

# adaptronic Prüftechnik GmbH

Off-the-shelf and customized wiring test systems

**Competence in Testing.**

# Modular Test System

# NT 700

- **Hardware Overview**
- **Measurement Specifications**
- **Application Examples**
- **Options**

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Central Processing Unit



High Voltage Generator

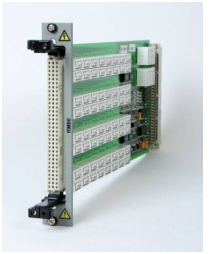






Measurement Generators







Test Point Cards + Interfaces

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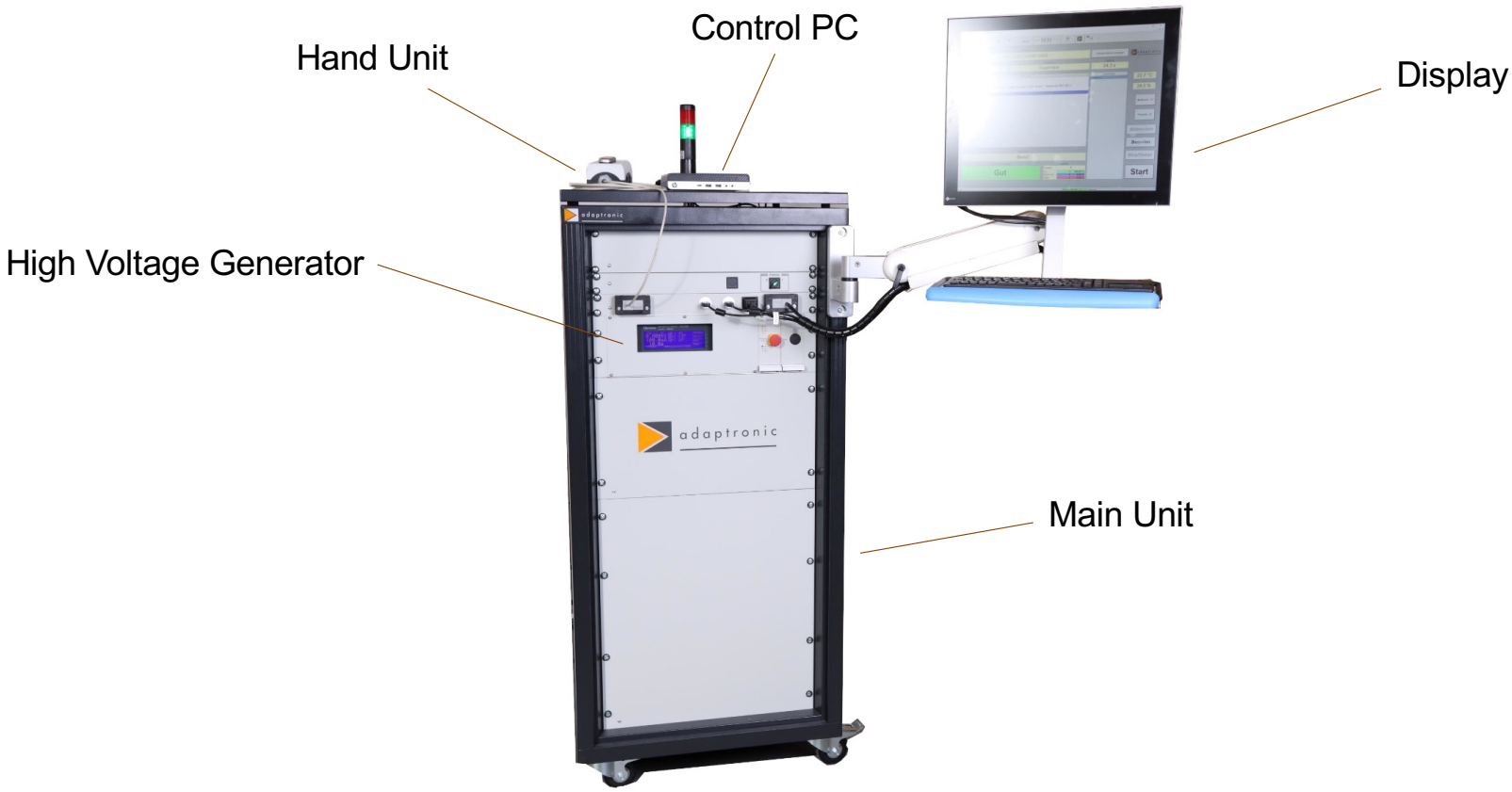


* EXAMPLE

# Measurement Specifications

| | NT 700-1 | NT 700-2 | NT 700-3 | NT 700-5 |
|---|---|---|---|---|
| **Max. test voltage DC in V** | 6000 VDC | 3750 VDC | 3750 VDC | 6000 VDC |
| **Max. test current DC in mA** | 2000 mA | 2000 mA | 2000 mA | 2000 mA |
| **Max. test voltage AC in V** | 5000 VAC | 2650 VAC | 2650 VAC | 5000 VAC |
| **Max. test current AC in mA** | 30 mA | 30 mA | 30 mA | 30 mA |
| **Max. number of test points** | 32768 | 1024 | 1024 | 1536 |

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X = basic equipment  O = optional  - = not possible

| Tester | MT20 | MT40-40 | MT40-250 | MT2000 | MT1500DC |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| **NT 600** | X | O | O | O | O |
| **NT 600 TPI/FPI** | X | O | O | O | O |
| **NT 628** | X | O | O | - | O |
| **NT 637-3** | X | - | - | O | X |
| **NT 644** | X | O | O | X | O |
| | | | | | |
| **Low Voltage test** | 20 VDC | 0.2 - 40 VDC / 0.1 - 100 mA | 0.2 - 250 VDC / 0.1 - 10 mA | | |
| **Component test** | Resistors, Capacitors, Diodes, Z-Diodes | Resistors, Capacitors, Diodes, Z-Diodes, LEDs, Suppressor Diodes | Resistors, Capacitors, Diodes, Z-Diodes, LEDs, Suppressor Diodes | Varistors, Surge Arrestors | |
| **Insulation test** | | | | Up to 2150 VDC | Up to 1500 VDC |
| **Continuity test** | X | X | X | Up to 2150 VDC | X |
| **High current continuity test** | | | | | 10 A |
| **Four-wire measurement** | | | | | x |
| **Dielectric strength test** | | | | 1500 VAC with 3 mA / 6 mA<br>2150 VDC with 3 mA / 6 mA | |

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X = basic equipment  O = optional  - = not possible

| Tester | C19052 | C19055 |
|---|---|---|
| |  |  |
| NT 700-1 | o | o |
| NT 700-2 | x | - |
| NT 700-3 | x | - |
| NT 700-5 | x | - |

| Dielectric strength test AC | |
|---|---|
| Test voltage: | 50 - 5000 VAC, in steps of 10 V, 50 Hz or 60 Hz |
| Short circuit current: | C19052: max. 30 mA<br>C19055: max. 200 mA (up to 4000 VAC) |

| Dielectric strength test DC | |
|---|---|
| Test voltage: | 50 - 6000 VDC, in steps of 10 V |
| Short circuit current: | C19052: max. 10 mA<br>C19055: max. 25 mA |

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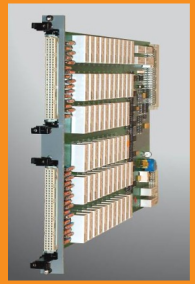
## Test point cards

### RM 60 / RM 80



- Relay test point card with 64 test points
- Test point interface DIN 41612
- RM60: max. 1000 VDC / 750 VAC / 2 A
- RM80: max. 1500 VDC / 1060 VAC / 2 A
- Card format 100 x 220 mm, 3 RU, 4 HP

### RM 10 LT



- Relay test point card with 32 test points
- Test point interface DIN 41612
- max. 2830 VDC / 2000 VAC / 2 A
- Double Europe board long, 6 RU, 4 HP

### RM 16 / RM 100 / RM 120



- Relay test point card with 32 test points
- Test point interface DIN 41612
- RM16: max. 1000 VDC / 750 VAC / 1 A
- RM100: max. 1000 VDC / 750 VAC / 2 A
- RM120: max. 1500 VDC / 1060 VAC / 2 A
- Card format 100 x 220 mm, 3 RU, 4 HP

### RM 11 / RM 15



- Relay test point card:
  RM11 (SP mode): 64 test points
  RM15 (MPX mode): 64 test points
  RM15 (SP mode): 32 test points
- Test point interface DIN 41612
- max. 2150 VDC / 1500 VAC / 2 A
- Double Europe board long, 6 RU, 4 HP

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## Test point cards

### RM 10 TWIN - E

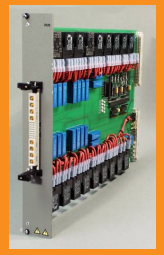


- Relay test point card with 32 test points
- Test point interface HAN 64 EEE
- max. 4670 VDC / 3300 VAC / 2 A
- Double Europe board, long, 6 RU, 8 HP

### RM10 TWIN for TPI

- Relay test point cards with 32 test points
- Test point interface DIN 41612
- The test point card RM10 TWIN for TPI is available in 4 different types:
- RM10 TWIN-HT max. 5100 VDC / 3600 VAC / 2 A
- RM10 TWIN-GT-HT max. 5100 VDC / 3600 VAC / 2 A
- RM10 TWIN-GT-LT max. 2830 VDC / 2000 VAC / 2 A
- RM10 TWIN-GT max. 3750 VDC / 2650 VAC / 2 A

### RM 8



- Relay test point card with 8 test points
- Test point interface DIN 41612, type M
- max. 2150 VDC, 2 ADC / 1500 VAC, 25 AAC
- Double Europe board long, 6 RU, 8 HP

### RM 9



- Relay test point electronics with 8 test points
- Test point interface HAN46EE
- max. 6000 VDC / 5000 VAC / 2 A
- Double Europe board, long, 6 RU, 10 HP

# Test point cards

**RM9 TWIN-GT**



- Relay test point electronics with 8 test points
- Test point interface HAN46EE
- max. 6000 VDC / 5000 VAC / 2 A
- Double Europe board, long, 6 RU, 10 HP
- Optimized for group test

**PEX04, PEX05**



- Transistor test point cards with 128 test points
- Test point interface DIN 41612
- PEX04: max. 40 VDC / 10 mA
- PEX05: max. 250 VDC / 10 mA
- Double Europe board, long, 6 RU, 4 HP

# Test Point Interface

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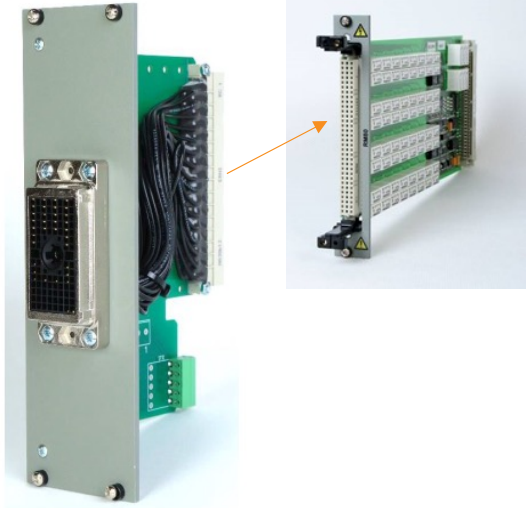
The test point interfaces can be freely and modular selected, based on the needs of the customer or existing equipment at side

Test Point interface (TPI)

Test Point Card



Adapter Cable

Adaptronic can offer a huge variants of existing TPI cards or can design customer based test point cards



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# Application Examples

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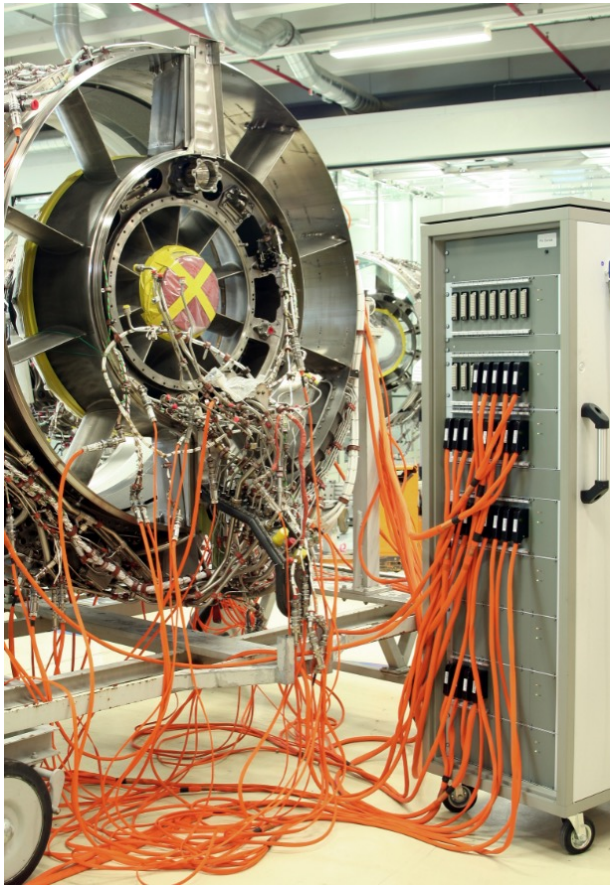

## NT 700 equipped with:

- Max. 4096 test points, 1500 VDC, 2A, Kelvin measurement (1 mΩ)
- Mobile cabinet (600  x 1930 x 800, W x H x D)
- Laptop-PC integrated in the cabinet (drawer)
- Test point interfaces (TPI), DIN 41618, at the rear side
- Import of connection lists (UNICAD)
- Remote maintenance

**Application:**

Fully test of aircraft engine harness

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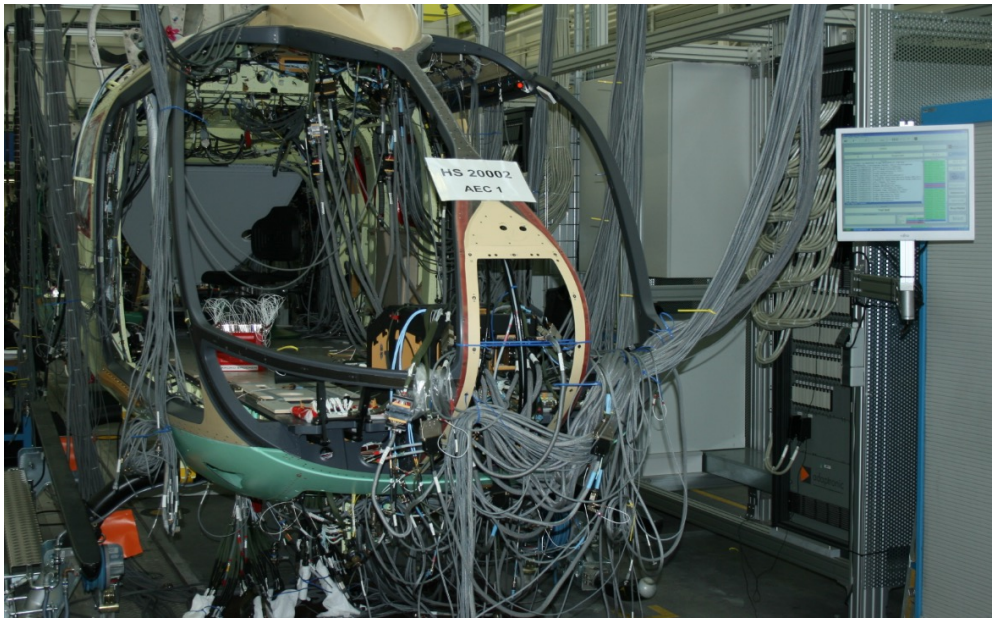


## NT 700 equipped with:

- > 20000 test points
- MV + LV measurement generators

**Application:**

Test of helicopter cable harnesses

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## NT 700 equipped with:

- > 5000 test points
- Internal Stimulus Source
- LV measurement generators
- Preparation of test programs

**Application:**

Functional test of driving stand (railway)

**Year:** 2020

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# Software

NT Control

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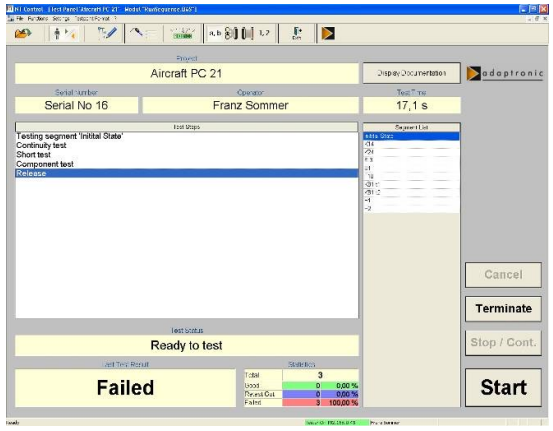
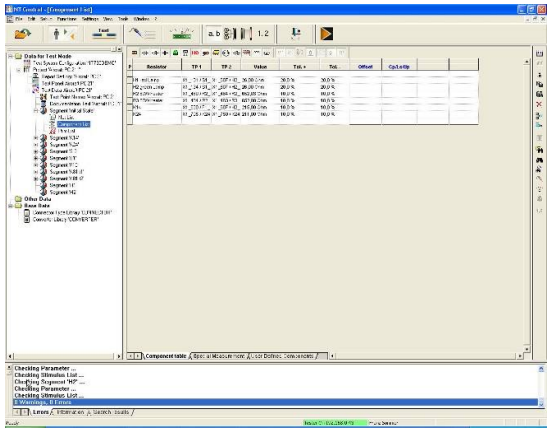
**Significant simplification of the test procedure, reduced programming and debugging time**

- Graphical user interface
- Easy and time-saving generation of test programs
- Reliable visualized user
- Unique support of detailed error localization

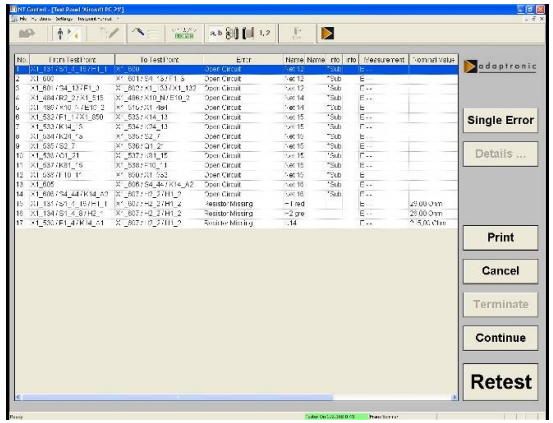
Test mode:
Example of a test panel




Programming mode:
Component list



Error list



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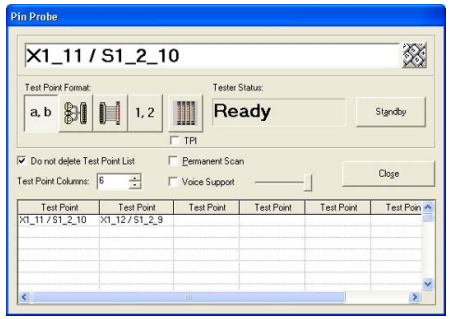
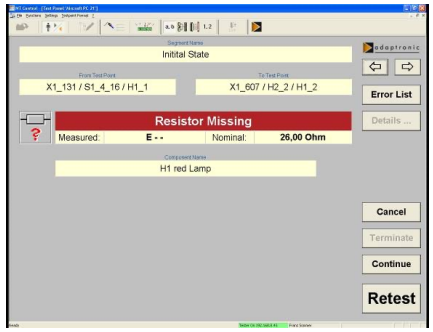
**Smart solutions, e.g.:**

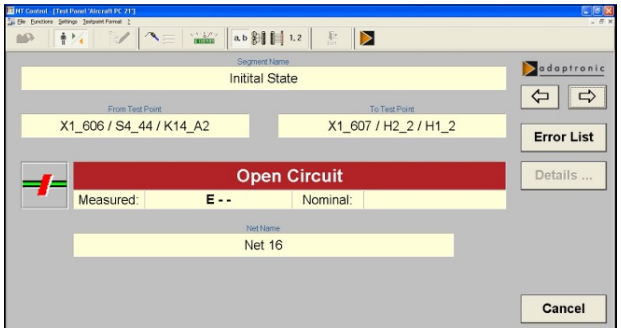
- Customer specific adapter test point interfaces
- Intelligent adapter cables (IAC) for the random assignment of adapter cables
- Import / interpreter solutions for existing files in other standard
- UNICAD-Importer: automated  test data import from CAD-data or Excel
- Integrated multimeter

Pin probe

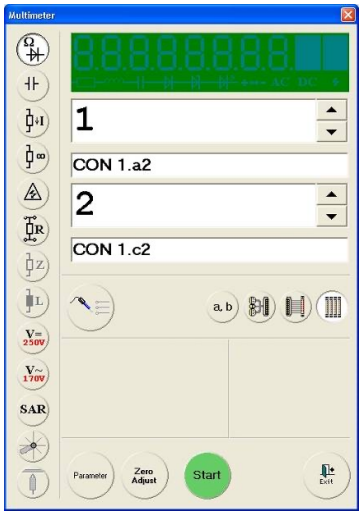



Single error display




Multimeter function



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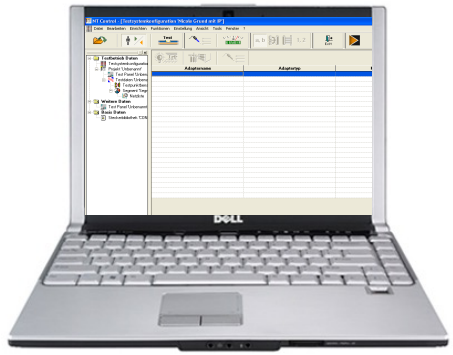
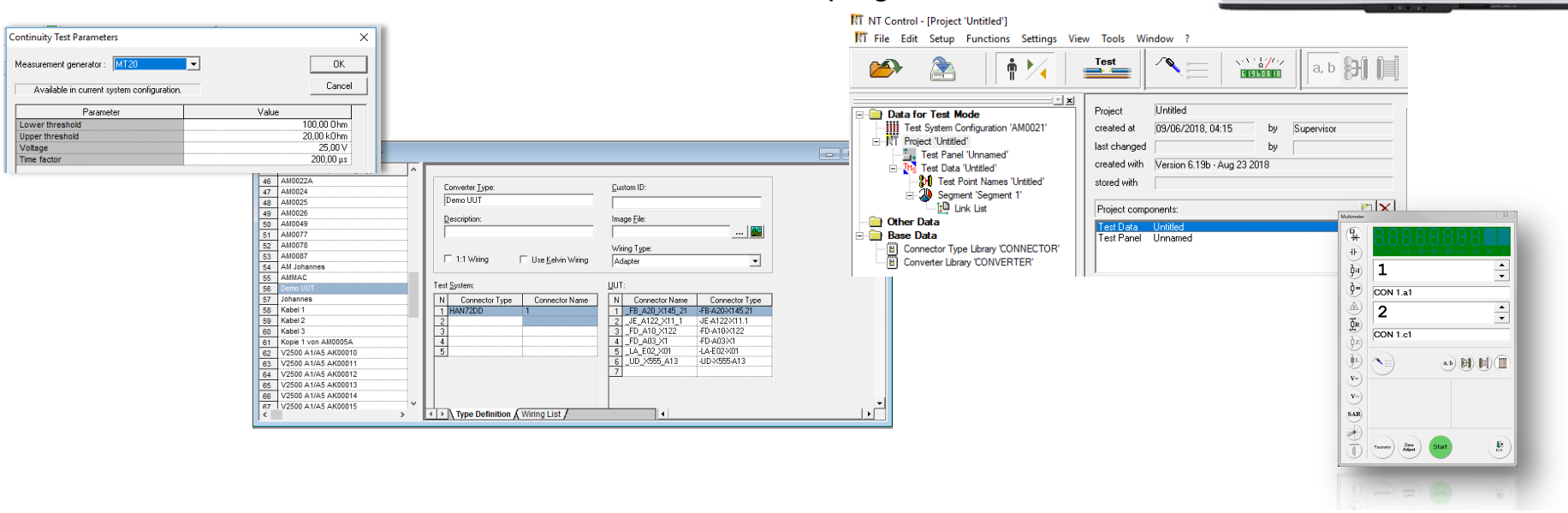
- NT Control has to be installed on an external computer
- NT Control is an application running under Windows® and represents the interface between the operator and the hardware of the test system
- NT Control is a graphic display, which allows easily to create test data. It can be switched between program and test mode
- NT Control can also be used as an offline editor for test programs





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# Software

UNICAD

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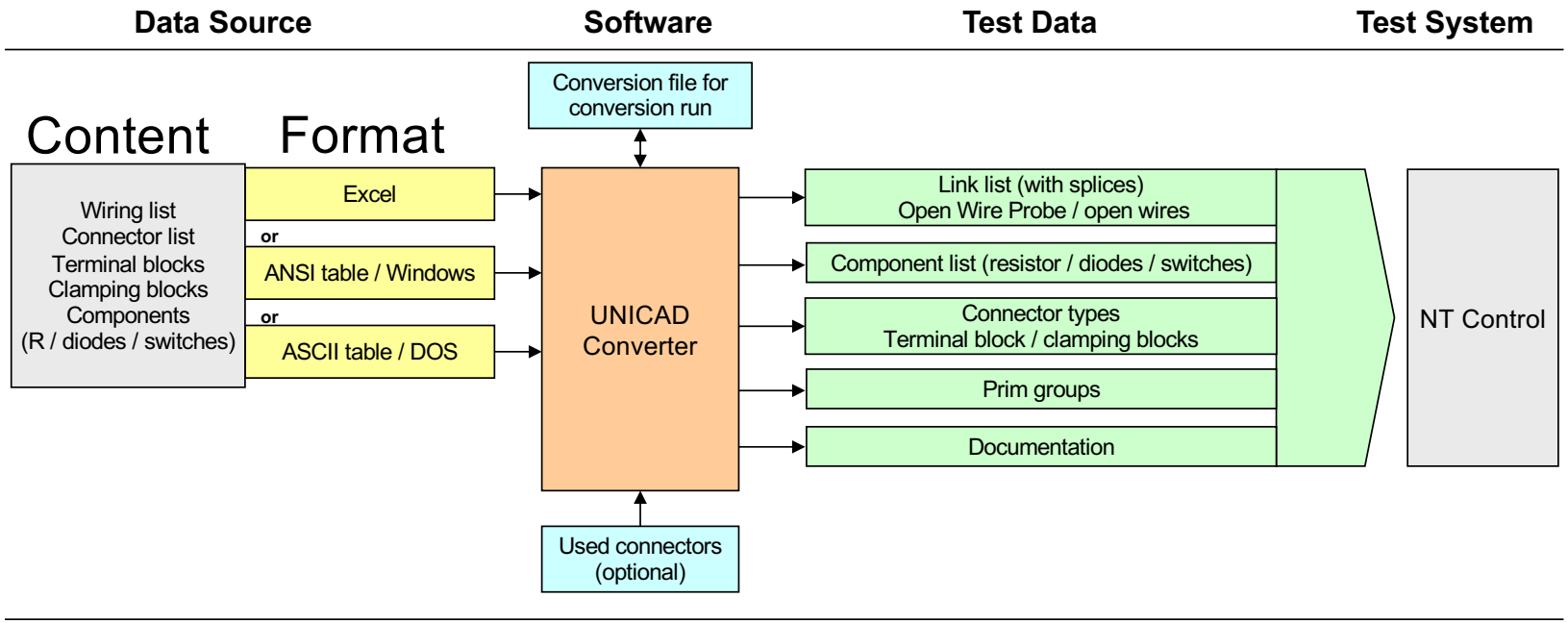
- UNICAD is to be used for the conversion of customer specific wiring lists.
- UNICAD is a stand-alone software
- Data can automatically converted into test data for test programs



# Options

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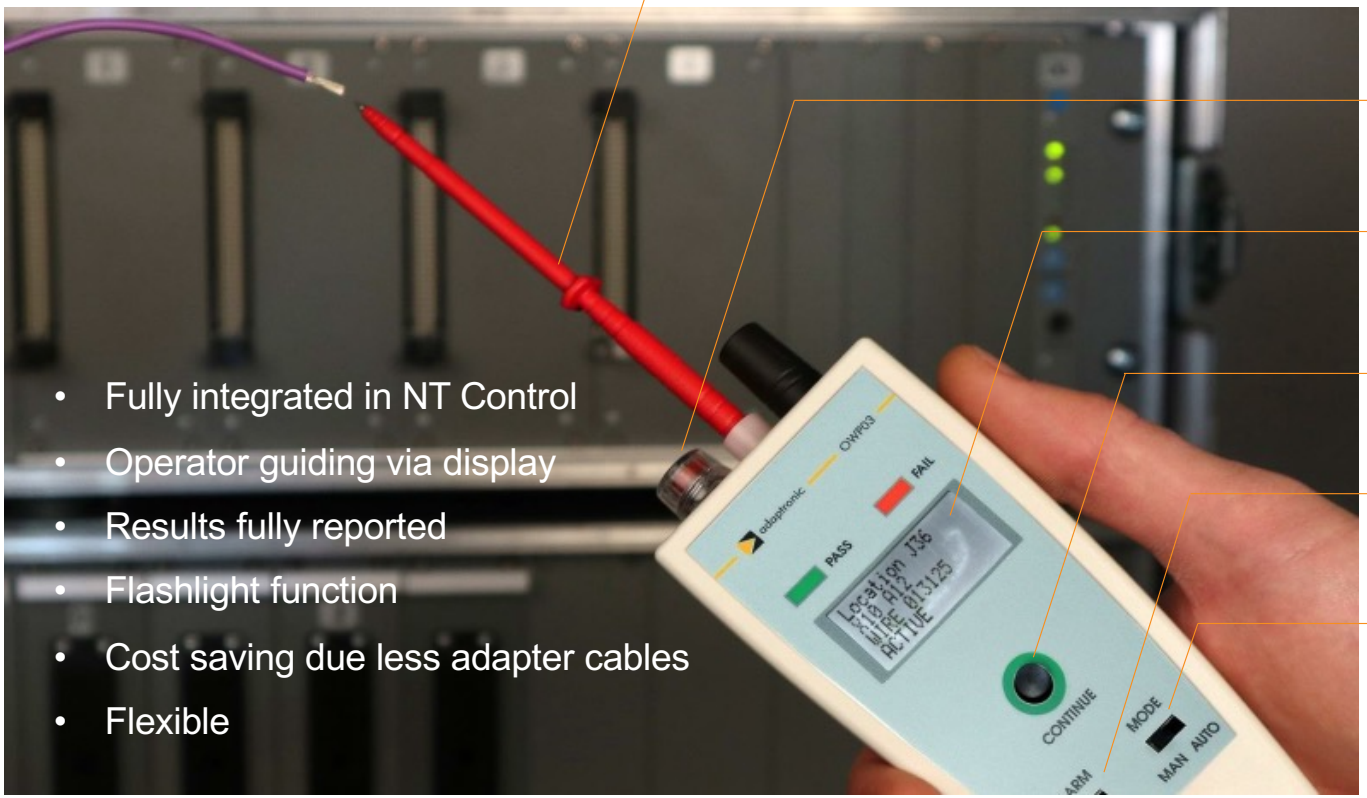
## Open Wire Probe




- Fully integrated in NT Control
- Operator guiding via display
- Results fully reported
- Flashlight function
- Cost saving due less adapter cables
- Flexible

Exchangeable test tip

Fuse

LCD color display

Continue push button

Acoustical mode

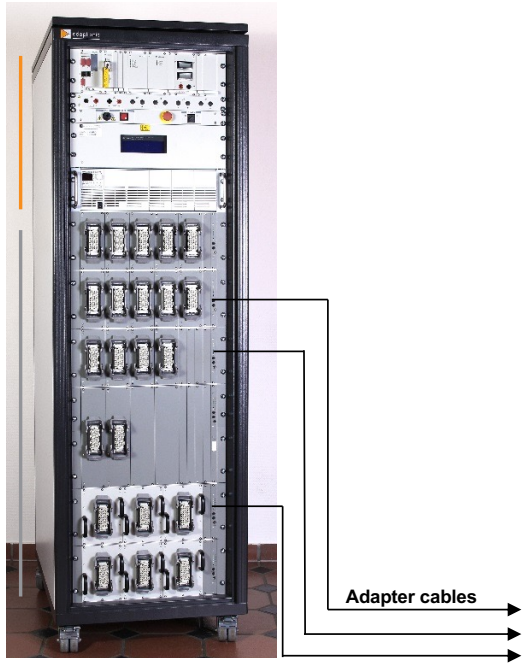
Mode switch (manual / auto)

## Functional Tests

### Tester NT 600 or NT 700

**Control Rack**
- CPU
- Measurement Units
- Stimulus source(s)
- Interfaces

**Test Points**
- Normal test points
- Functional test points
- HV Test points

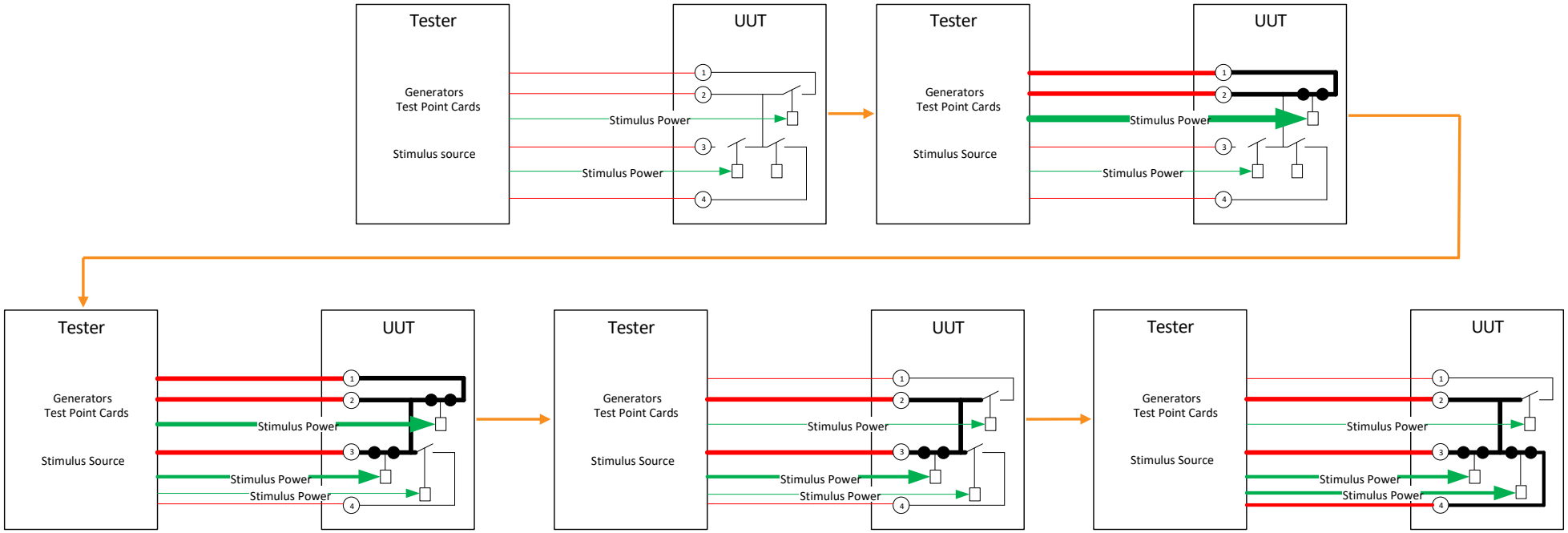



### Unit Under Test (UUT)



Functional Testing is used to test switching cabinets, control cabinets, etc.
The tester is stimulating relays, fans, lights, switches to activate them.
The testing steps are integrated in NT Control.
This allows a complete and reported test of the cabinets / components.

## Functional Tests
Example:



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