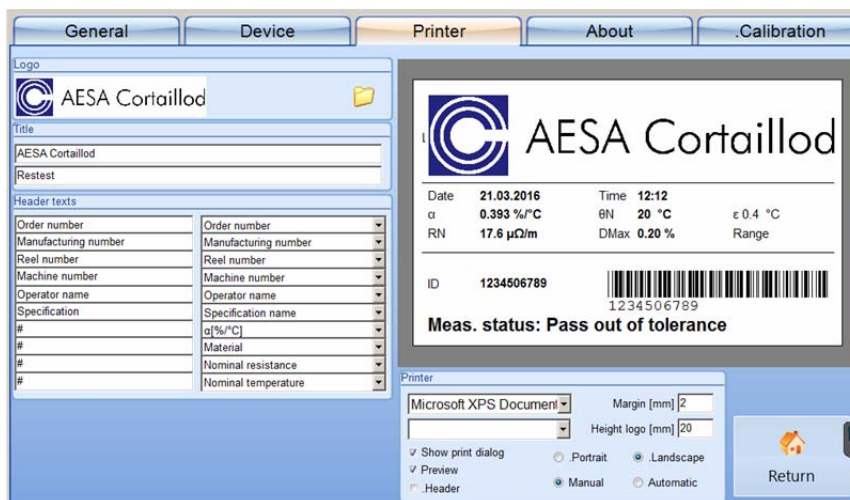


REPORTING

The user has the possibility to create its own report, with a title and the company logo, a set of questions with the corresponding answers and all available information related to the measurement itself.

The report can be generated as a printed page or, in a condensed format, on a sticker.

The use of stickers obviously needs an adapted printer. The size of the stickers can be defined in the AESA software.



MAINTENANCE

The “AESA support” button allows launching Teamviewer for a remote connection.

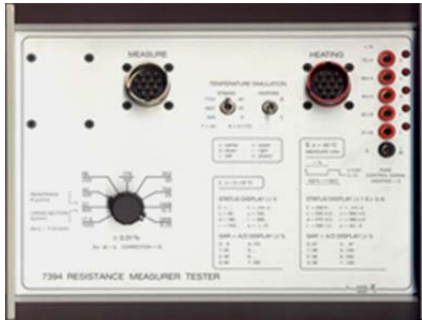
A button give you access to the user manual in PDF file.

ACCESSORIES AND OPTIONS

1. ISO 17025 certified control box type 7394

Article No: 45.7394.0001.0

This option is required to check the accuracy of each range of the ohmmeter.
This option also allows to simulate various test conditions in order to check the device.



Delivered with ISO 17025 certificate

2. ISO 17025 copper rod 11mm length 2 m

Article No: 45.0030.0007.0

This option is required to verify the overall accuracy of the equipment (including the ruler).



Delivered with ISO 17025 certificate

3. Label printer type Brother QL-700

Article No: 51.0500.0012.0

This printer is directly connected to the USB port and prints the measured data and test conditions on labels (example here below).



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		

4. Full page printer

This printer is directly connected to the USB port and prints the measured data and test conditions on full pages. It takes place on a specially adapted support fixed on the ResTest 8134 trolley.



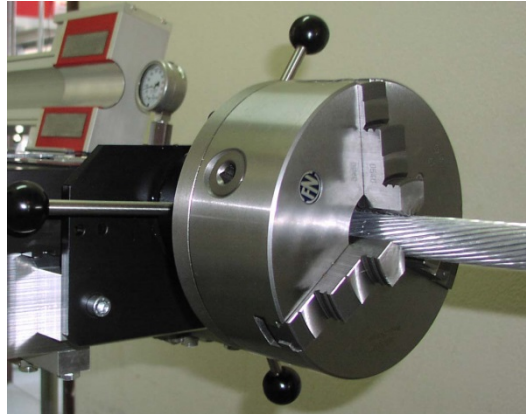
Laserjet printer
Adapted support for printer

Article No: 51.0500.0021.0
Article No: 51.0001.0031.0

5. Cable tensioner for sample measurement (off-the-line)

Article No: 51.0030.0043.0

Specially designed for laboratory purposes (sample testing), this tool allows a very accurate copper and aluminium measurement by straightening the sample and twisting it if need be (note: the force is not quantifiable).



6. Protective cover

Article No: 51.0030.0077.0

This option covers the complete system in order to protect it when not in use.



7. Commissioning

Article No: 61.0001.0001.0

The commissioning will be performed on site. It will be organised as soon as the equipment is arrived at the end-user plant. The commissioning includes the installation of the equipment as well as the training of the operators.

8. Services

AESA offers also several additional services like:

Warranty extension (standard = 24 months)

Article No: 61.0100.0001.0

Maintenance contract

Article No: 61.0100.0011.0

Upgrade, calibration, remote assistance, expertise, specific training, ...