



CABLE TESTING OVERVIEW

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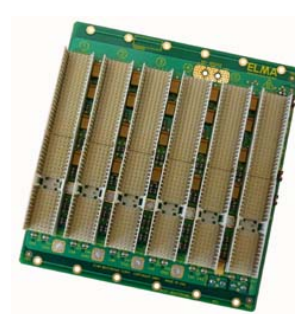
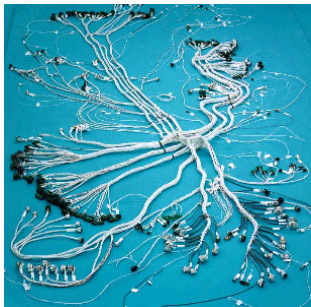
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CABLE TESTING > DEFINITION



Cable testing is made with a cable tester.

A cable tester is an automatic test equipment dedicated for verifying and testing electrical connections in a cable, a harness, a slipring, on a backplane or any other wired assembly. A cable tester automatically checks that the cabling is conform to the cabling plans, and is of expected quality.

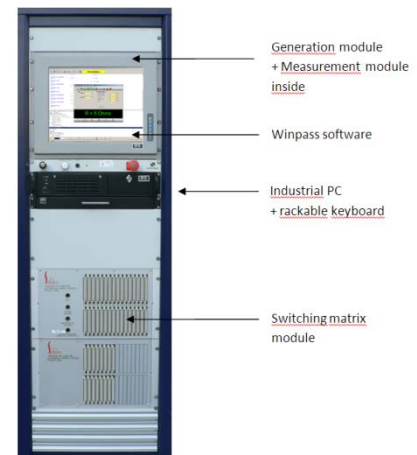
Cable testing can be made for production and maintenance.

A cable tester is made of :

- generation module (current generator + high voltage source)
- measurement modules
- switching matrix module
- PC computer
- software

A cable tester can test AUTOMATICALLY (thanks to the switching matrix) your device under test for its :

- CONFORMITY with the continuity test
- QUALITY with the insulation test, and high voltage test
- FUNCTIONALITY with the stimuli test (also called energisation)





CABLE TESTING > WHY CABLE TESTING ?

Cable testing is **FIRSTLY** made to drop down testing times, to optimize the manufacturing process

This is done to check the:

- **CABLE CONFORMITY**, according to the cabling plans from the design department (for example: the right connector pin should be wired to the right connector pin or pins ; a twisted pair should be really twisted, the shielding should be at the right place, ...)

- **CABLING QUALITY**. Here will be checked the quality of the cables, the connectors, the tracks, the connexions, the insulated parts. For example, we will check the cables are not damaged, scratched, that there is no metal dusts in the connectors, in the cabling, that no pins are bended, that the cables are not damaged after crimping, that isolated points in connectors are well isolated, insulation of connectors, respect of distances in the air between metallic points or between cables and/or pins and grounding and/or connector body, ...

- **CABLE FUNCTIONALITY**. At this stage we know that the cable is correctly cabled and that his quality is optimum. So we can use the tested cable in real conditions where it will activate different elements. For example, by injecting the desired current and applying the desired voltages, we will activate lamps, buzzers, backlights, energise relays, check the functionality of switches, inverters, ...

IN ADDITION, USER IS NOT ANYMORE IN CONTACT WITH HIGH VOLTAGES ; HIS SAFETY IS OPTIMIZED AND PRESERVED.



CABLE TESTING > TYPICAL TESTS MADE WITH A CABLE TESTER

FROM 16 TEST POINTS TO 100 000 TEST POINTS, OUR CABLE TESTER RANGE INTEGRATES THE FOLLOWING FEATURES

- continuity test in 2 and 4 wires mode up to 2.5 A
- insulation test up to 4200 VDC
- hipot test up to 5000 VAC and 6000 VDC
- component test (capacitor, resistance, diode, zener diode, inductance, GMOV, transorbs), shielding test, twisted pairs, coaxial cable measurement ...
- stimuli and functional test for relay, light, speaker, engine activation, energisation ...

CABLE TESTING > TYPICAL APPLICATION



- aerospace (satellites, launch vehicles, sub-assemblies, ...)
 - aeronautic (planes, helicopters, optronics, unmanned air vehicles, sub-assemblies, ...)
 - railways (trains, metro, tramways, ...)
 - army (radars, rockets, ucav, submarines, ...)
 - connector manufacturers, telecommunication, electrical cabinets,...
- Our business is made half in production, half in maintenance.

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CABLE TESTING > GUIDE FOR QUOTATION

1. Product under test, application?
2. Maximum test voltage?
3. How many points?
4. Is there any components inside the harness under test?



5. Is there any stimuli test, functional test needed?
7. What sort of output connectors are required* (in standard we are providing DIN41612 female connectors)?



*Indeed we can build an in between interface with any type of desired connectors: Deutch, Labinal, Wago, Harting, SOURIAU, ITT CANNON... on the front panel in order to provide stronger connectors instead of DIN. This allows to make more securely many connexion/disconnexion