Guide to OmegaPAT/GT XA

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METREL®

Distributor:

Manufacturer:
METREL d.d.
Ljubljanska cesta 77
1354 Horjul
Slovenia

web site: http://www.metrel.si
e-mail: metrel@metrel.si

CE Mark on your equipment certifies that this equipment meets the requirements of the EU (European Union) concerning safety and electromagnetic compatibility regulations.

Contents

1. Setting of instrument before testing

This document is intended to inform the user about possible ways of using the instrument for the testing purposes (different workflows “test modes” are explained in details).

Before start using the specific test mode, the instruments behaviour, during the procedure and at the end of it, can be set. The behaviour of the instrument can be set using following settings.

- Setup of user account
- Sign In
- Auto Sequence ® test mode
- Auto Sequence ® flow
- Display of test result
- Behaviour of specific element parameters
- Setup of writing devices
- Setup of reading devices

1.1. Setup of user account

The demand to sign in can prevent from unauthorized persons to work with the instrument.
In this menu user accounts can be managed:

- Setting if signing in to work with the instrument is required or not.
- Adding and deleting new users, setting their user names and passwords.

The user accounts can be managed by the administrator.
Factory set administrator password: ADMIN

It is recommended to change factory set administrator password after first use. If the custom password, is forgotten the second administrator password can be used. This password which is provided at a delivery of the instrument always unlocks the Account manager, therefore it shell be kept on a safe place.

If a user account is set and the user is signed in the user's name will be stored in memory for each measurement. Individual users can change their passwords.

Figure 1.1.1_User accounts

1.1.1. **Sign In**

Sign in to the instrument is the first option available. If a user account is set and the user is signed in the user's information will be stored in memory for each measurement. This feature is crucial for traceability of the taken measurements.

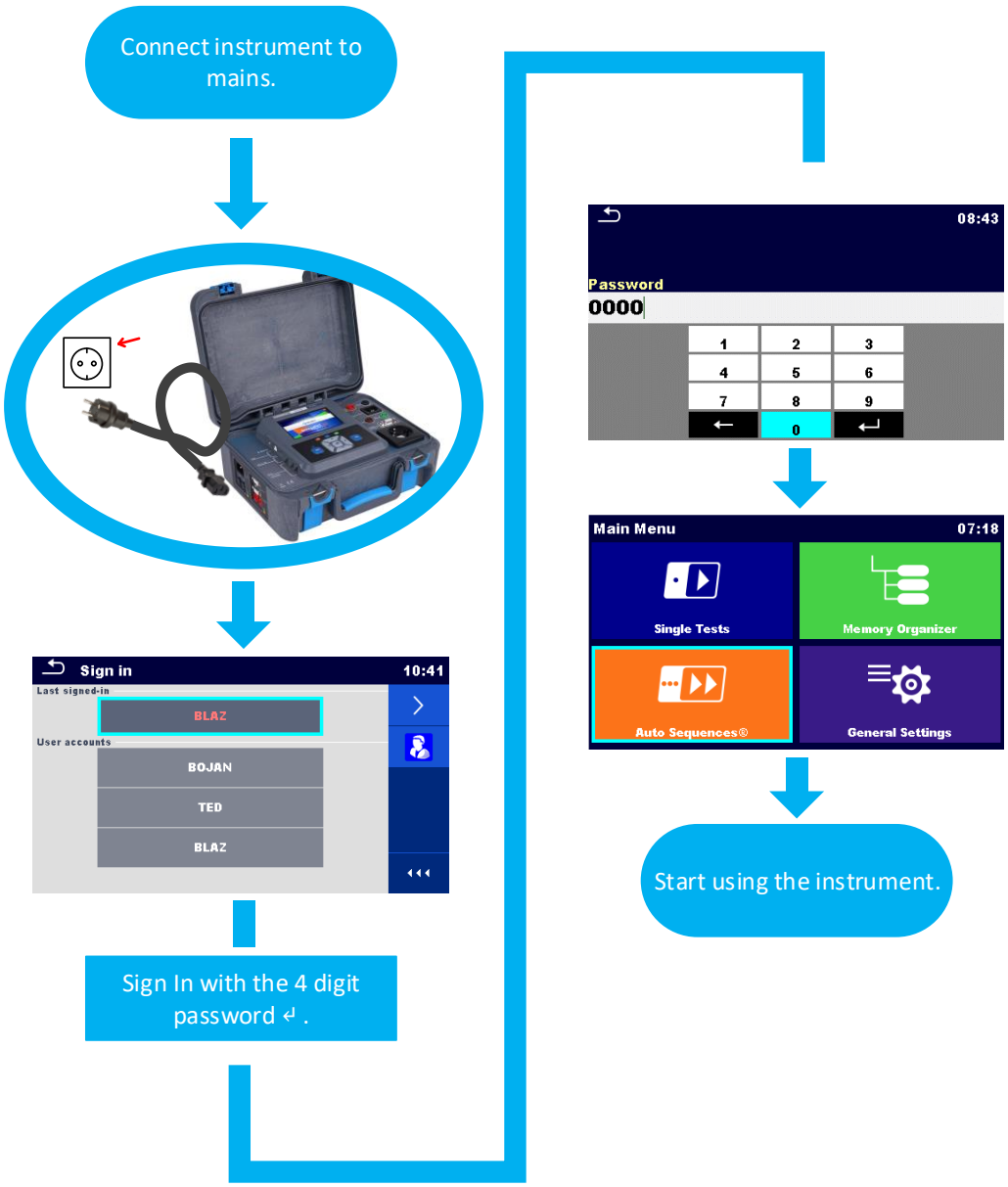


Figure 1.1.1.1_Sign In

1.2. Behaviour of the instrument

Prior to the execution of test sequence, the user can choose between following options: flow of the test sequence, test mode, display of test results. Each of this settings will have a significant role in the test procedure.

1.2.1. Auto Sequence ® test mode

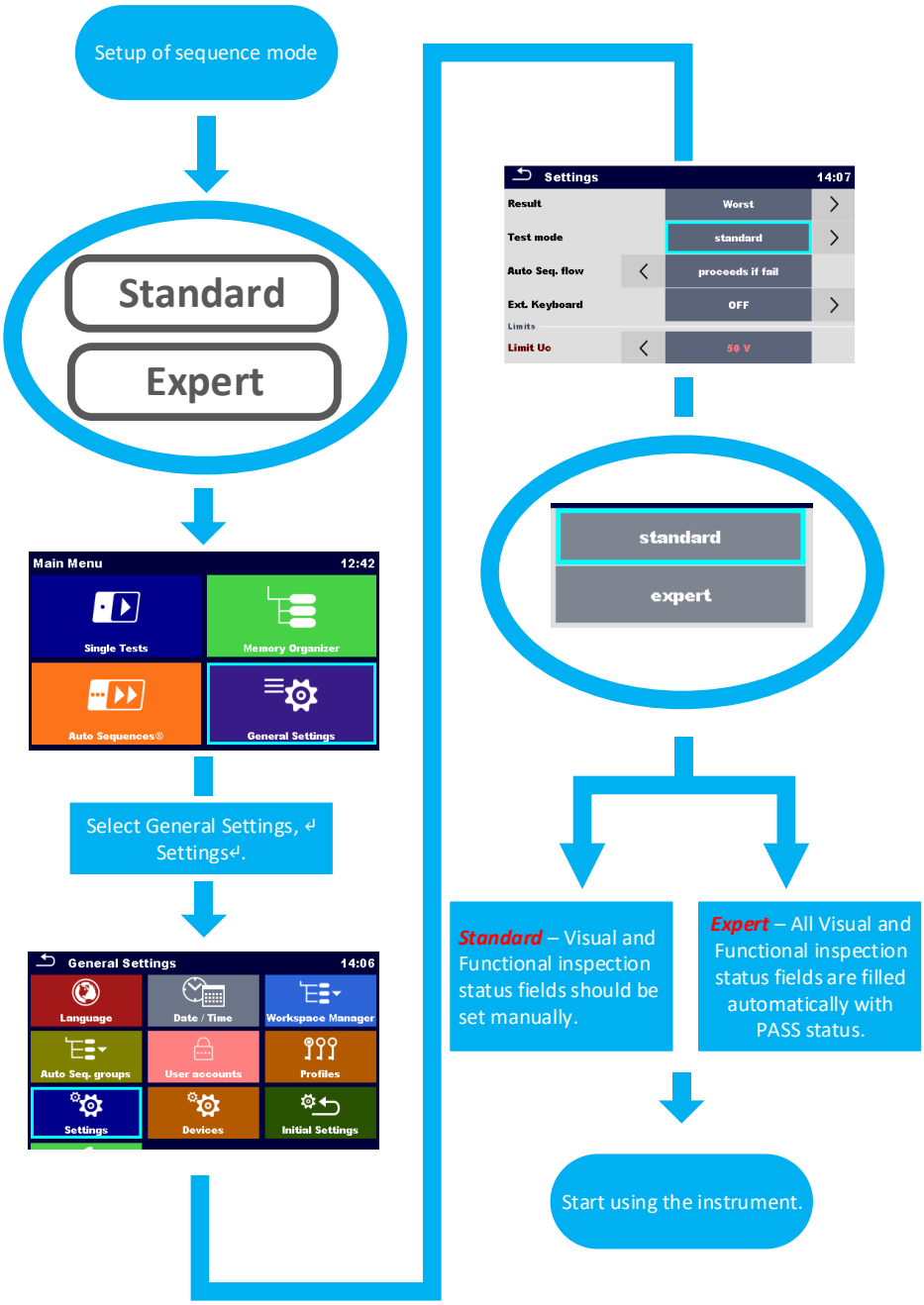


Figure 1.2.1.1_Auto Sequence® test mode

1.2.2. Auto Sequence ® flow

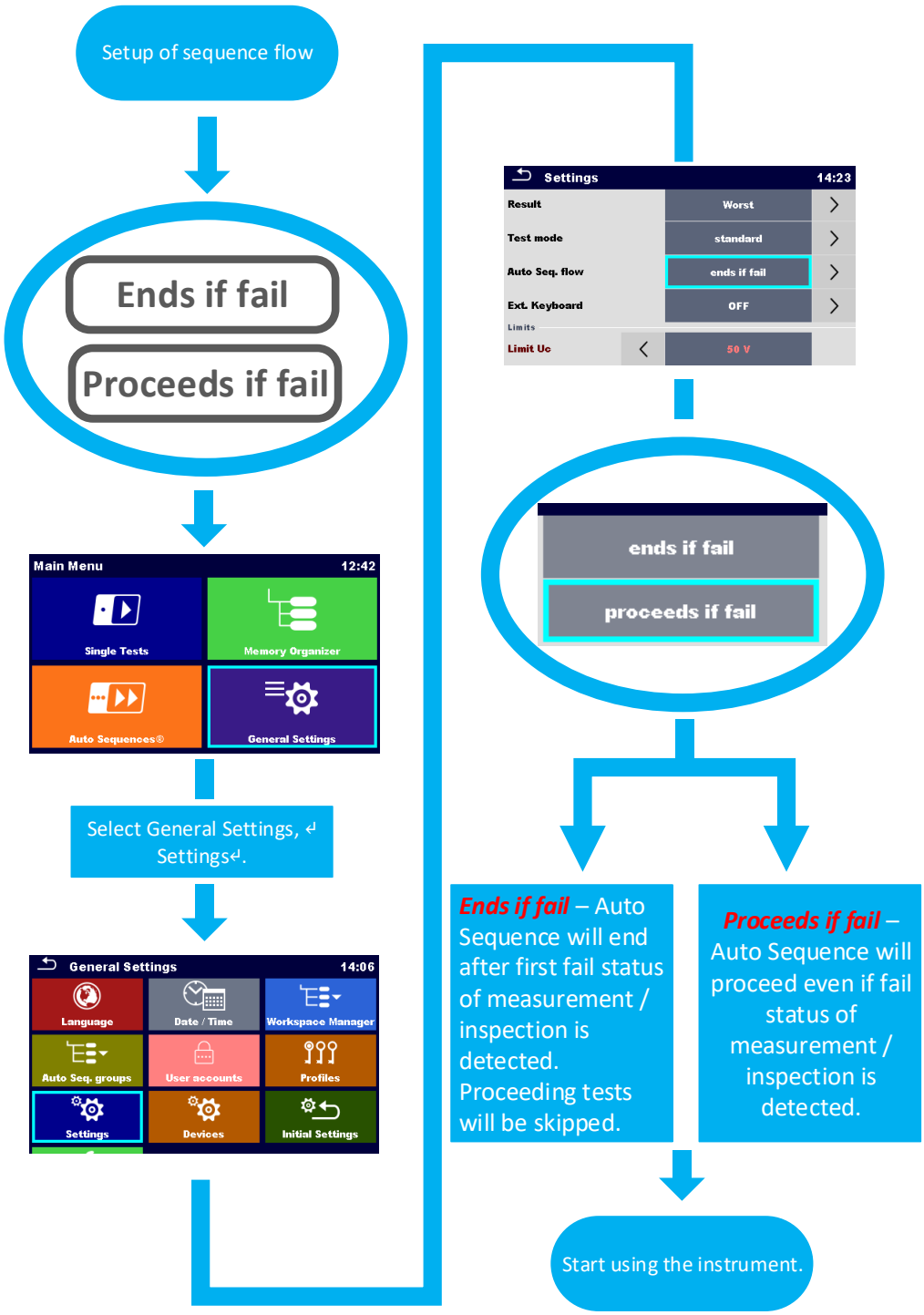


Figure 1.2.2.1_Auto Sequence ® flow

1.2.3. Display of test result

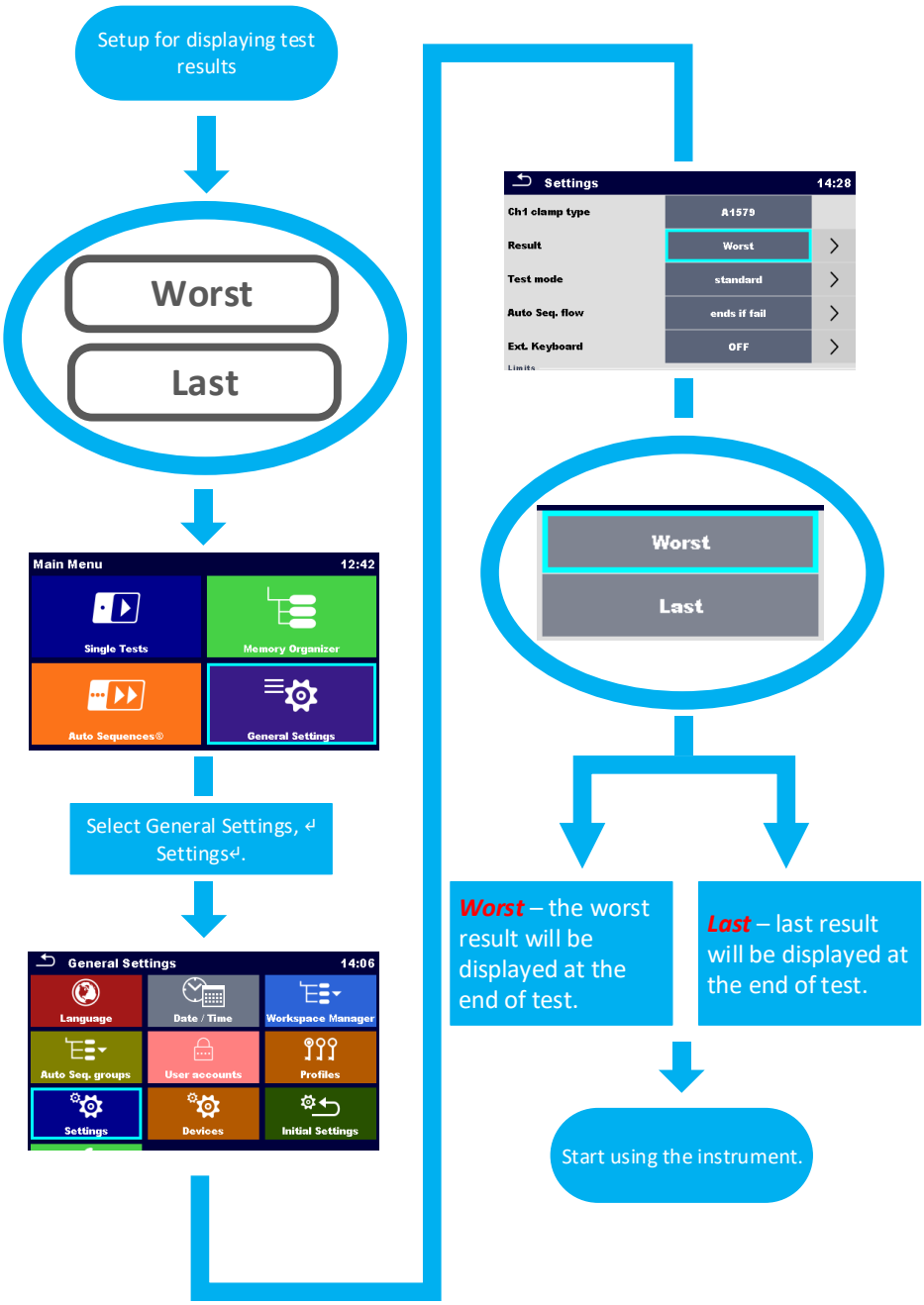


Figure 1.2.3.1_Display of test result

1.3. Behaviour of specific element parameters

In addition to instruments behaviour at execution of the test sequence, the user can also set rules for behaviour of specific structure element parameters.

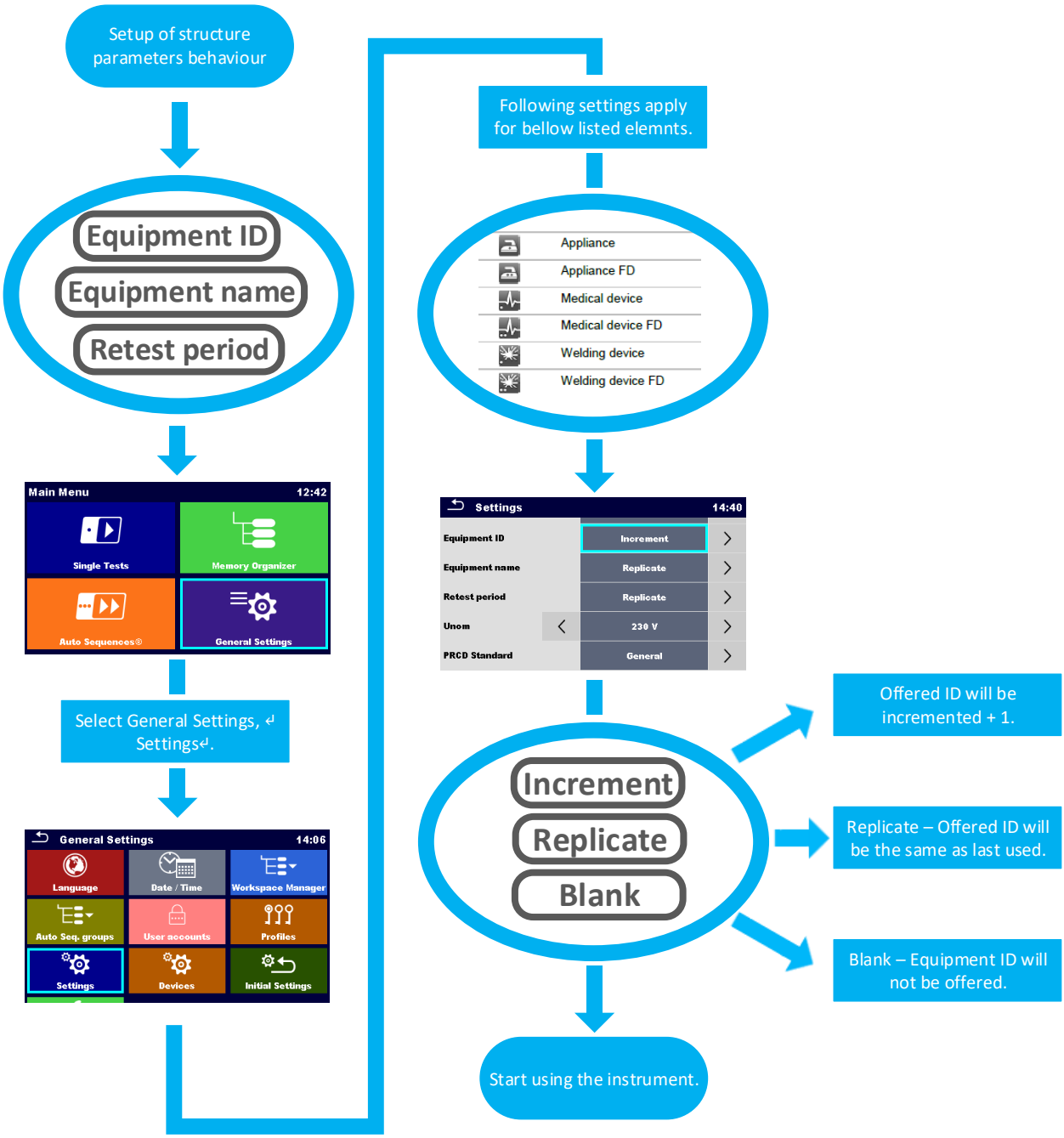


Figure 1.3.1_behaviour of structure element

1.4. Selection of peripheral devices

The instrument can be used as a standalone unit or in combination with different peripheral devices, which are enabling, entering of data into structure parameters or writing/printing the data to external media (NFC tags or different labels). Selection of peripheral devices and how the instrument will behave when specific devices are selected is explained bellow.

1.4.1. Setup of writing devices

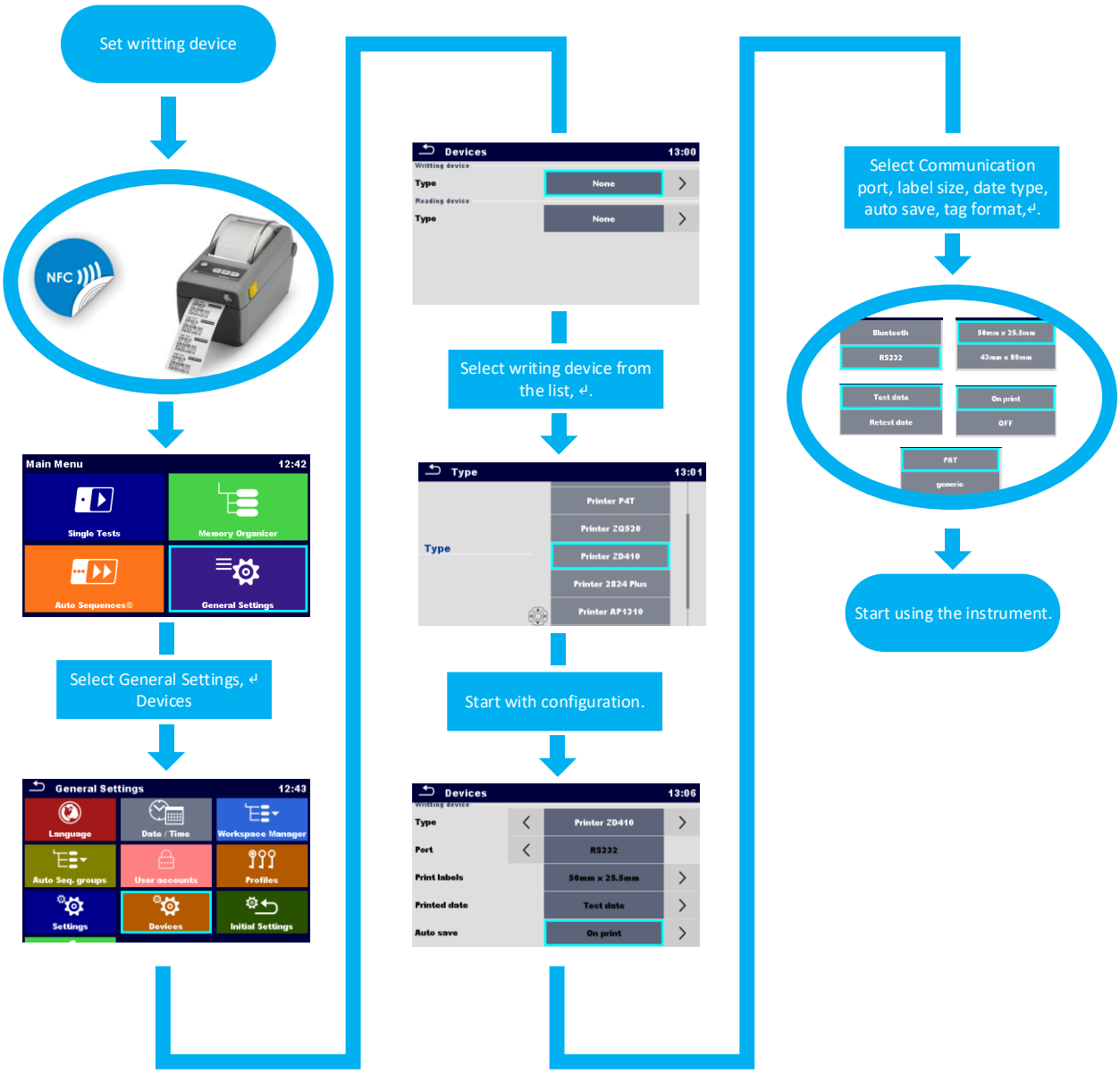


Figure 1.4.1.1_setup of writing devices

1.4.2. Setup of reading devices

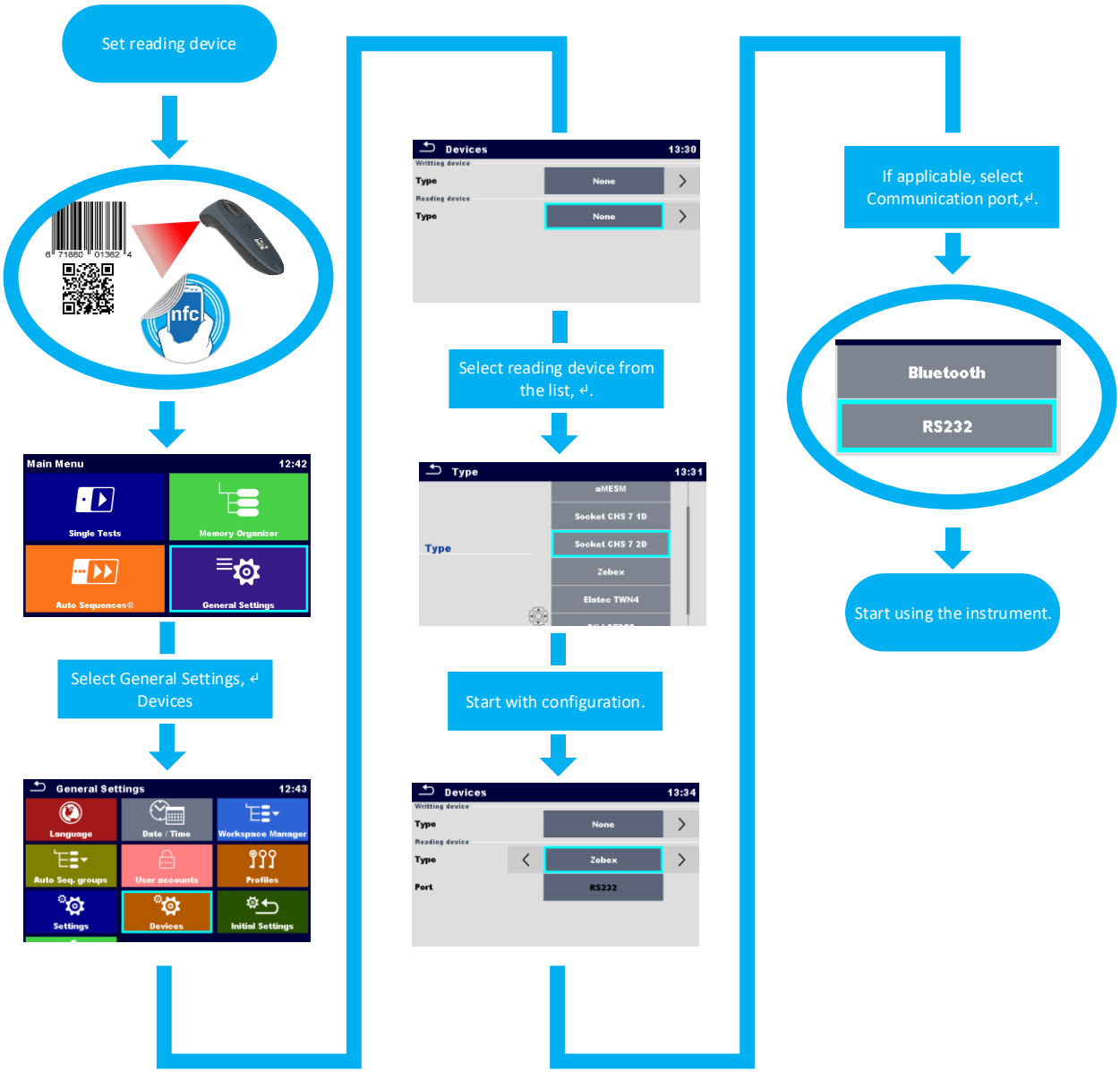


Figure 1.4.2.1_setup of reading devices

1.4.3. Setup of external Keyboard

Note!
No other available, wired reading devices can be used, when A 1578 External RS232/USB adapter is connected.

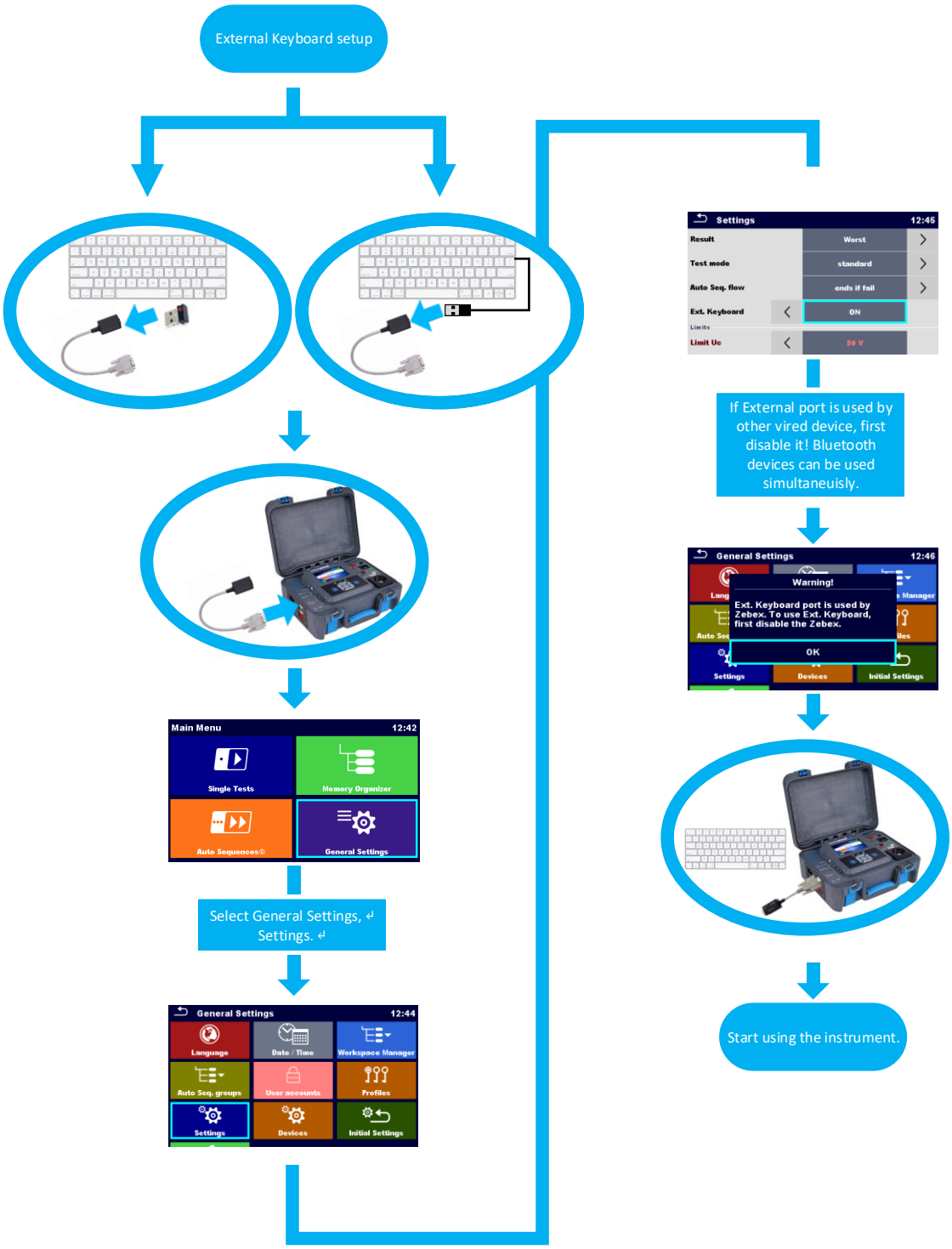


Figure 1.4.3.1_External keyboard setup

2. Features of Auto Sequence® menu

The Auto Sequences menu is intended primarily for users who use already known working procedures on the field (pre-prepared Auto Sequences) and want to be as effective as possible. The speed of execution of the Auto Sequences comes to great expression in this way of work.

Working with this mode, the user gets the ability to create an Auto Sequences, which can be partly or fully automated. By switching on, flow commands the whole test sequence necessary for checking the safety of portable appliance can be manually or automatically executed, this includes storing of data in the memory structure and print out of the test sticker (PASS / FAIL) by single press of the Run key.

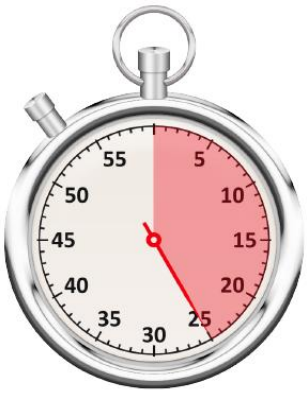


Figure 2.1_Saving time by use of Auto Sequences

In the ***AutoSeqvence®*** menu, the user can select from a number of pre-set Auto Sequences which were developed by Metrel, based on the known standards for portable electrical appliances.

There are few typical standards designed for testing of portable electrical equipment:

- Testing of electrical portable appliances, including special sequences for testing of PRCD devices, according to:
  - VDE 0701-0702,
  - Code of practice,
  - AS/NZS 3760,
- Testing of welding equipment, according to IEC/EN 60974-4,
- Testing of medical equipment, according to IEC/EN 62353.

For advanced users, Metrel has developed a special Auto Sequence editor which is a part of the PRO software package MESM. This module enables the creation of user defined Auto Sequences, with arbitrary workflow, and predefined limits.

2.1. Auto Sequence Search function

In Auto Sequence® menu it is possible to search for Auto Sequences® on base of their Name or Short code.

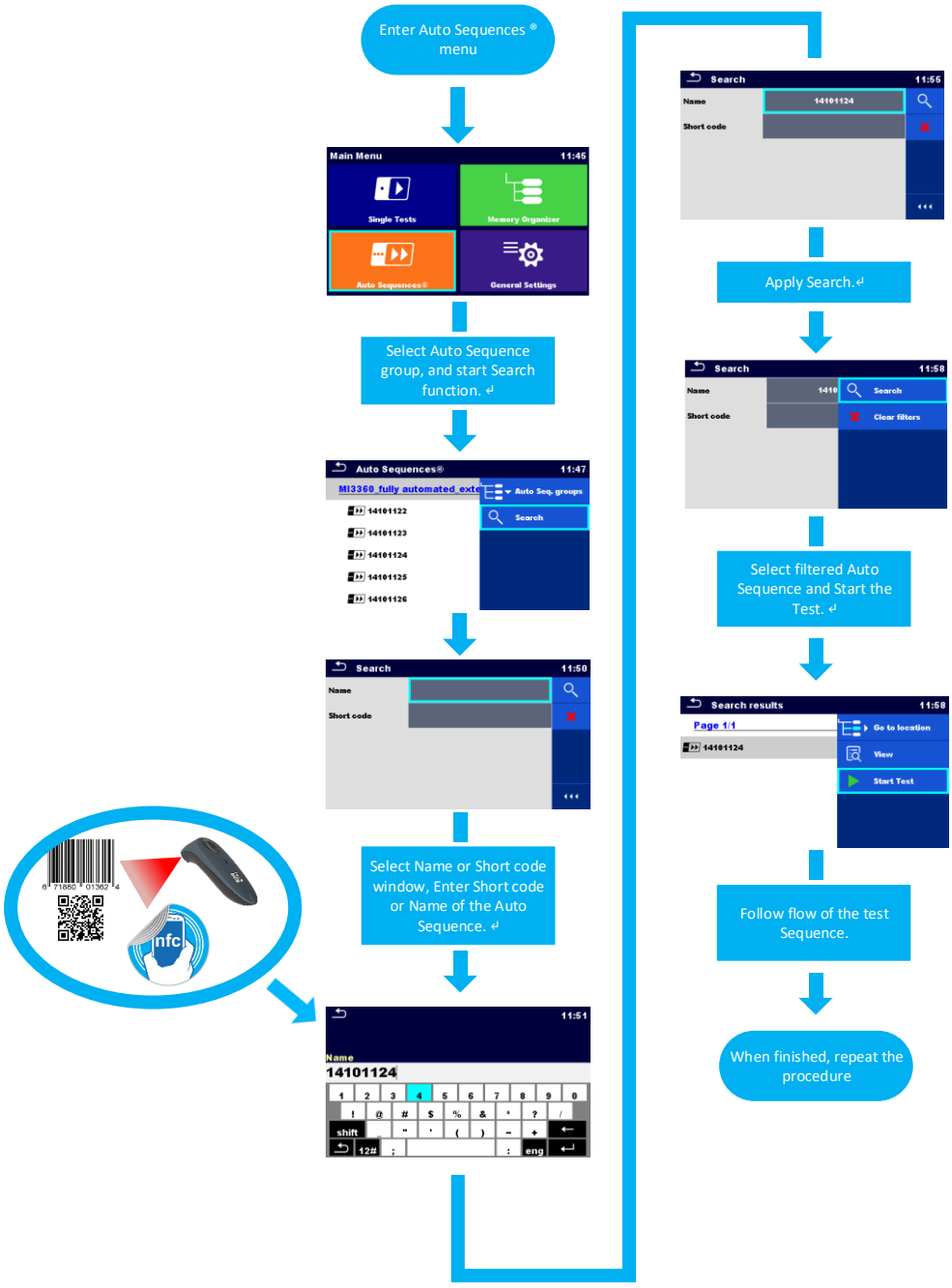


Figure 2.1.1_Searh for Auto Sequences

2.2. Solution for multiple point testing

Prior to the start of the desired test sequence instrument enables an option of multiple test point selection for any available single test step. This option is specially designed for testing of appliances at which multiple test points needs to be examined, (extension leads with multiple test sockets, portable distribution boards at construction sites, etc.).

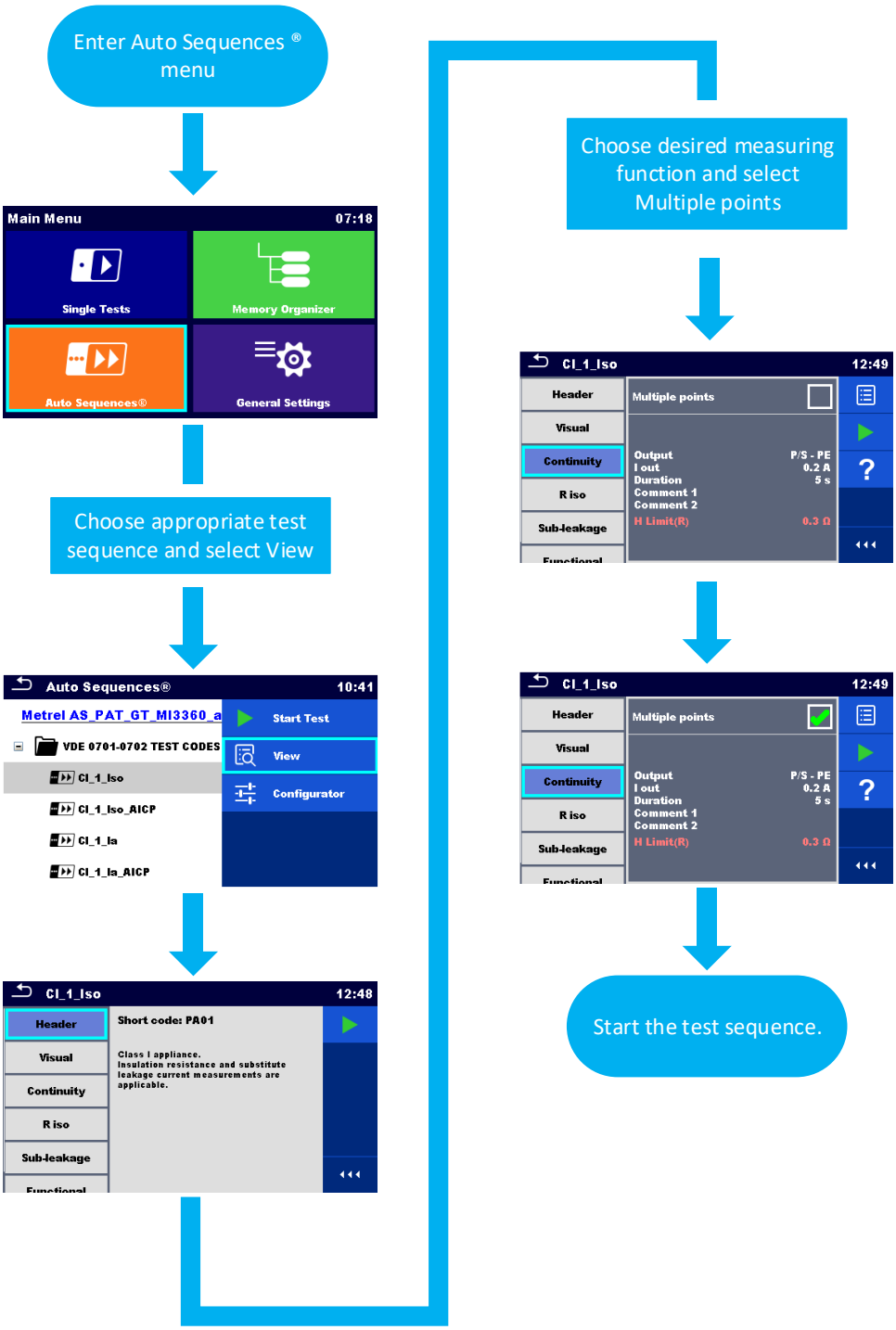


Figure 2.2.1_Setting of multiple test points

2.3. Earth bond calculator

Prior to the start of the desired test sequence instrument enables an option for quick selection of the correct limit at the Earth bond test. This option was integrated to help the user define correct limit based on the, length and the cross section of measured cable, or by selecting the limit from the list of pre-set limits according to VDE standard. This function brings most benefit for users who are testing lots of different extension leads or other appliances using longer supply cords.

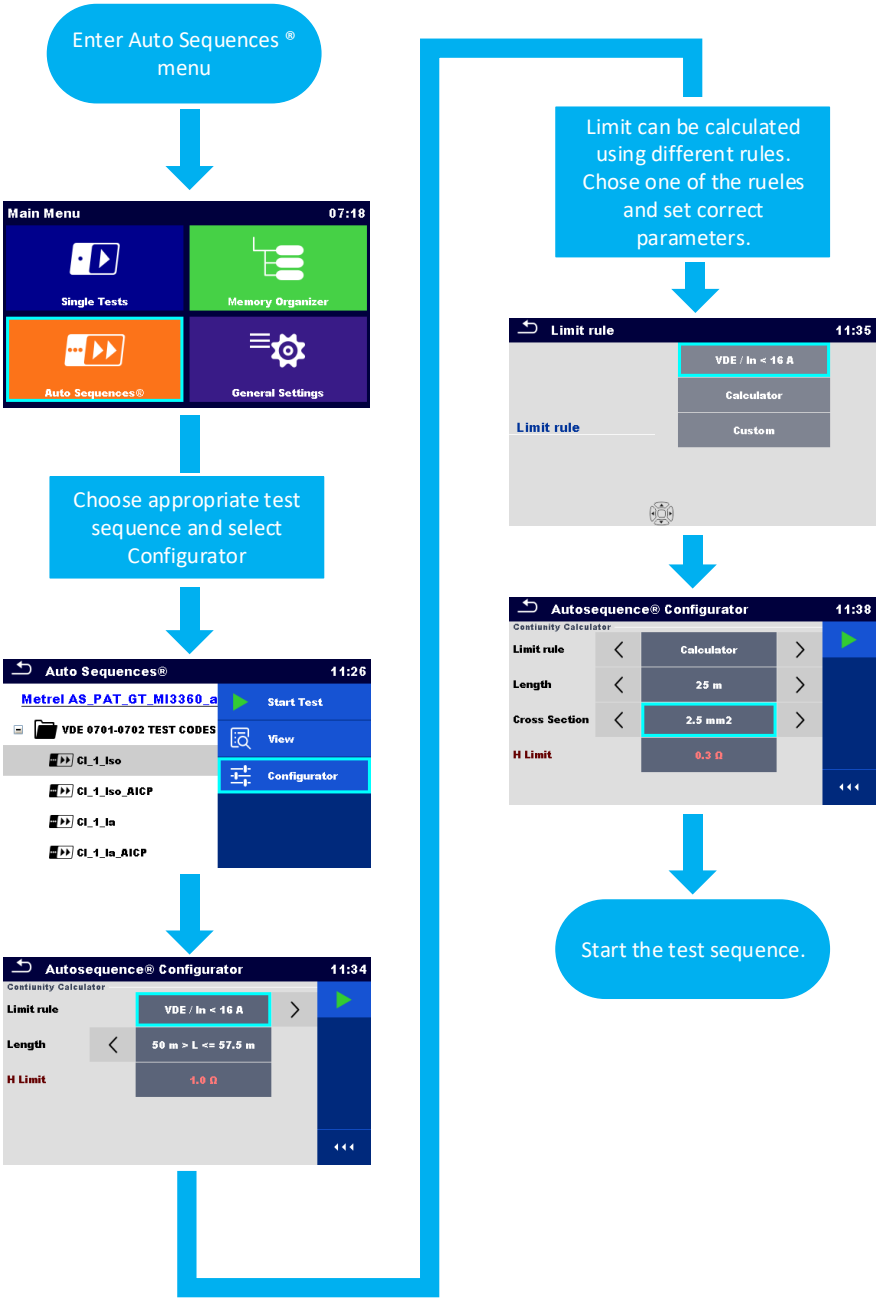


Figure 2.3.1_Setting of limit for EB test using EB calculator

3. Different test modes available

The OmegaPAT/GT instrument is a universal instrument enabling the user to choose between several available test modes, depending on the nature of the work, experiences of the user and desired speed for execution of test sequence.

The user can set the instrument to following modes:

I. Manual (flow) mode,
II. Semi-automated (flow) mode,
III. Semi-automated (flow) mode with Auto-save on print,
IV. Fully-automated (flow) mode (Auto Sequence® editor must be used).

Execution of the tests can be performed from two menus:

- Auto Sequences®
- Memory Organizer

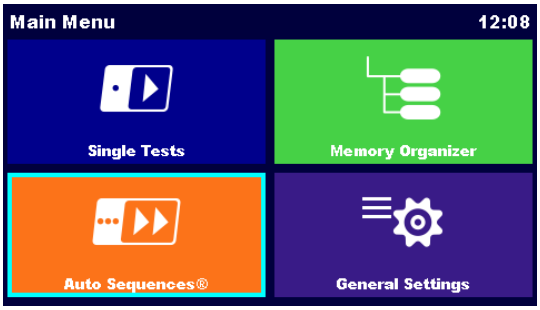


Figure 3.1_Instruments main menu

3.1. Test mode I. Manual mode from Start to the end of test sequence.

Instruments parameters are set as follows:

- Equipment ID (Increment, Replicate, **Blank**),
- Equipment name (Replicate, **Blank**),
- Retest period (Replicate, **Blank**),
- Result (**Worst** or Last),
- Test mode (**Standard**, Expert),
- Auto Seq. flow (**Ends if fail** or Proceeds if fail),
- Writing devices (**None**),
- Reading device (**None**).

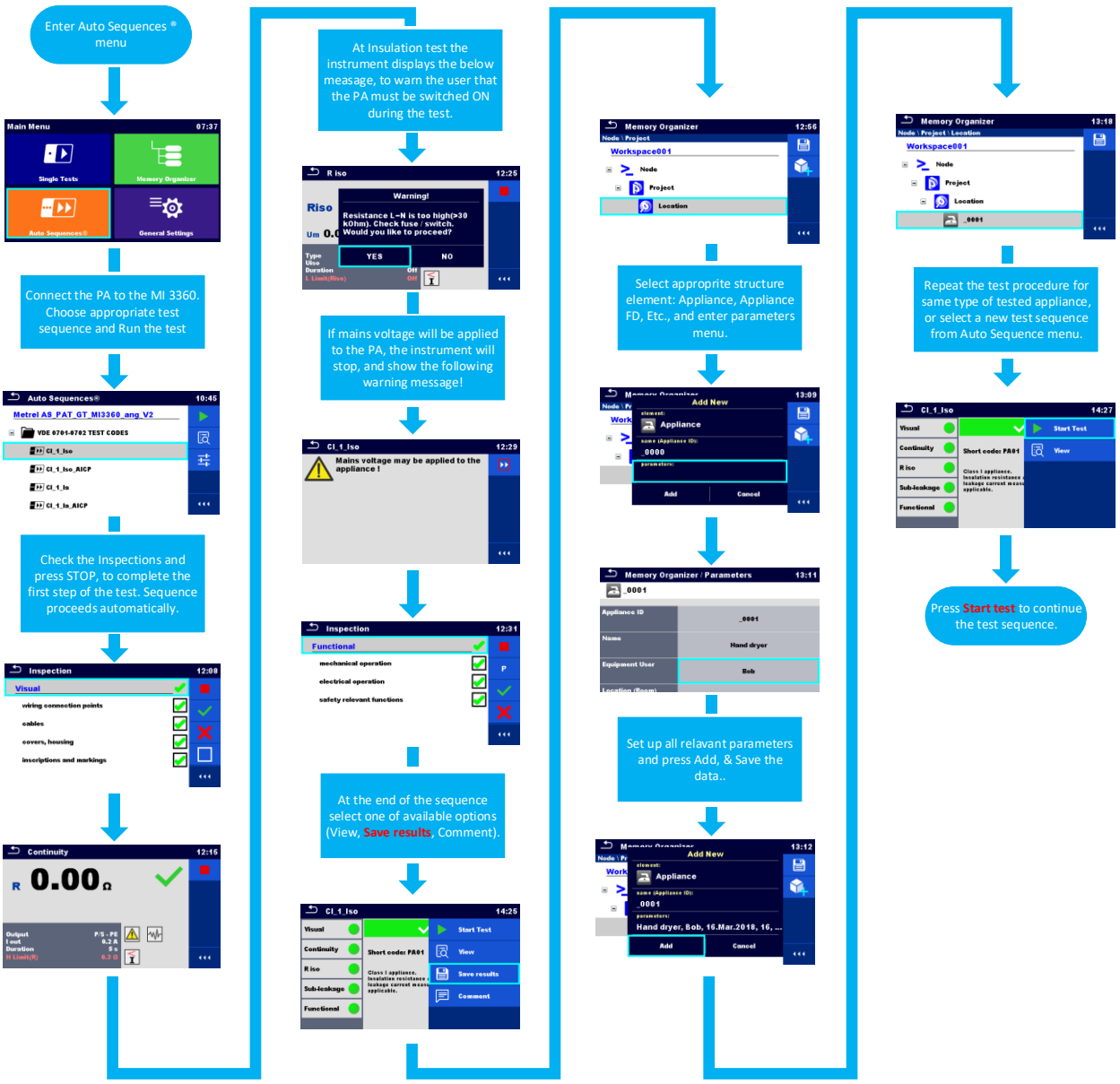


Figure 3.1.1_Manual test mode I.

3.2. Test mode II. Semi-automated mode of the test sequence.

Instruments parameters are set as follows:

- Equipment ID (**Increment**, Replicate, Blank),
- Equipment name (**Replicate**, Blank),
- Retest period (**Replicate**, Blank),
- Result (**Worst** or Last),
- Test mode (Standard, **Expert**),
- Auto Seq. flow (**Ends if fail** or Proceeds if fail),
- Writing devices (**None**),
- Reading device (**None**).

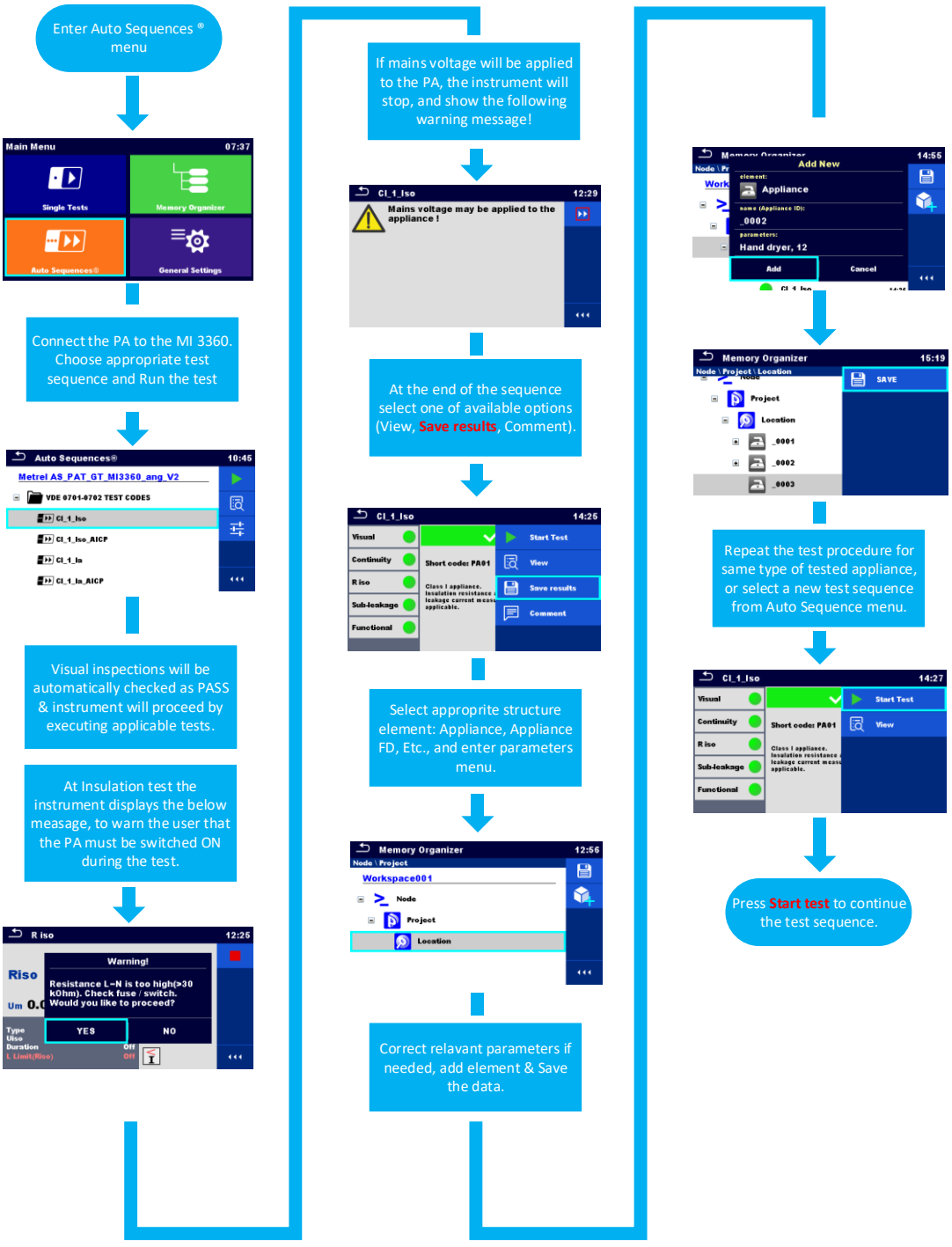


Figure 3.2.1_Semi-automated test mode II

3.3. Test mode III. Semi-automated mode of the test sequence + reading & writing devices enabled.

Instruments parameters are set as follows:

- Equipment ID (**Increment**, Replicate, Blank),
- Equipment name (**Replicate**, Blank),
- Retest period (**Replicate**, Blank),
- Result (**Worst** or Last),
- Test mode (Standard, **Expert**),
- Auto Seq. flow (**Ends if fail** or Proceeds if fail),
- Writing devices (**Zebra ZD410**) **+** Auto Save (**On print**),
- Reading device (**Zebex barcode scanner**).

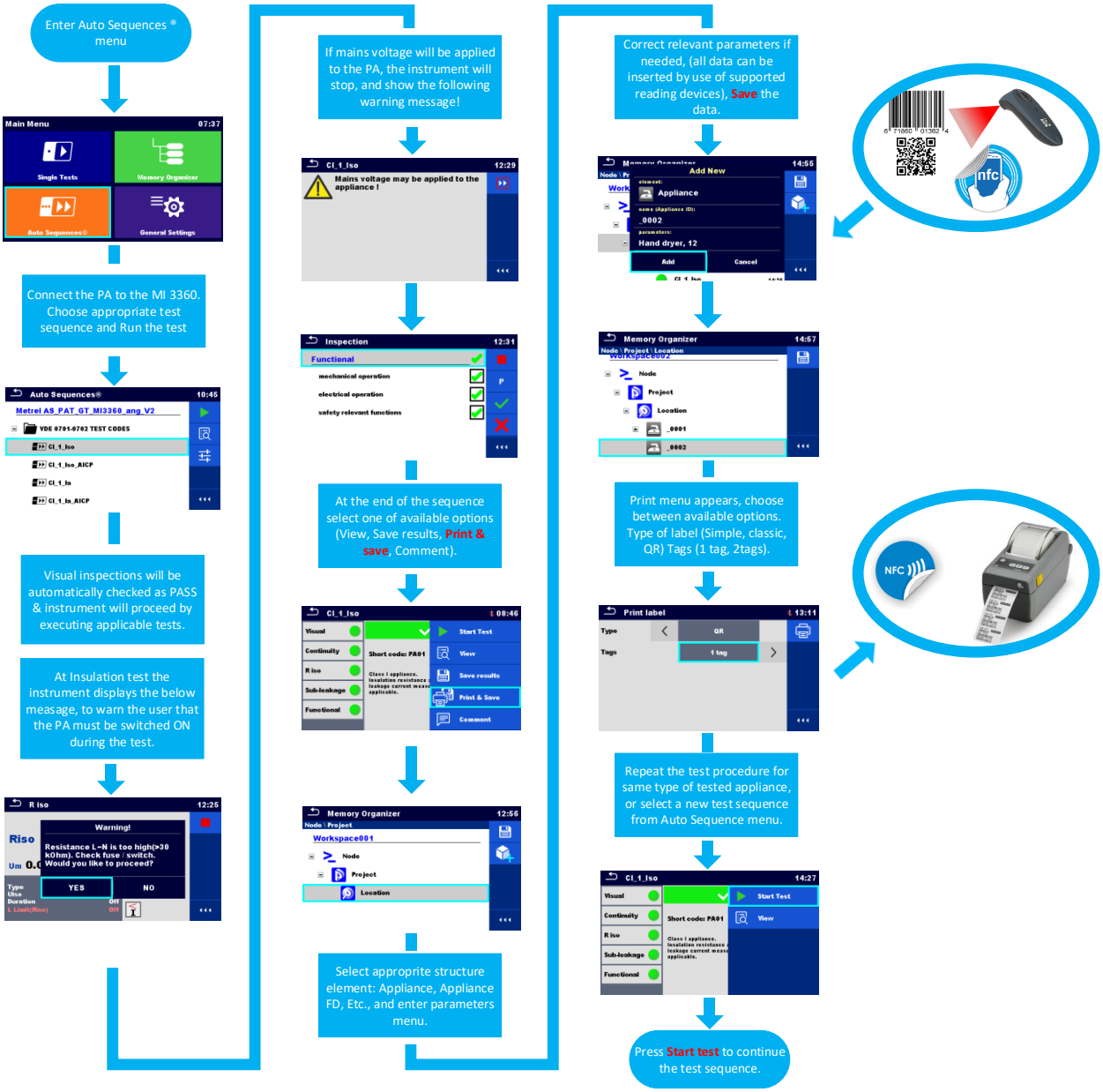


Figure 3.3.1_Semi-automated test mode III + reading & writing devices

3.4. Fully-automated (flow) mode (Auto Sequence® editor must be used).

MESM SW enables the user to create custom Auto Sequences®, for this purpose Metrel has developed special Auto Sequence editor which is a part of PRO MESM SW package.

Note!
Detailed description of Auto Sequence® editor is explained in the user manual of the instrument. Below is given an explanation for few main features which will enable Fully-automated flow of the presented test sequence.

Demo test sequence
Note!
For this presentation purpose we will create a demo sequence for testing of extension cord, no "live/hot" tests will be included in this sequence, therefore it is no need to integrate special steps for warnings and pauses prior to execution of "live/hot" test.
When creating test sequences including ("live/hot") tests make sure that the pause, and warning are integrated prior to such measurements.

Flow of the demo test sequence will be determined by use of following flow commands, and operations after end of the test.

Appliance info (flow command) enables:
- Automatic generation of selected structure element (Appliance, Appliance FD, Medical Eq., …);
- Behaviour of structure element data (Increment or repeat);
- Entering of the Default Appliance ID;
- Entering of the Default Appliance name (including option for editing);
- Entering of the default Retest period (including option for editing)

In the following example, parameters will be set as follows:
- Repeat settings (**Repeat**, Increment)
- Appliance type (**Appliance**, Appliance_FD, Medical equip., Medical equip._FD, Welding equip., Welding equip._FD)
- Default Appliance ID (**Blank**)
- Appliance name (**Blank**) → **Editable option enabled**
- Retest period in months (**12**) → **Editable option enabled**

Programming of Auto Sequence ®
Start MESM → Auto Sequence® Editor

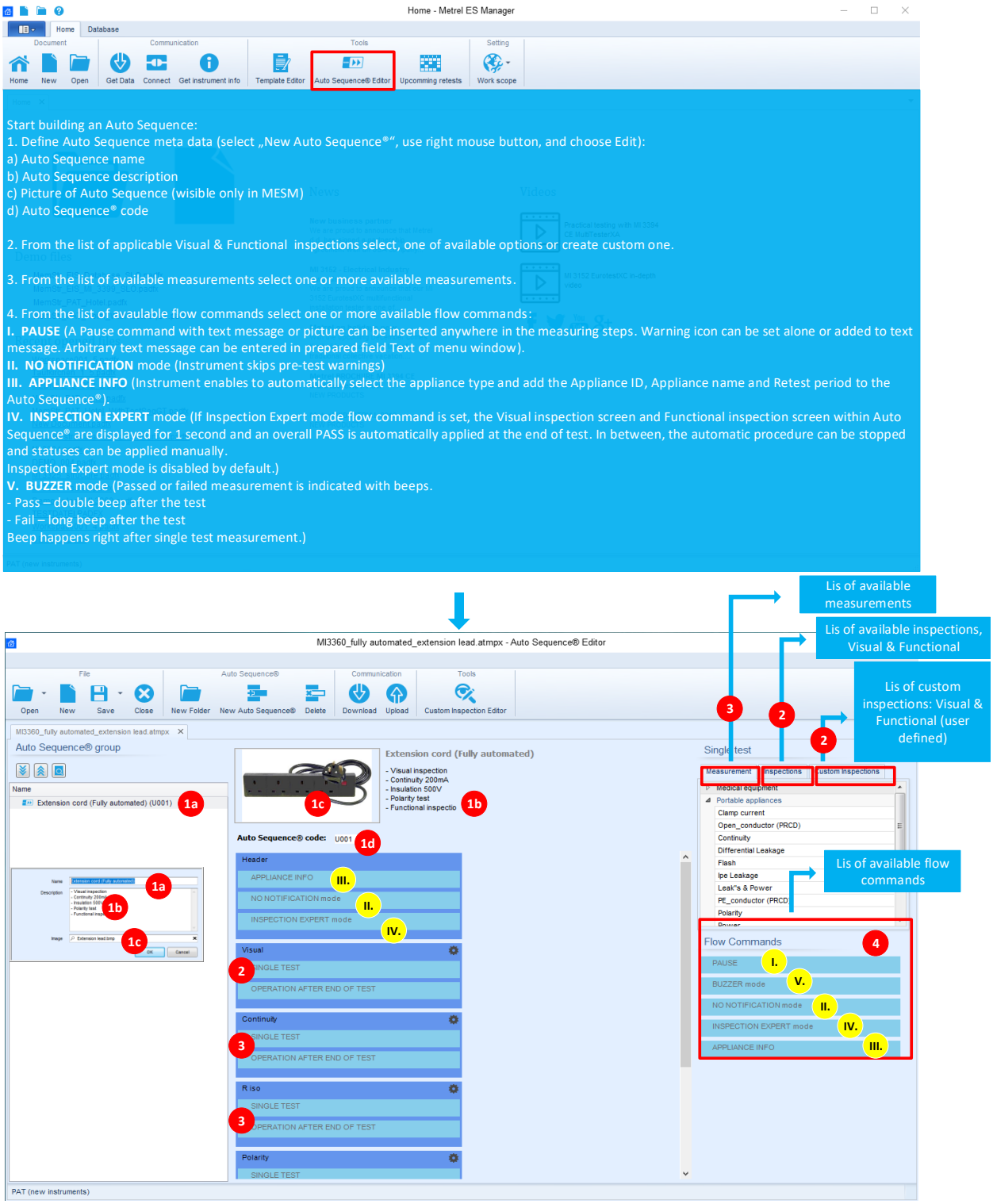


Figure 3.4.1_Auto Sequence editor_01

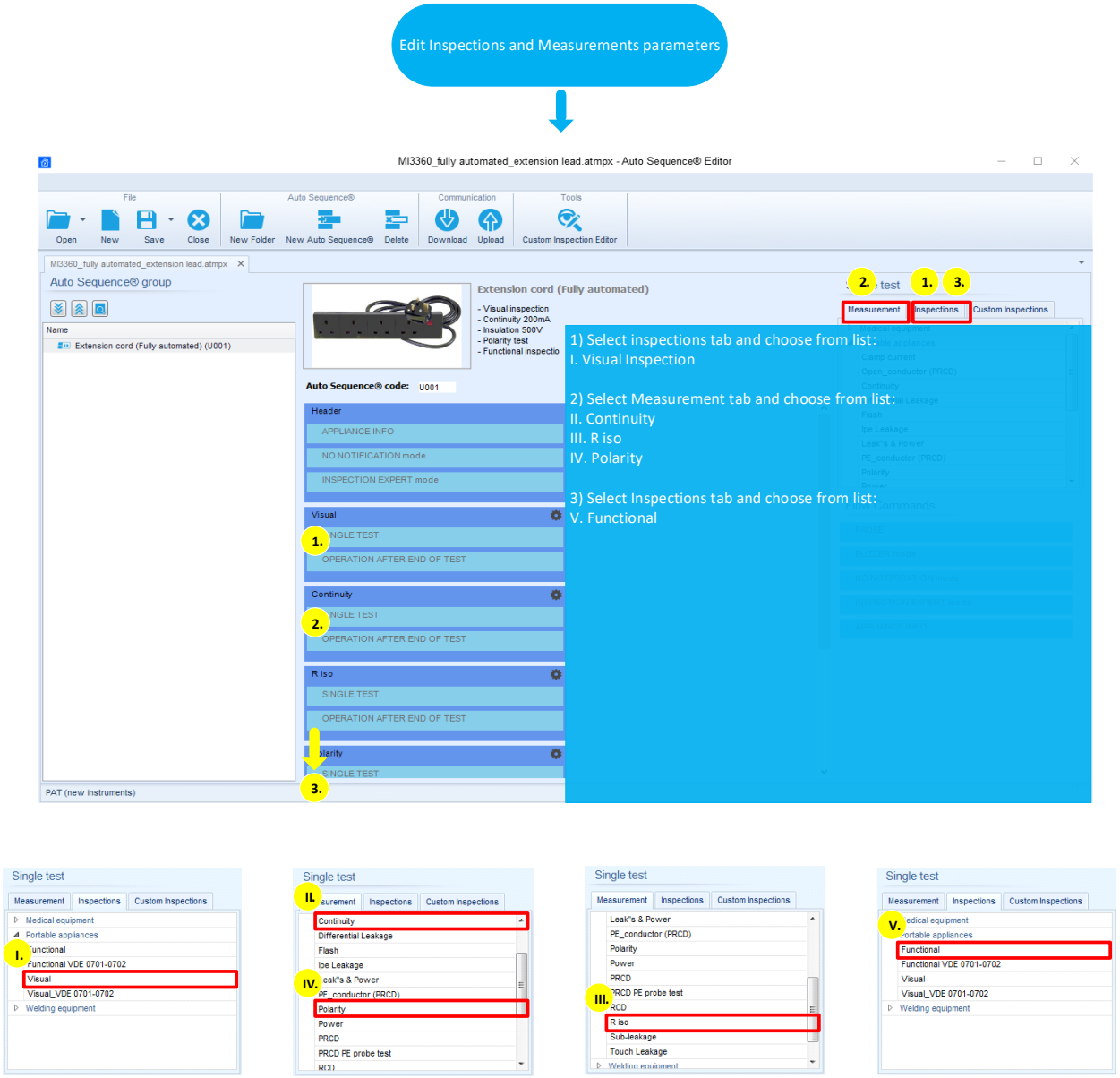


Figure 3.4.2_Auto Sequence editor_02

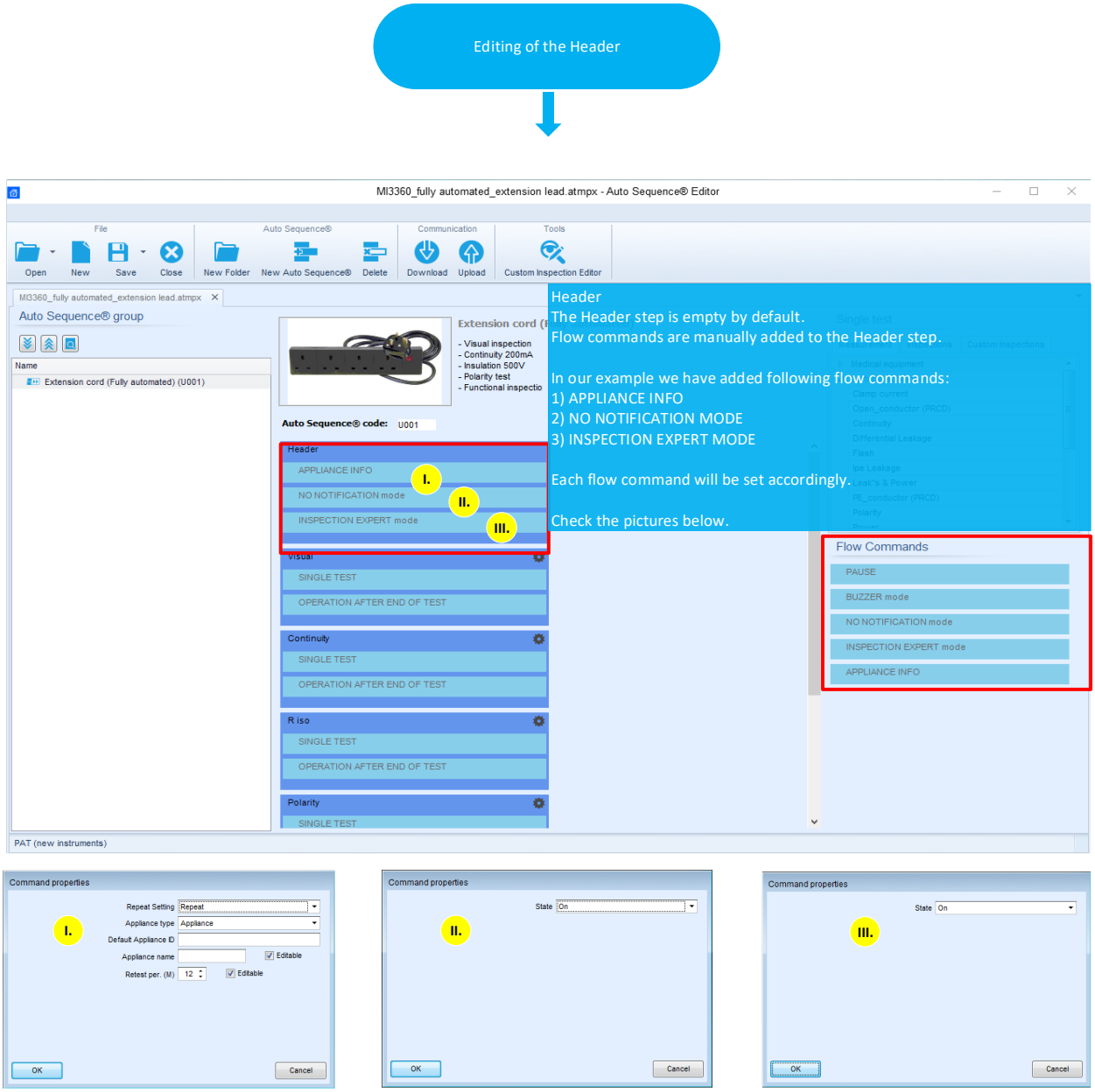


Figure 3.4.3_Auto Sequence editor_03

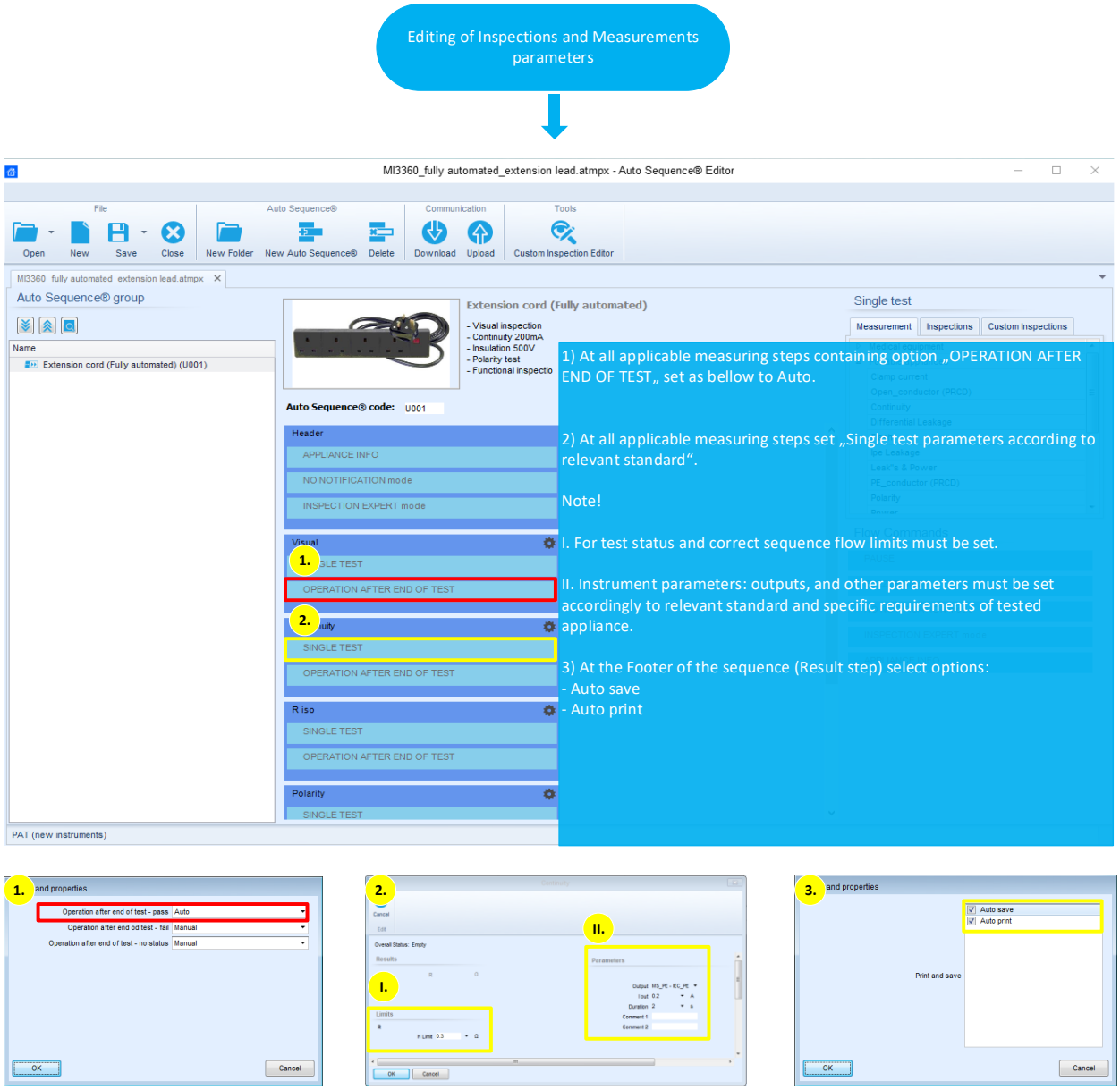


Figure 3.4.4_Auto Sequence editor_04

Auto Sequence parameters

After successful creation of the test sequence, upload it to the instrument using the upload function. Select and open the new test sequence from the Auto Sequence menu, and check parameters.

Numbers (1a, 1b, 1d, 3) referring to: Figure 3.4.1_Auto Sequence editor_01.

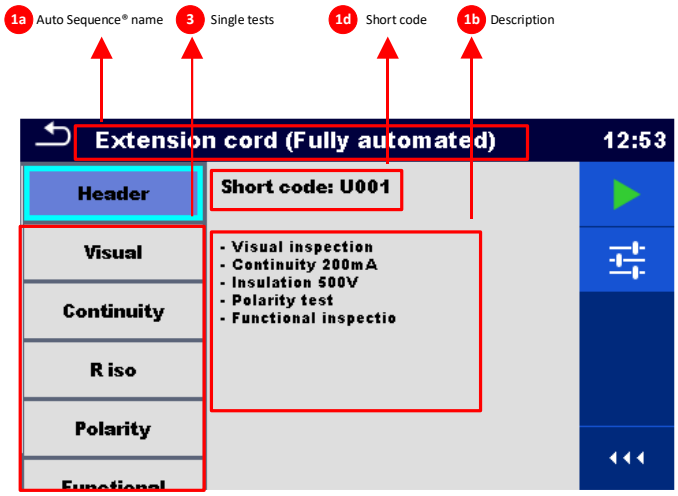


Figure 3.4.5_Auto Sequence® view menu

3.5. Test mode IV. Fully-automated mode

Instruments parameters are set as follows:

- Result (**Worst** or Last),
- Auto Seq. flow (**Ends if fail** or Proceeds if fail),
- Writing devices (**Zebra ZD410**),
- Reading device (**Zebex barcode scanner**).

Note!
Following parameters are adopted from the Auto Sequence® settings

- Equipment ID (**Increment**, Replicate, Blank),
- Equipment name (**Replicate**, Blank),
- Retest period (**Replicate**, Blank),
- Test mode (Standard, **Expert**),
- **Auto save** + **Auto print.**

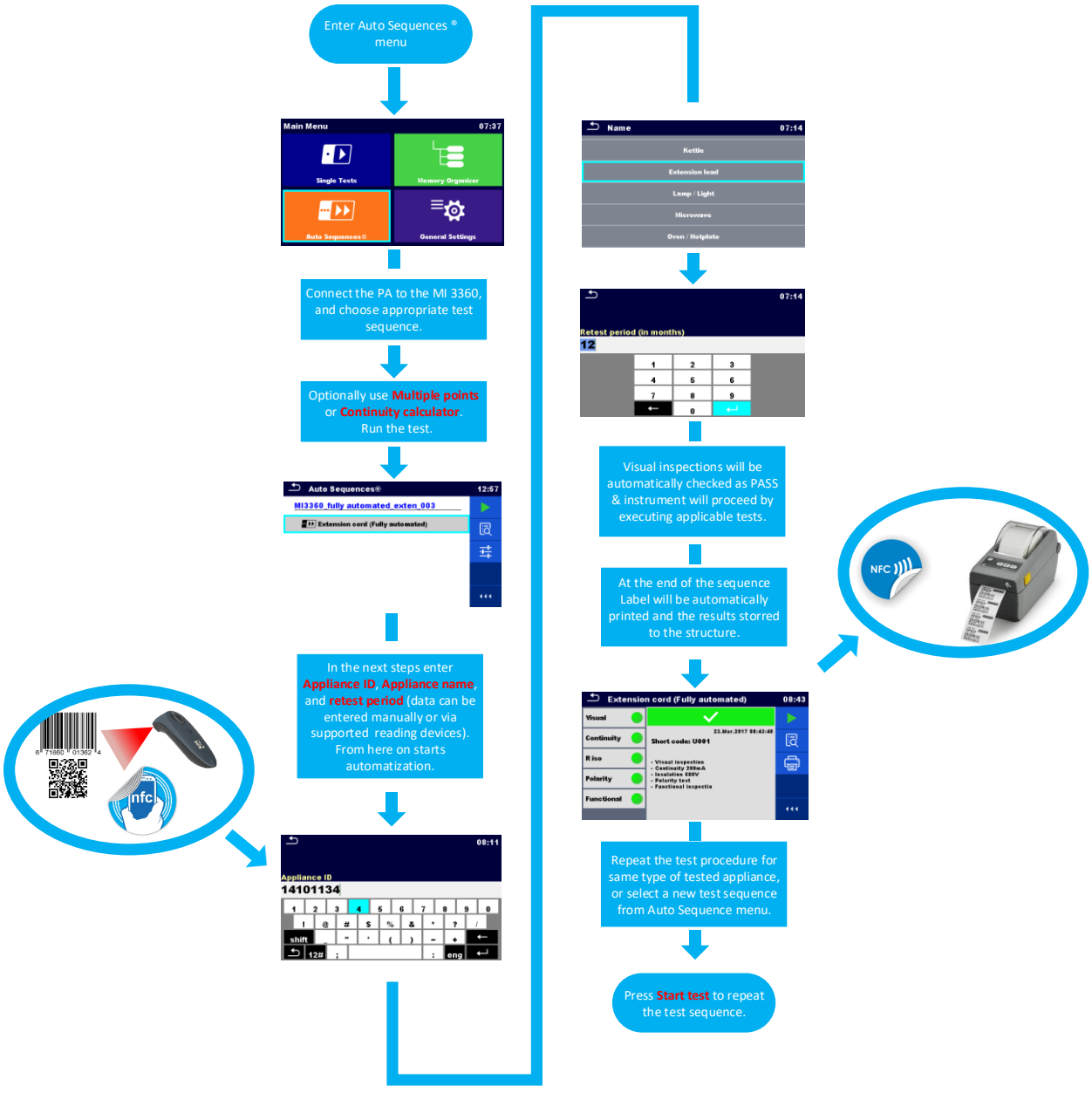


Figure 3.5.1_Fully-automated test mode IV + reading & writing devices

4. Explanation of memory organizer

Essentially the mode of operation through the memory organizer is intended for users who need tested devices, well documented, or users who perform periodic tests based on data from previously performed measurements.

MESM software includes a special module (Upcoming retests) which enables an overview of devices that need to be tested over a specific time period.
With the help of MESM SW, the user can create a structure including devices that need to be retested and upload it to the instrument.

Given the fact that the instrument has a sufficient memory capacity, we have enabled the users to search and filter the memory structure also within the memory organizer on the instrument itself. The search function allows you to search for devices by:

- Name / Equipment ID,
- Test status,
- Test date,
- Re-test date.

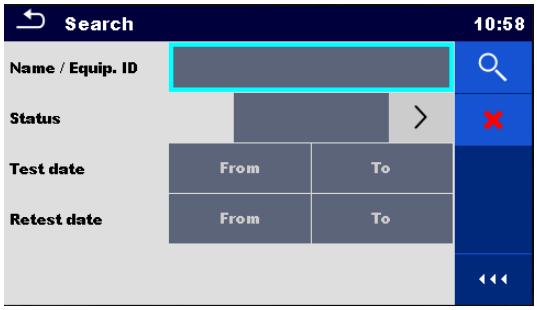


Figure 4.1_Search menu

Memory organizer enables the user to prepare his, test plan before leaving the office. This can be achieved by preparing the test structure, using MESM SW running on a personal computer in the office, using aMESM (android applications) on the field, or even by creating it on the instrument itself.

A pre-set structure for data storage may also include a set of necessary measurements for checking of the safety of electrical portable devices.
Measurements defined under the specific structure element can be used as a single test steps or they can be grouped into an auto sequence (with this option we come closer to the mode of operation, as we know from the Auto sequence menu).

4.1. Memory structure

Memory organizer is designed in a way which gives a user more or less free hands with building of his own memory structure. Different structure elements can be used on different levels, the important fact is that for printing of professional reports, measurements must be stored under one of bellow listed structure elements which are designed for this purpose.

Symbol	Default name	Description
	Node	Node
	Project	Project
	Location	Location
	Client	Client
	Appliance	Appliance (basic description)
	Appliance FD	Appliance (full description)
	Medical device	Medical device (basic description)
	Medical device FD	Medical device (full description)
	Welding device	Welding device (basic description)
	Welding device FD	Welding device (full description)
	Element	Universal element

Figure 4.1.1_Structure elemnts available

From the list of available elements the user can create a structure without limitation of used levels.

Note!
Metrel recommendation is that, not more than 100 structure elements are stored under the same level of structure!

When the instrument will reach the 100 elements recommendation, on the same level, it will pop out with a waning message >structure object is almost full, new structure element should be used<

Proposed structure:

Structure level:	Structure element:	Recommended quantity:
Level 0	*>Node 01*	***(100 elements)***
Level 1	*>Client 01\Project\location\Element*	***(100 elements)***
Level 2	*>Project 01\Client\Element*	***(100 elements)***
Level 3	*>Appliance 01*	***(100elements)***

In general for storing the test results two types of elements are available, element for storing basic information, and element for storing detailed information. Main difference is in number of available parameters which can be set for the tested appliance.

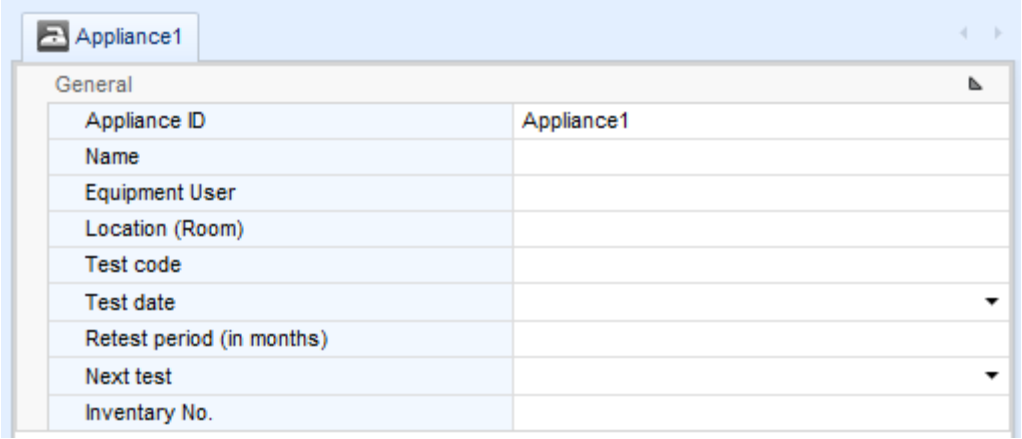


Figure 4.1.2_structure element with basic description

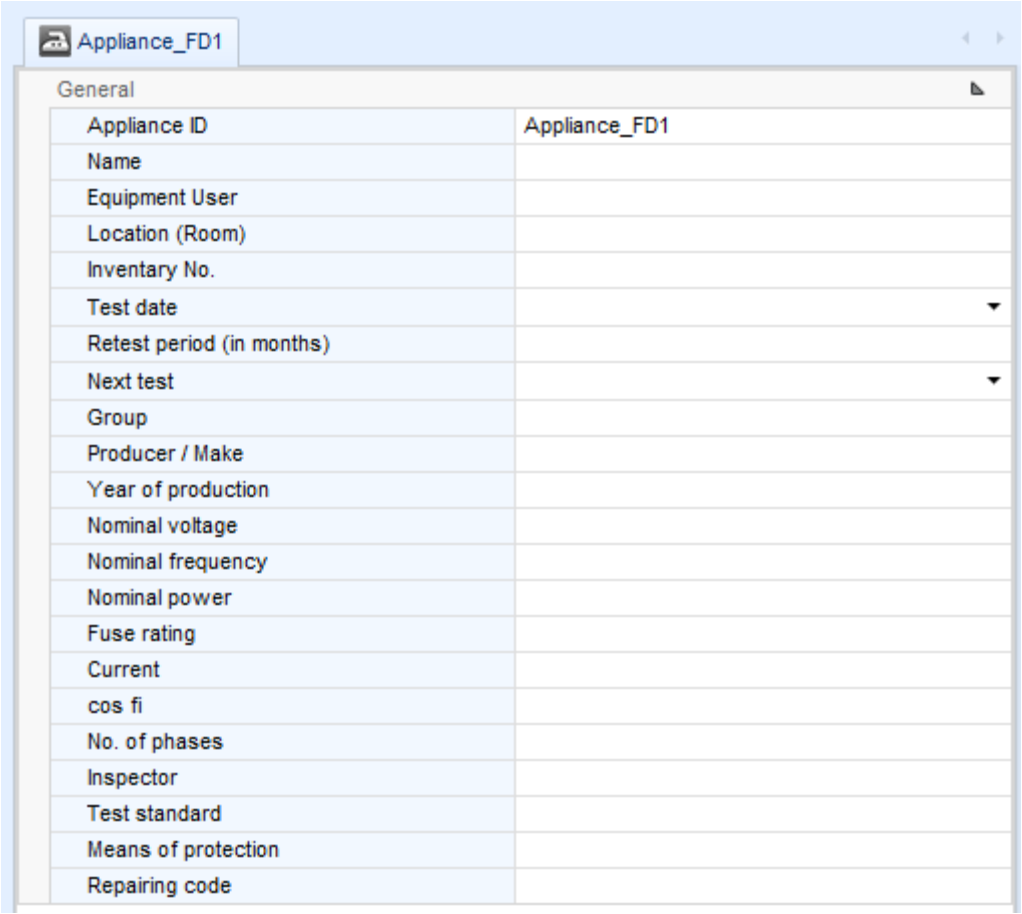


Figure 4.1.3_ structure element with full description

Results should be stored under one of following structure elements: this stands for the single measurements or auto-sequences, are always stored under one of the following structure elements:

Appliance	Appliance (basic description)
Appliance FD	Appliance (full description)
Medical device	Medical device (basic description)
Medical device FD	Medical device (full description)
Welding device	Welding device (basic description)
Welding device FD	Welding device (full description)

Figure 4.1.4_Structure elements presenting portable electrical equipment

4.2. Workspace

The first level of every structure is a Workspace. Workspace is basically a project with specific rules and limitations:

- only one workspace can be used at the time,
- structure elements can only be used within workspace,
- workspaces are stored on the microSD card,
- workspaces can be additionally archived on the microSD card (under exports)
- search for appliances within unopened workspaces is not possible,

4.3. Nods and other structure elements

Structural Elements (Nodes) are used to ease organization of data in the Memory Organizer. One Node is a must; others are optional and can be created or deleted freely, same is with other structure elements except the part of (must be included).

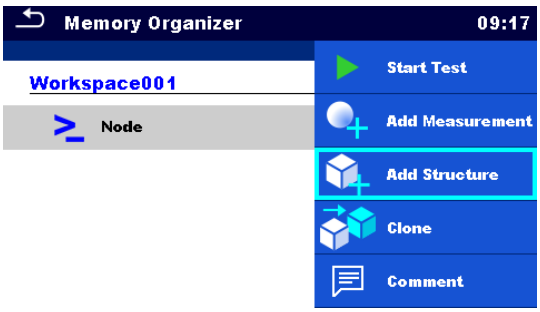


Figure 4.3.1_Creating the structure

5. How to start?

By default (out of the box) the instrument is equipped with a demo Memory structure, presenting one of the possible ways of using the structure.

Figure 5.1_Demo memory structure

User can begin storing results in this predefined structure, or he can start building a new custom structure from the scratch.

Starting from memory organizer

For a clean new start the user has an option to create his own structure including single tests or Auto Sequences. The data can be organized in a tree structure with Structure objects and Measurements.
OmegaGT XA has a multi-level structure.

In this chapter we will explain how to use main features of memory organizer, and how to be most efficient on the field.

5.1. Creation of memory structure

When creating the memory structure, have in mind Metrel recommendation regarding proposed structure.

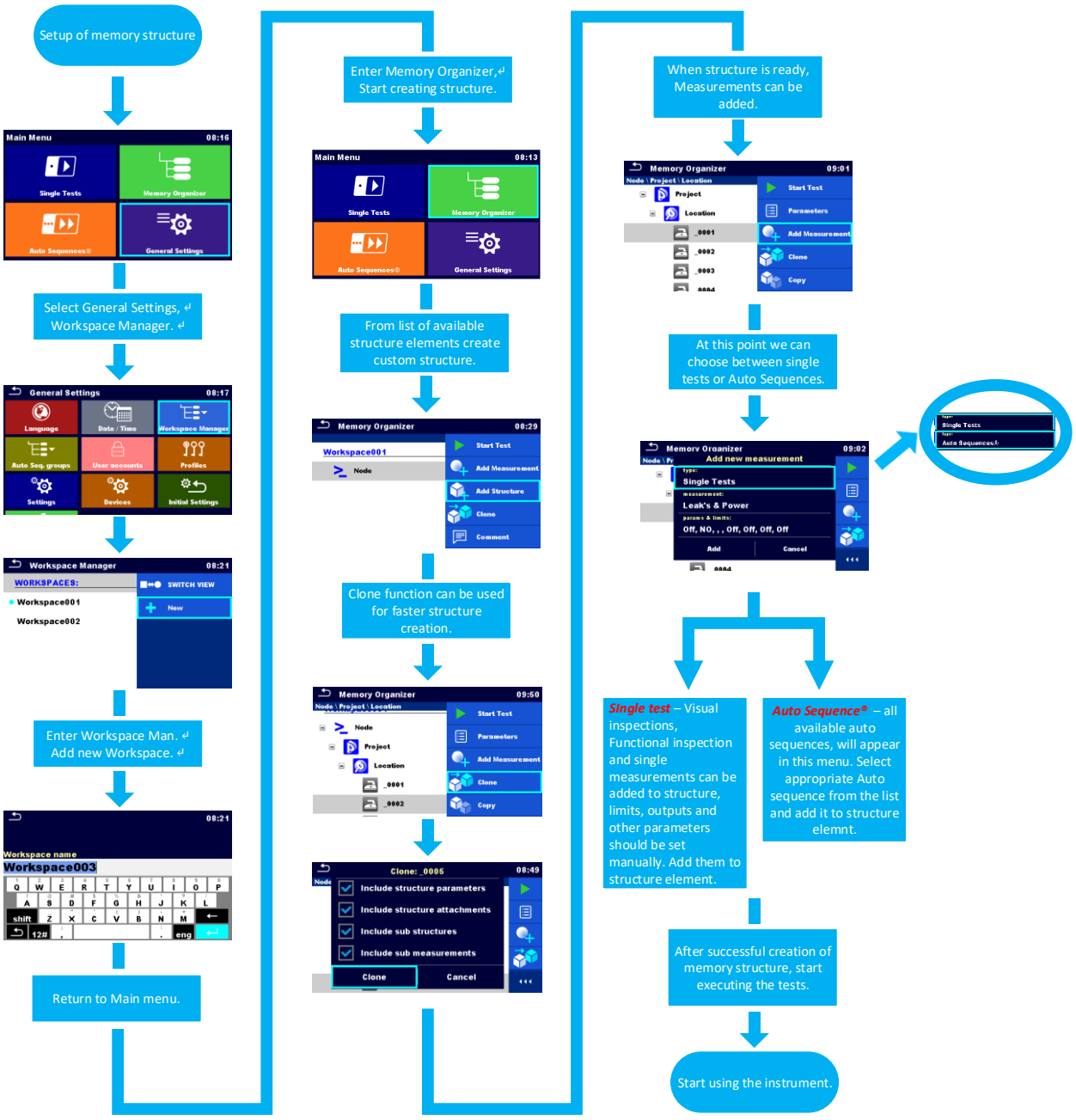


Figure 5.1.1_Creation of memory structure

5.2. Test mode V. starting from memory organizer, execution of single tests.

Reading and writing devices are not intended to be used in this mode. Flow of the test sequence (Auto Sequence flow) and test mode (Expert/Standard) are not supported in this type of operation with the instrument.

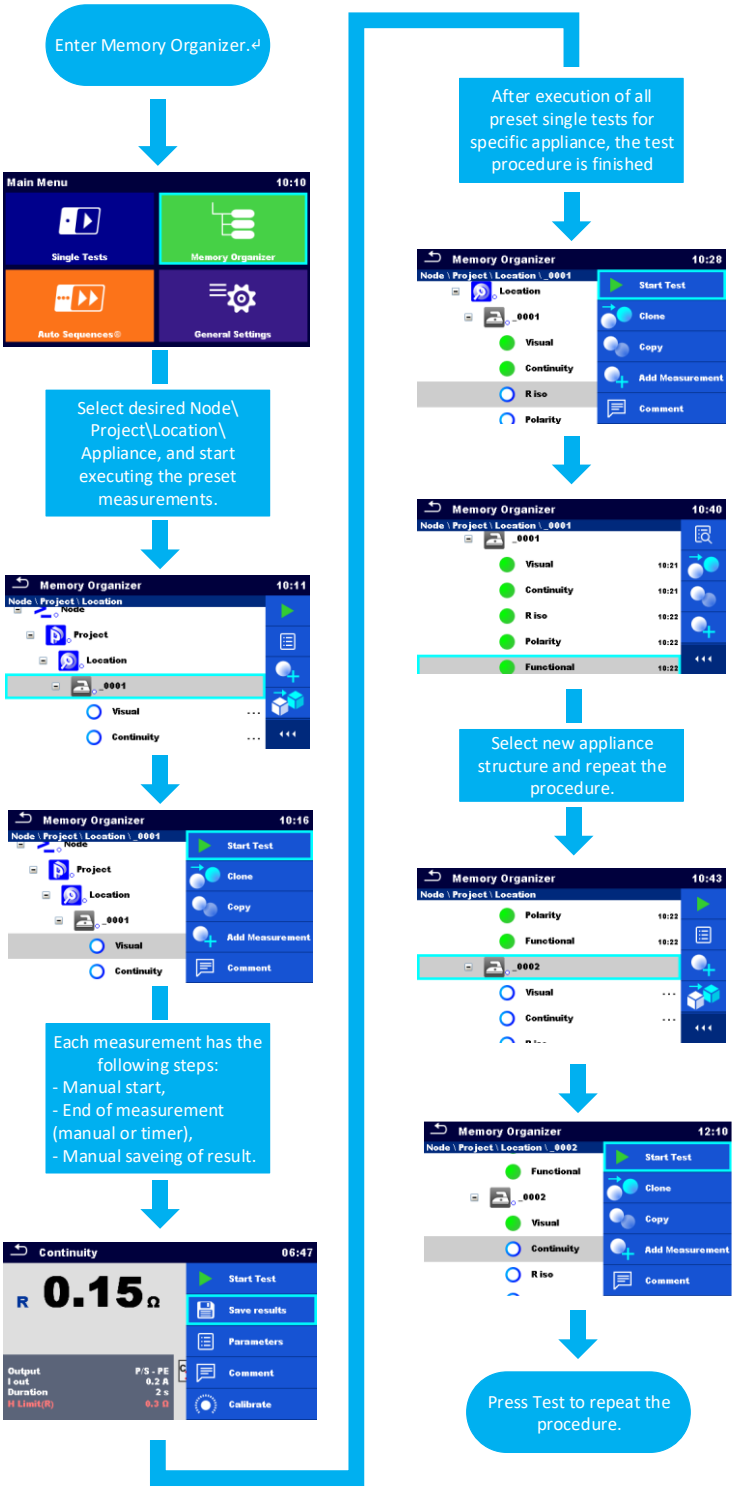


Figure 5.2.1_Starting from memory organizer_test mode V.

5.3. Test mode VI. starting from memory organizer, execution of Auto Sequences.

Note!
Flow command ***APPLIANCE INFO*** together with settings **Auto Save** & **Auto print**, are ignored by the instrument when working from memory organizer.

Flow command & Auto Save, Auto print setting

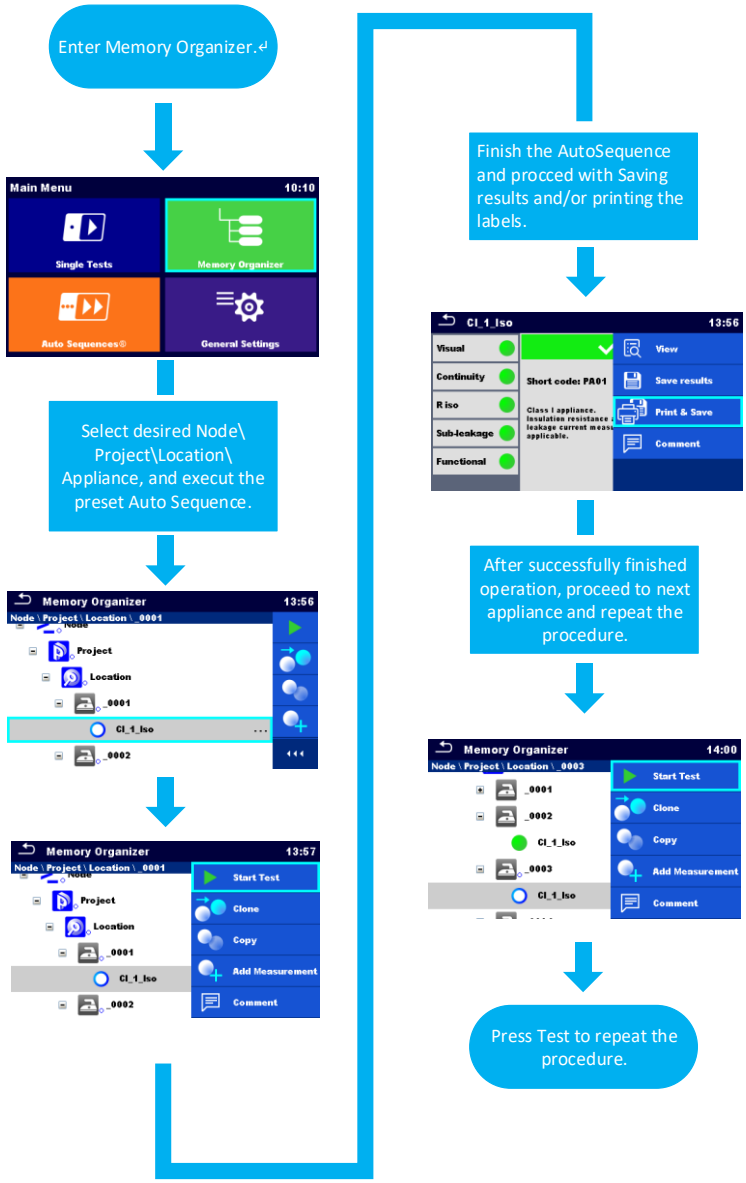


Figure 5.3.1_ Starting from memory organizer_test mode VI.

6. Re-testing of portable appliances

Portable appliance testing and re-testing is required by employers, landlords and self-employed to ensure safety of portable appliances. The frequency of testing should be determined based on the risk factors, such as:

- How often the equipment is used,
- If any damages are reported by users of the equipment,
- Where the equipment is used (Offices, Shops, Hotels, Schools, Public use, Construction sites, …),
- Etc.

OmegaPAT/GT enables few possible solutions for quick and efficient execution of re-tests.

- Re-testing from memory organizer, by use of Search function.
- Re-testing from memory organizer, by use of pre-prepared structure of appliances needed for re-testing (use of MESM PC SW)
- Re-testing by use of QR codes or NFC tags
- Re-testing by use of Barcode (same principle as with the QR codes

6.1. Re-testing from memory organizer, by use of Search function.

The data is stored on the instruments SD card. The workspace containing the data which will be used for retesting must be opened. User can search for the appliances that has to be re-tested in specific time period, by use of search function and its additional filters.

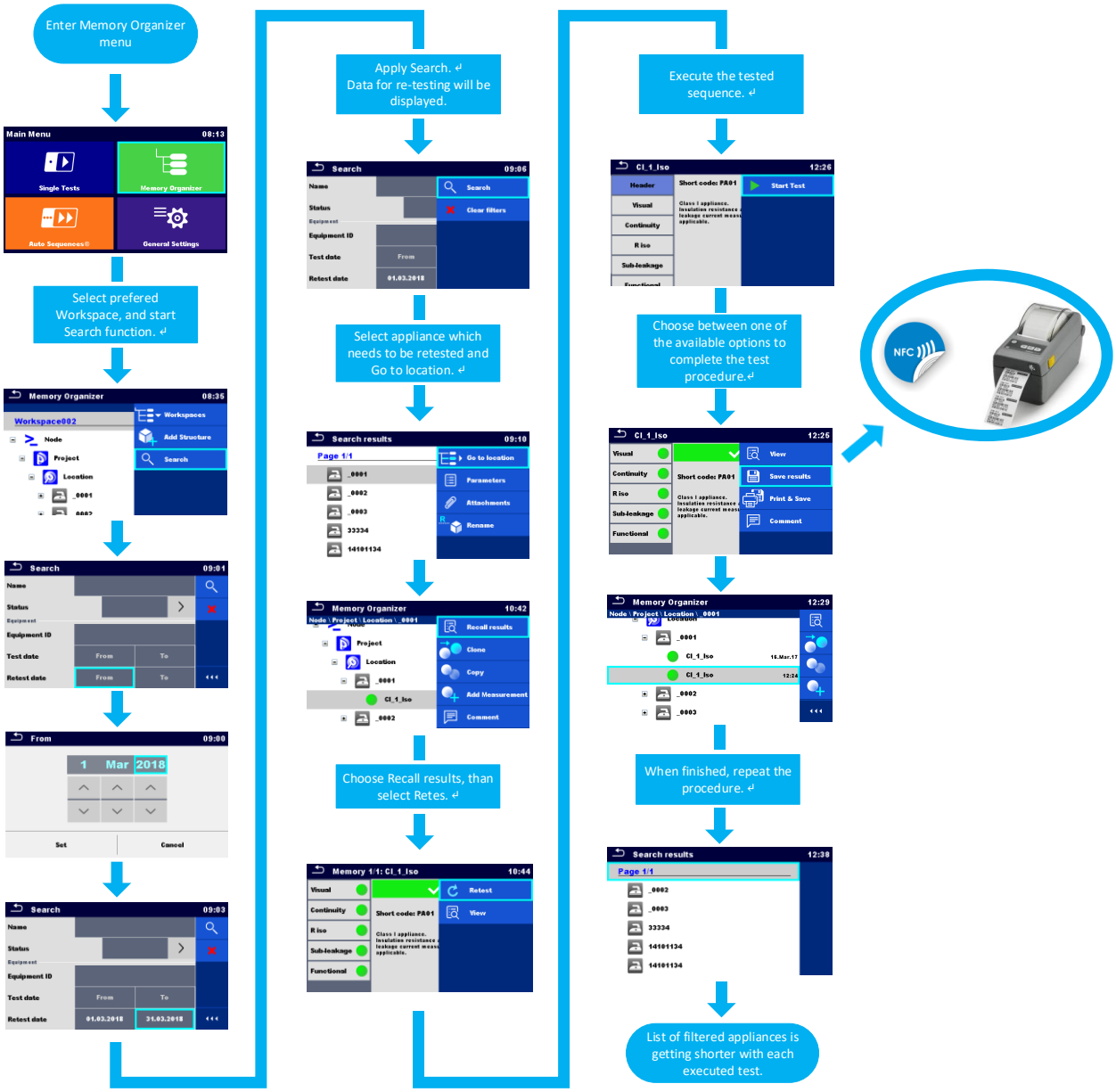


Figure 6.1.1_Re-testing from memory organizer

6.2. Re-testing from memory organizer, by use of pre-prepared structure of appliances needed for re-testing (use of MESM PC SW)

1. Download the data from the instrument to the MESM SW.
2. Start Upcoming Retest module and create new .padfx
3. Send the data back to the instrument, execute the retests.

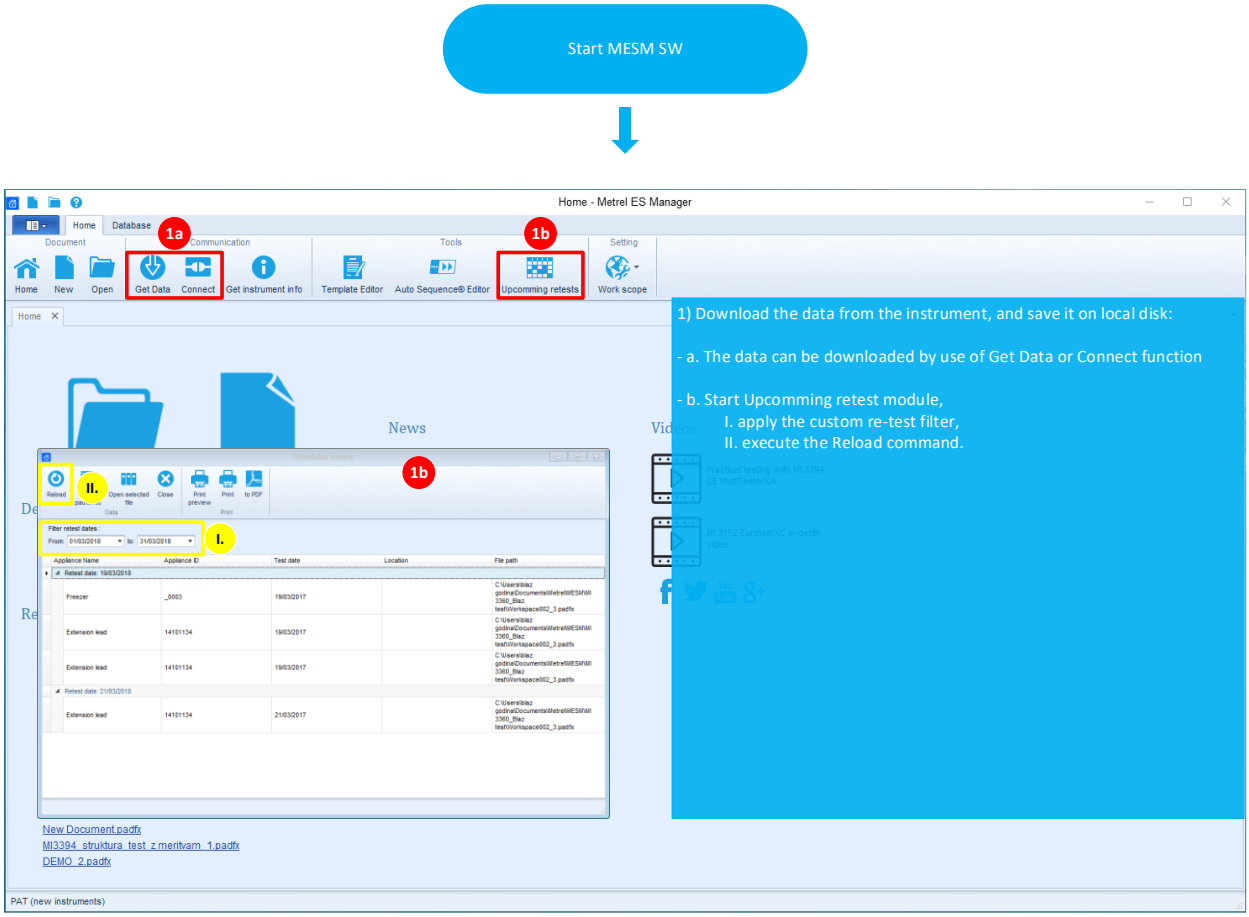


Figure 6.2.1_Download the data from the instrument

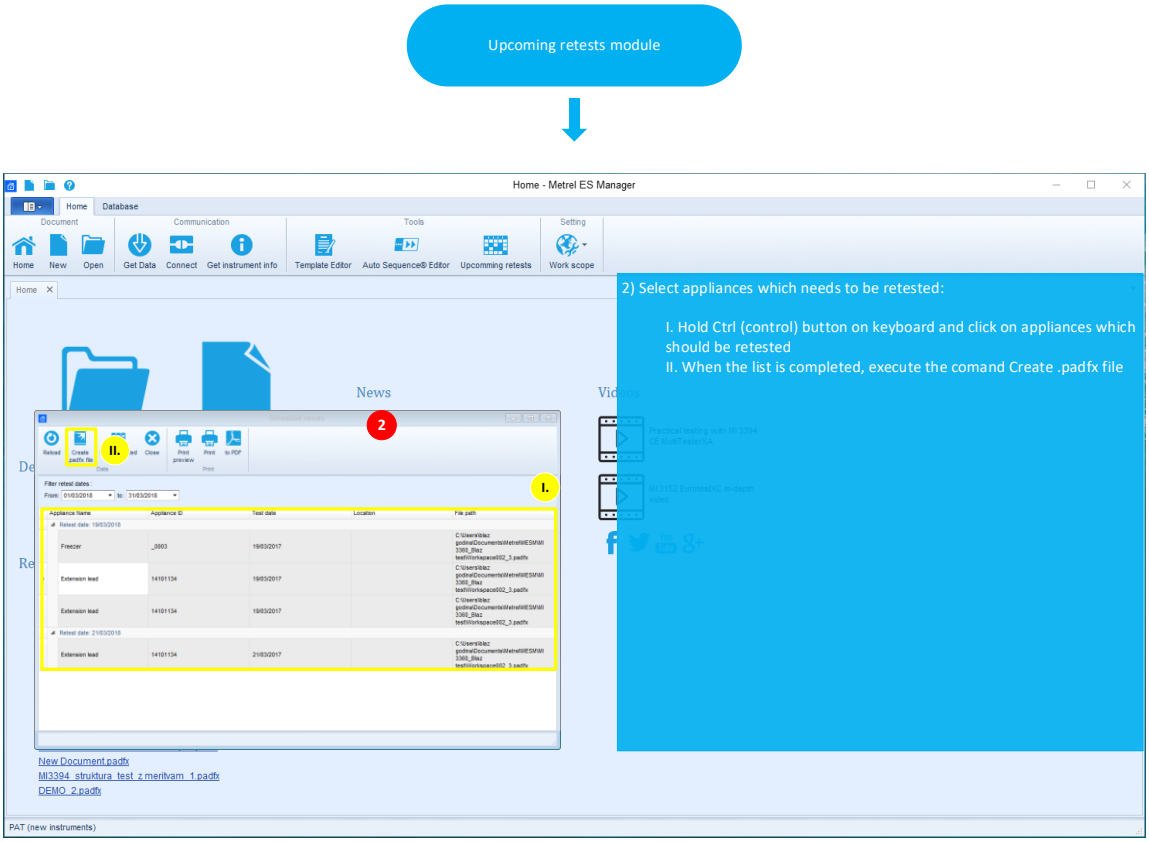


Figure 6.2.2_Create new .padfx

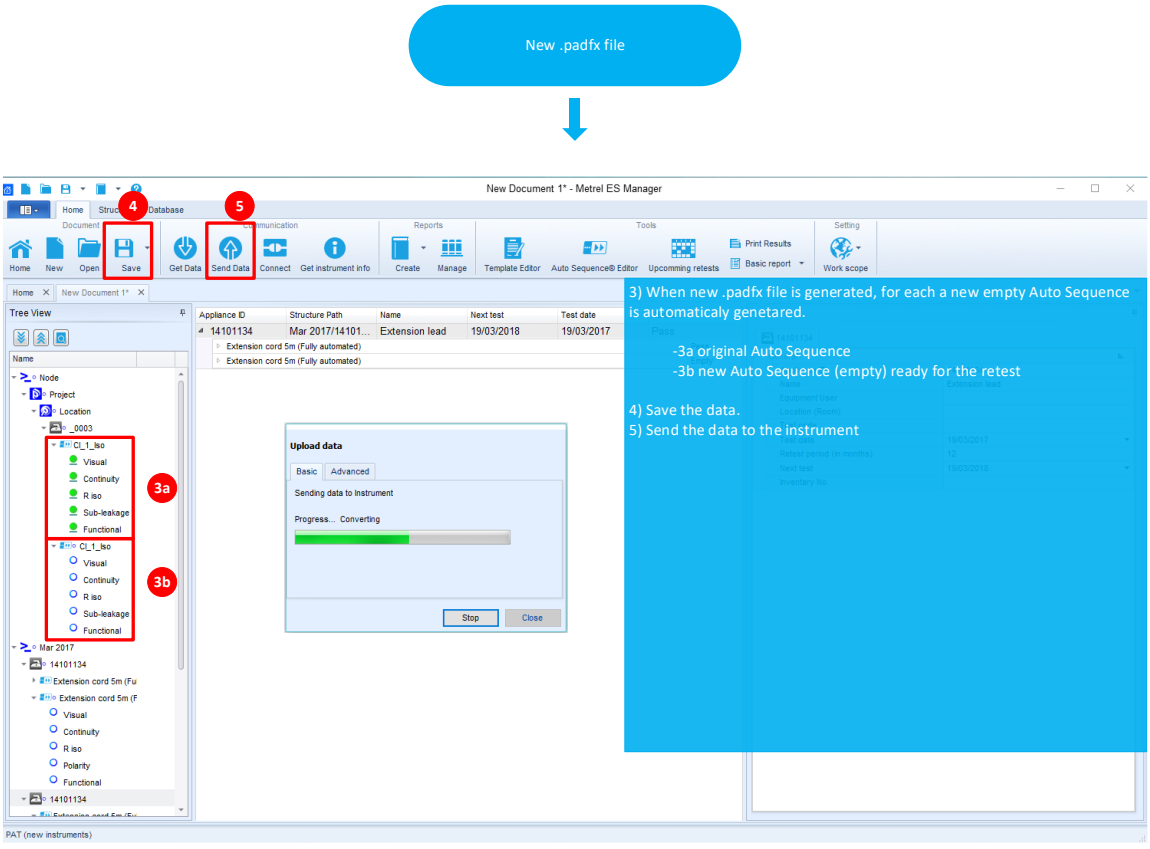


Figure 6.2.3_Send the data back to the instrument

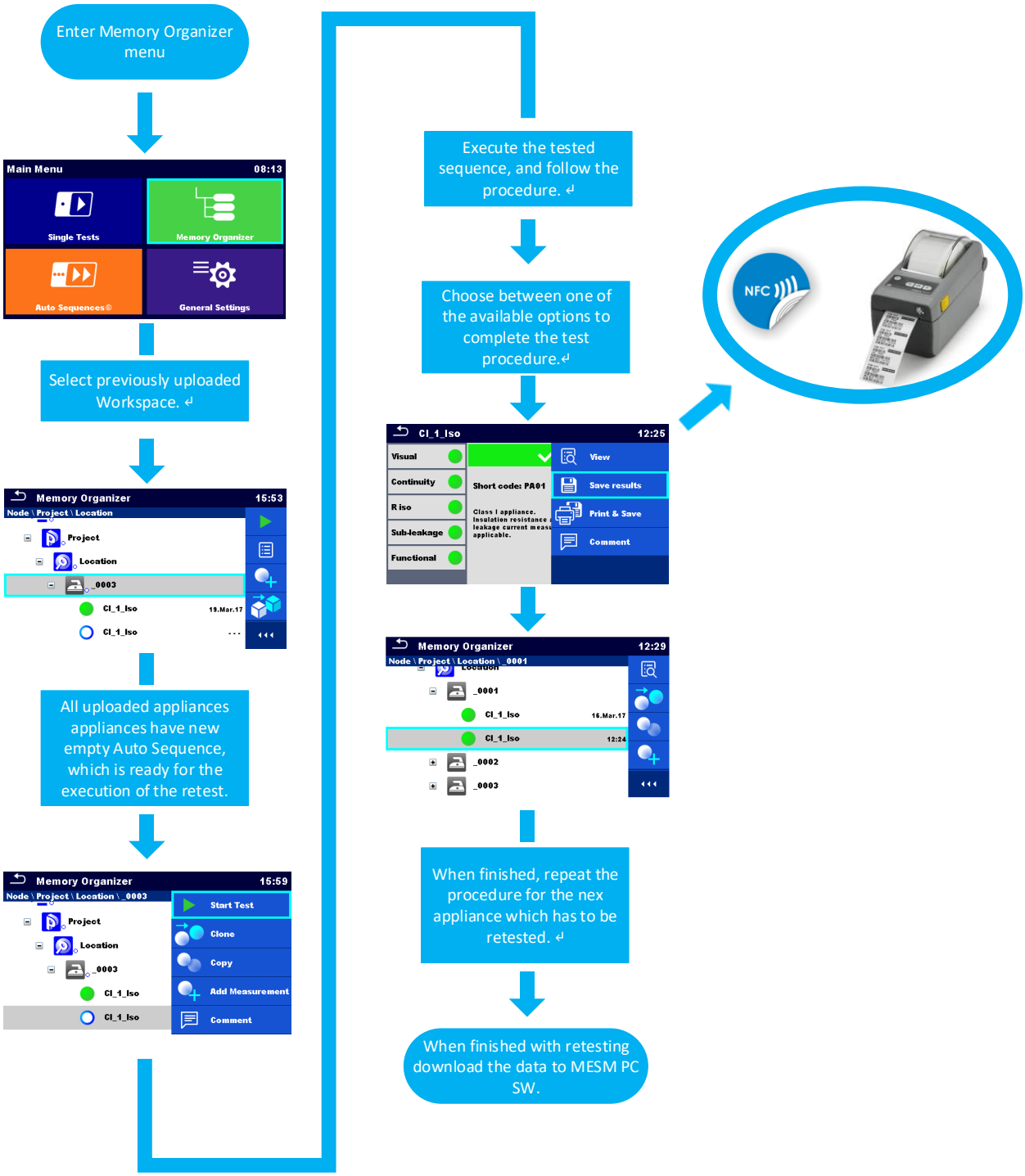


Figure 6.2.4_Execution of the uploaded data for re-testing

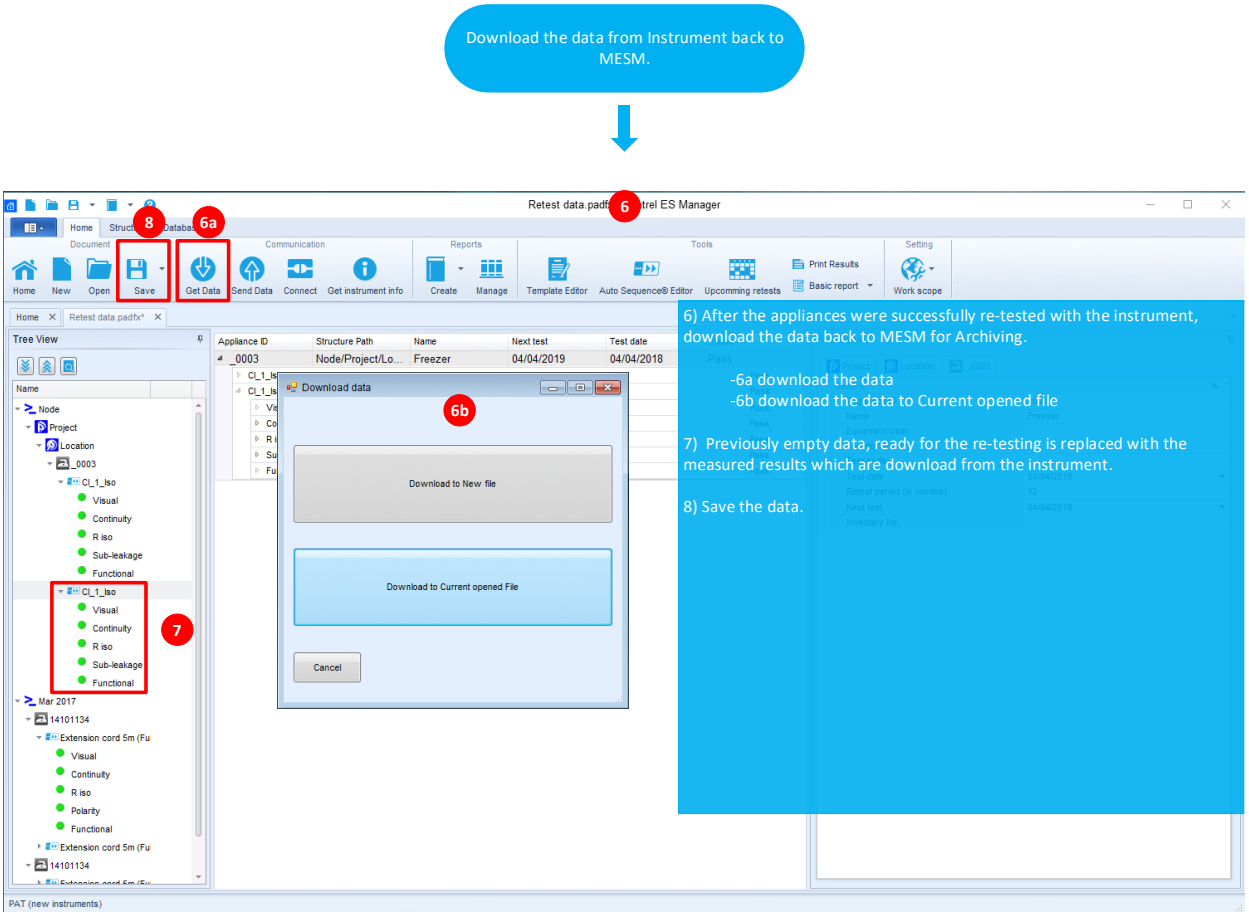


Figure 6.2.5_Downloading & archiving of test results

6.3. Re-testing by use of QR codes or NFC tags

A part of portable appliance testing is also tagging of the portable appliance. In most cases only the basic information such as, PASS / FAIL criteria, test / re-test date, ID of the appliance, and User of the test instrument is required to be placed on a tag.

The necessary data which must be visually placed on a tested appliance varies from countries. Metrel solution integrated via printing QR codes or writing NFC tags gives the user possibility to store complete information on the external media. With this solution the user has an option to check the data from the QR code or NFC tag by use of aMESM android application at any given time, simply by scanning them.

Figure 6.3.1_Sample of QR code

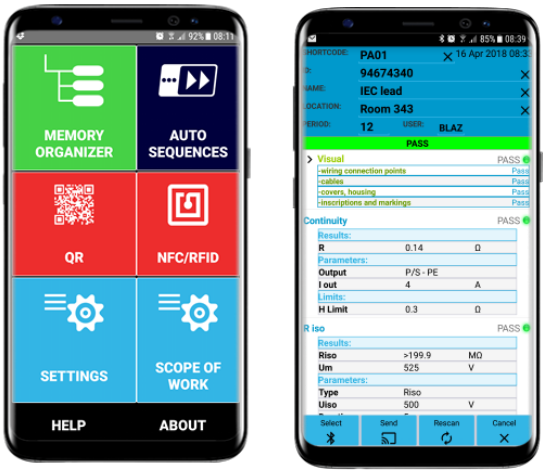


Figure 6.3.2_aMESM android application

Figure 6.3.3_Re-testing by use of android application

Instruments parameters are set as follows:

- Equipment ID (**Increment**, Replicate, Blank),
- Equipment name (**Replicate**, Blank),
- Retest period (**Replicate**, Blank),
- Result (**Worst** or Last),
- Test mode (Standard, **Expert**),
- Auto Seq. flow (**Ends if fail** or Proceeds if fail),
- Writing devices **Zebra ZD410**) **+** Auto Save (**On print**),
- Reading device (**aMESM**).

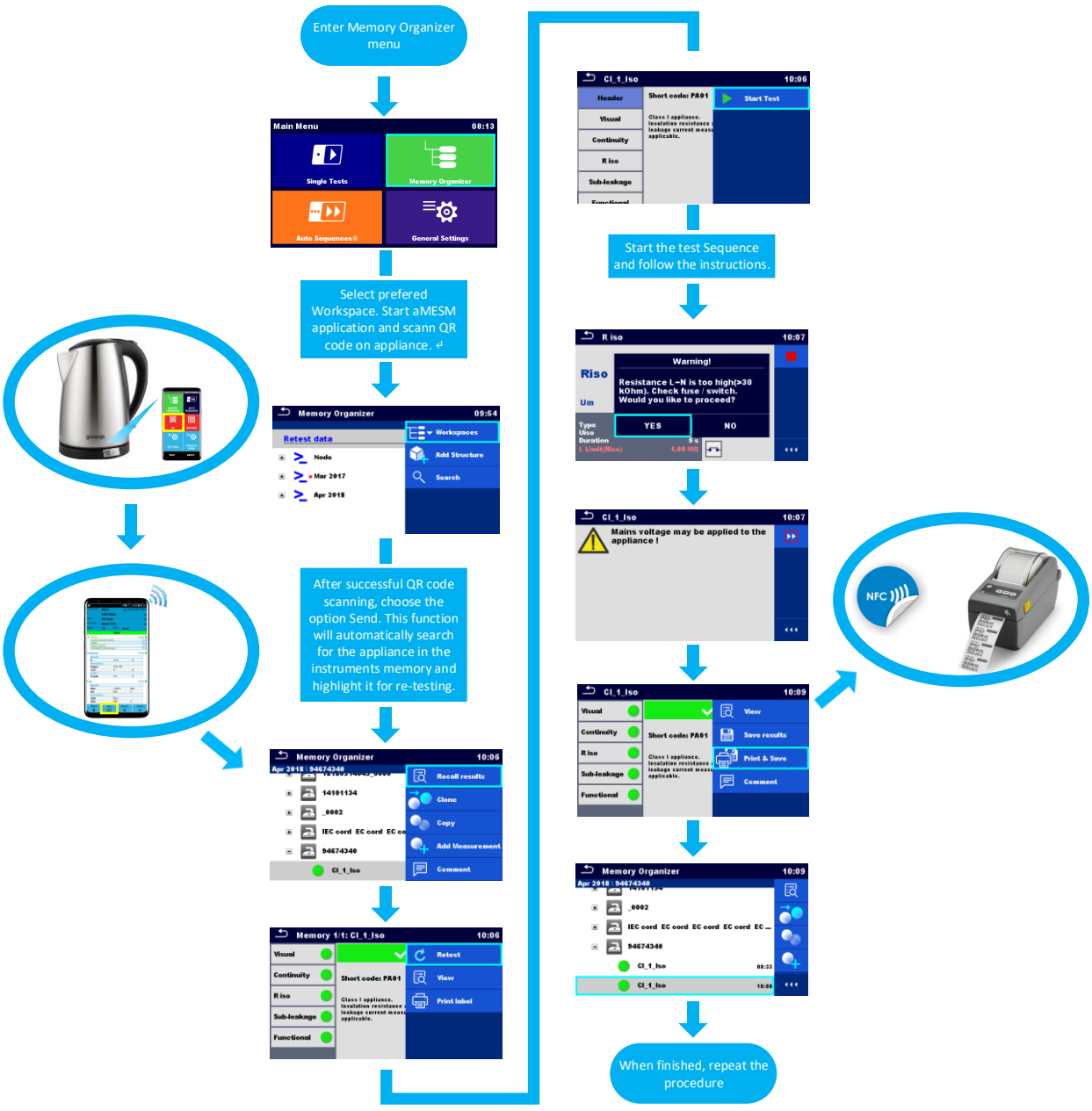


Figure 6.3.4_Re-testing by use of QR codes or NFC tags

7. Appendix

In this chapter differences between different types of supported labels format, reports and Basic to PRO MESM SW license is given.

7.1. Differences between supported types of labels

It is intended for tagging of individual appliance with Auto Sequence® test data. To start printing, Auto Sequence® should be finished and saved or reopened from memory structure. When required, printing of two labels of the same test can be set.

User has an option to choose between two tag formats, **PAT** and **GENERIC**.

7.1.1. PAT tag format (size 50mm x 25.5mm)

Printers (S 2062, A 1488, A 1489)
Label format PAT, label size 50mm x 25.5mm.

Available tag data presented in text area are:

- Auto Sequence® short Test code
- Appliance ID
- Appliance name
- Test date
- Retest date
- Auto Sequence® test status
- User name (who currently performed test or who performed saved test, if printed from memory)

Label type	***Form size W x H (mm)***	***Tag content arrangement***	***Data1st label***	***Data 2nd label***
Classic	50 x 25.5	Barcode	Test code, appliance ID	Appliance ID
		Text	Test code, appliance ID, test or retest date, status, user	Appliance ID, test or retest date, status, user
QR		QR	Test code, appliance ID, appliance name, test date, test period, location, user, status, measurement results.	Appliance ID, appliance name, test date, test period, location, user, status
		Text	Test code, appliance ID, appliance name, test or retest date, status, user	Appliance ID, appliance name, test or retest date, status, user
Simple		Text	Appliance ID, appliance name, status, test or retest date, user	

Notes:

- 2nd label is intended to mark supply cords.
- Data not available will not be printed on the label.

- Test or Retest date: is set in the General Settings => Devices => Writing devices menu.
- If Auto Sequence® was modified, its short code is marked with asterisk (*).

TEST DATE

Simple label_1tag	Classic label_1tag	QR label / NFC tag_1tag
APPL. ID: 0001 APPL. NAME: Kettle TEST STATUS PASS TEST DATE: 24.04.2018 USER: Blaz G.	Code: PA01 APPL. ID: 0001 PA01$0001 TEST DATE: 24.04.2018 USER: Blaz G. PASS	Code: PA01 0001 Kettle 24.04.2018 Blaz G. PASS
Simple label_1tag	**Classic label_2tag**	**QR label / NFC tag_2tag**
	Code: PA01 APPL. ID: 0001 PA01$0001 TEST DATE: 24.04.2018 USER: Blaz G. PASS	Code: PA01 0001 Kettle 24.04.2018 Blaz G. PASS
	PWR. SUP. CORD $0001 TEST DATE: 24.04.2018 USER: Blaz G. PASS	PWR. SUP. CORD 0001 Kettle 24.04.2018 Blaz G. PASS

RE-TEST DATE

Simple label_1tag	Classic label_1tag	QR label / NFC tag_1tag
APPL. ID: 0001 APPL. NAME: Kettle TEST STATUS PASS RE-TEST DATE: 24.04.2019 USER: Blaz G.	Code: PA01 APPL. ID: 0001 PA01$0001 RE-TEST DATE: 24.04.2019 USER: Blaz G. PASS	Code: PA01 0001 Kettle 24.04.2019 Blaz G. PASS
Simple label_1tag	**Classic label_2tag**	**QR label / NFC tag_2tag**
	Code: PA01 APPL. ID: 0001 PA01$0001 RE-TEST DATE: 24.04.2019 USER: Blaz G. PASS	Code: PA01 0001 Kettle 24.04.2019 Blaz G. PASS
	PWR. SUP. CORD $0001 RE-TEST DATE: 24.04.2019 USER: Blaz G. PASS	PWR. SUP. CORD 0001 Kettle 24.04.2019 Blaz G. PASS

7.1.2. PAT tag format (size 43mm x 99mm)

Printer, S 2062
Label format PAT, label size 43mm x 99mm.

Note!

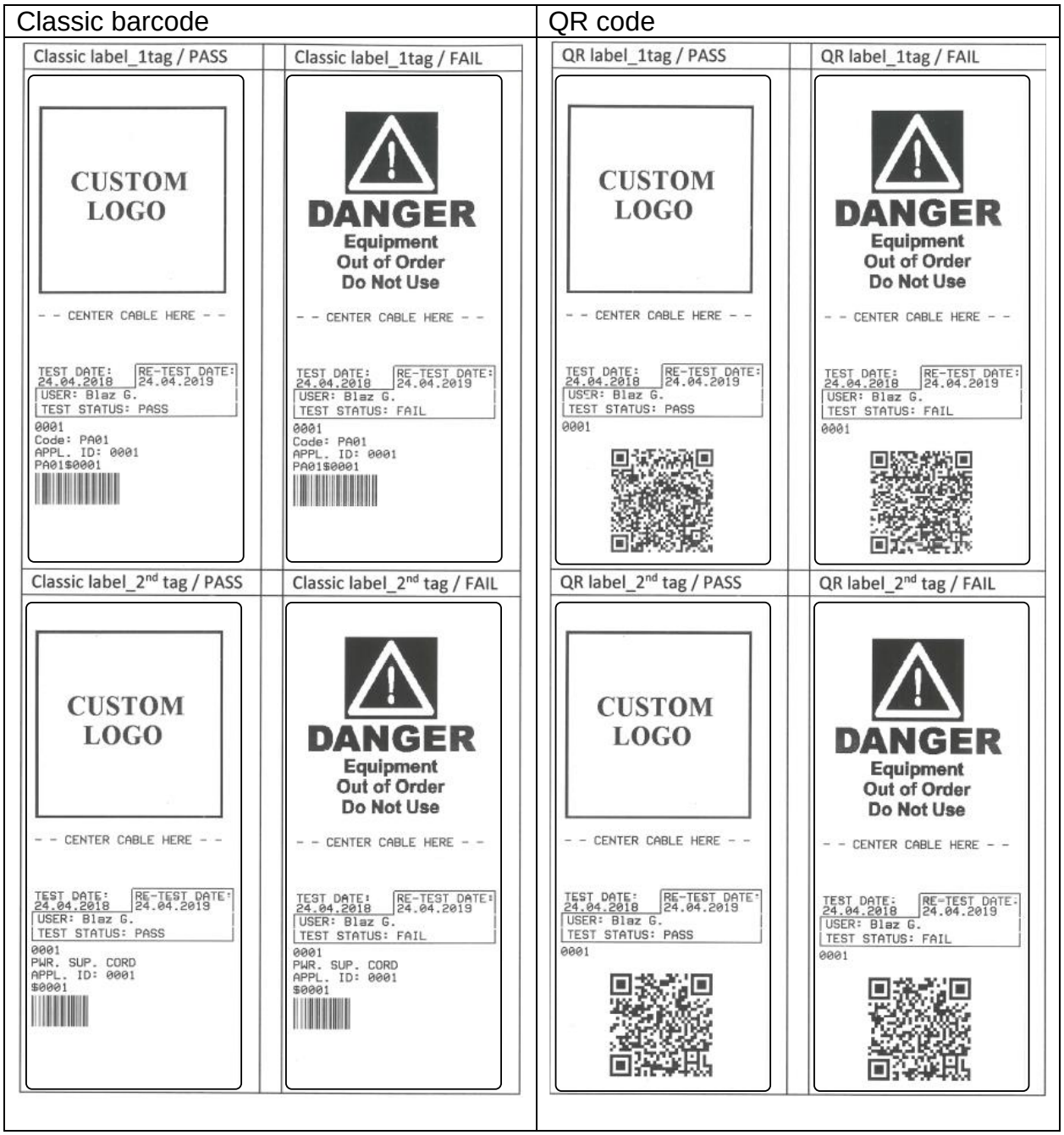
Logo for PASS and FAIL must be uploaded to printer manually.

Label type	***Form size W x H (mm)***	***Tag content arrangement***	***Data1st label***	***Data 2nd label***
Classic L	43 x 99	Barcode	Test code, appliance ID	Appliance ID
		Text	Test code, appliance ID, test and retest date, status, user	Appliance ID, test and retest date, status, user
QR L		QR	Test code, appliance ID, appliance name, test date, test period, location, user, status, measurement results.	Appliance ID, appliance name, test date, test period, location, user, status
		Text	Test code, appliance ID, appliance name, test and retest date, status, user	Appliance ID, appliance name, test and retest date, status, user

Notes:

- 2nd label is intended to mark supply cords.
- Data not available will not be printed on the label.
- Test or Retest date: is set in the General Settings => Devices => Writing devices menu.
- If Auto Sequence® was modified, its short code is marked with asterisk (*).

7.1.3. Label format PAT, label size 43mm x 99mm.



7.1.4. PAT tag format (NFC tag)

RFID / NFC tag type	**Data**
NTAG216	Test code, appliance ID, appliance name, test date, test period, location, user, status, measurement results.

7.1.5. GENERIC tag format (size 50mm x 25.5mm)

Printers (S 2062, A 1488, A 1489)
Label format PAT, label size 50mm x 25.5mm.

It is intended for tagging structure objects (element, appliance, equipment), which could be tested and their location under parent structure object is important. Label printing can be started from selected structure object (element, appliance, equipment), even if no Auto Sequence® is associated with it, or from finished Auto Sequence® saved under it.

Tag data presented in text area are:

- Parent structure object ID (name) (← Object_name)
- Auto Sequence® short test code (if printing from Auto Sequence®; if printing from object field is omitted)
- Object ID (name)
- Test date (|→ DD.MM.YYYY) or Retest date (→| DD.MM.YYYY), which one is selected in General Settings => Devices => Writing devices menu
- Status (printing from object: overall status of all tests appended to the object or sub-structure objects; printing from Auto Sequence®: its status)
- User name (Printing from Auto Sequence: user who performed test; printing from object: current signed-in user)

Following table describes tag content arrangement and its data for supported label form size.

Form size W x H (mm)	***Tag content arrangement***	***Data***
50 x 25.5	Text	Parent object name, Test code, Object ID, test or retest date, status, user
	QR	Parent object name, Test code, Object ID, test date, test period, Auto Sequence® status, Object status, user.

Notes:

- Data not available will not be printed on the label.
- Object without appended Auto Sequence® test has no status!
- If Auto Sequence® was modified, its short code is marked with asterisk (*).
- Object status depends on all measurements (Auto Sequences® or Single tests) appended to the object or sub-structure objects, refer to user manual of MI 3360 for details.

GENERIC_TEST DATE

GENERIC_RE-TEST DATE

7.1.6. GENERIC tag format (NFC tag)

Following table describes data content written on RFID / NFC tag.

RFID / NFC tag type	**Data**
NTAG216	Parent object name, Test code, Object ID, test date, test period, Auto Sequence® status, Object status, user.

7.1. Differences between basic and PRO MESM reports

Within Safety of electrical appliances, Work Scope, the following reports are available.
Basic license:

- Print Results
- Basic report

PRO license (EETR → Electrical_Equipment_Test_Report):

- EETR_PRO report
- EETR_Single report
- EETR_FD_Single report

Basic reports can be printed regardless of the used structure element.

For printing of PRO reports some conditions must be fulfilled. EETR_PRO report can be printed for any structure element. Printing of the reports EETR_Single and EETR_FD_Single depends on the used structure element.

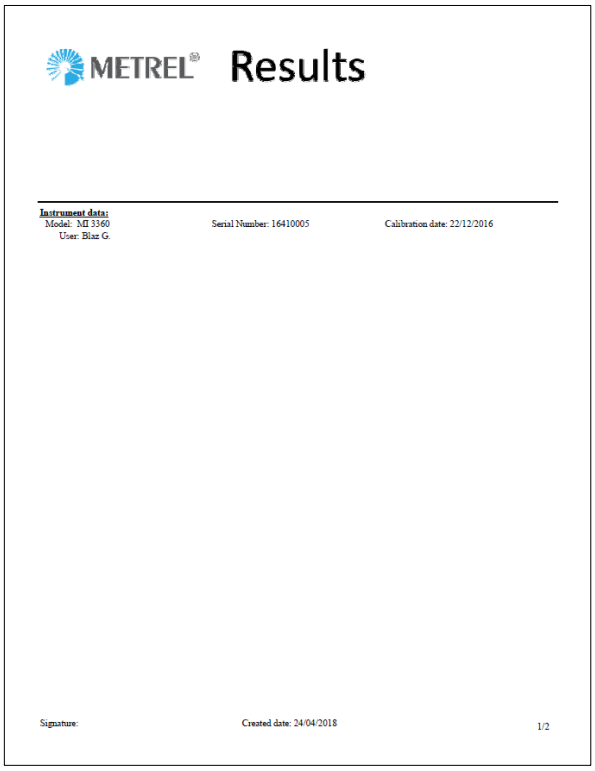
For creation of EETR_Single report, the measured data has to be stored under one of the following structure elements:

Symbol	Default name	Description
	Node	**Node**
	Appliance	Appliance (basic description)
	Medical device	Medical device (basic description)
	Welding device	Welding device (basic description)

For creation of EETR_FD_Single report, the measured data has to be stored under one of the following structure elements:

Symbol	Default name	Description
	Node	**Node**
	Appliance FD	Appliance (full description)
	Medical device FD	Medical device (full description)
	Welding device FD	Welding device (full description)

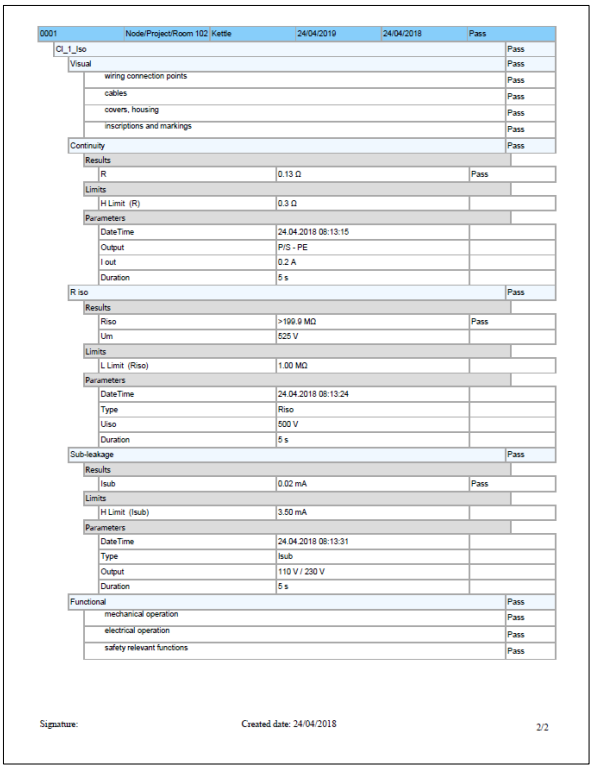
7.1.1. **Print results** (N…selected appliances will be printed on the report)



METREL Results

Instrument data:
Model: MI 3360
User: Blaz G.
Serial Number: 16410005
Calibration date: 22/12/2016

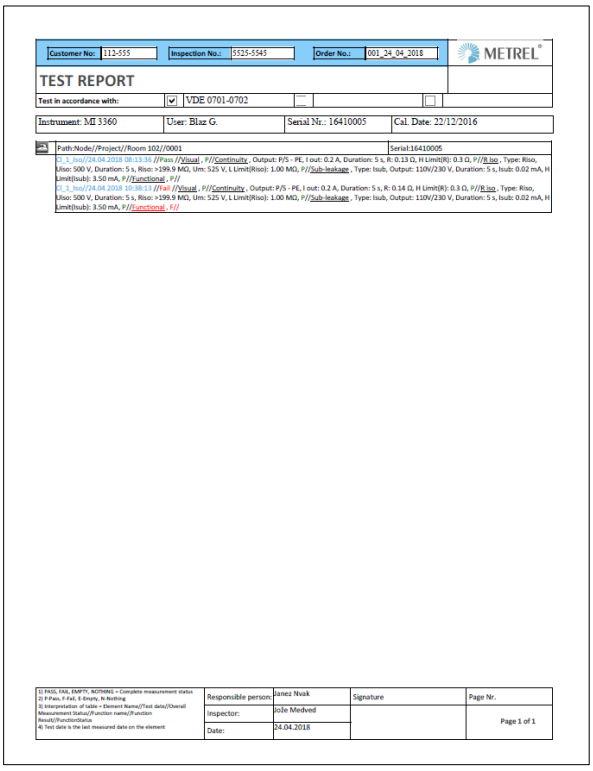
Signature:
Created date: 24/04/2018
1/2



0001	Node/Project/Room 102	Kettle	24/04/2019	24/04/2018	Pass
CI_1_Iso					Pass
Visual					Pass
wiring connection points					Pass
cables					Pass
covers, housing					Pass
inscriptions and markings					Pass
Continuity					Pass
Results					
R			0.13 Ω		Pass
Limits					
H Limit (R)			0.3 Ω		
Parameters					
DateTime			24.04.2018 08:13:15		
Output			P/S - PE		
I out			0.2 A		
Duration			5 s		
R iso					Pass
Results					
Riso			>199.9 MΩ		Pass
Um			525 V		
Limits					
L Limit (Riso)			1.00 MΩ		
Parameters					
DateTime			24.04.2018 08:13:24		
Type			Riso		
Uiso			500 V		
Duration			5 s		
Sub-leakage					Pass
Results					
Isub			0.02 mA		Pass
Limits					
H Limit (Isub)			3.50 mA		
Parameters					
DateTime			24.04.2018 08:13:31		
Type			Isub		
Output			110 V / 230 V		
Duration			5 s		
Functional					Pass
mechanical operation					Pass
electrical operation					Pass
safety relevant functions					Pass

Signature:
Created date: 24/04/2018
2/2

7.1.2. **Basic report** (N…selected appliances will be printed on the report)



Customer No:	112-555	Inspection No.:	5525-5545	Order No.:	001_24_04_2018

METREL

TEST REPORT

Test in accordance with: ☑ VDE 0701-0702

Instrument: MI 3360	User: Blaz G.	Serial Nr.: 16410005	Cal. Date: 22/12/2016

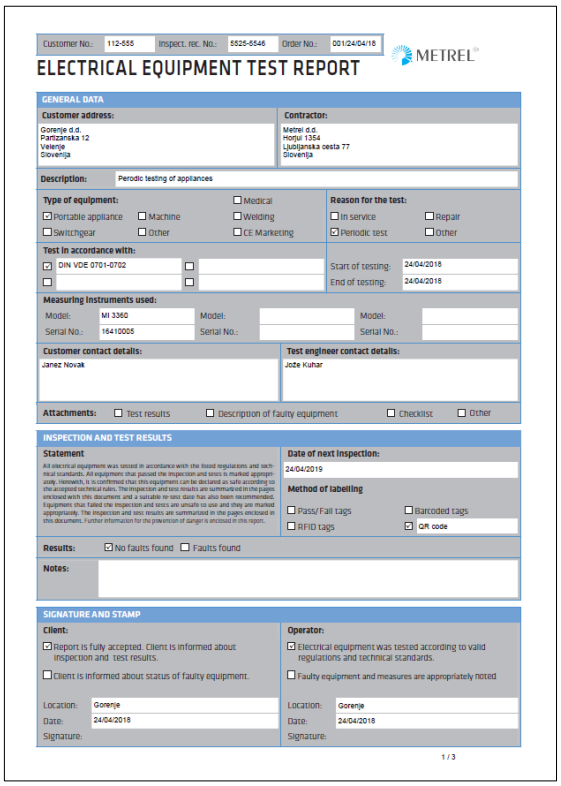
Path:Node//Project//Room 102//0001	Serial:16410005

CI_1_Iso//24.04.2018 08:13:36 //Pass //Visual , P//Continuity , Output: P/S - PE, I out: 0.2 A, Duration: 5 s, R: 0.13 Ω, H Limit(R): 0.3 Ω, P//R iso , Type: Riso, Uiso: 500 V, Duration: 5 s, Riso: >199.9 MΩ, Um: 525 V, L Limit(Riso): 1.00 MΩ, P//Sub-leakage , Type: Isub, Output: 110V/230 V, Duration: 5 s, Isub: 0.02 mA, H Limit(Isub): 3.50 mA, P//Functional , P//

CI_1_Iso//24.04.2018 10:38:13 //Fail //Visual , P//Continuity , Output: P/S - PE, I out: 0.2 A, Duration: 5 s, R: 0.14 Ω, H Limit(R): 0.3 Ω, P//R iso , Type: Riso, Uiso: 500 V, Duration: 5 s, Riso: >199.9 MΩ, Um: 525 V, L Limit(Riso): 1.00 MΩ, P//Sub-leakage , Type: Isub, Output: 110V/230 V, Duration: 5 s, Isub: 0.02 mA, H Limit(Isub): 3.50 mA, P//Functional , F//

1) PASS, FAIL, EMPTY, NOTHING = Complete measurement status 2) P-Pass, F-Fail, E-Empty, N-Nothing 3) Interpretation of table = Element Name//Test data//Overall Measurement Status//Function name//Function Result//FunctionStatus 4) Test date is the last measured date on the element	Responsible person:	Janez Nvak	Signature	Page Nr.
	Inspector:	Jože Medved		Page 1 of 1
	Date:	24.04.2018		

7.1.1. **EETR_PRO report** (N…selected appliances will be printed on the report)



Customer No.: 112-555 Inspect. rec. No.: 5525-5546 Order No.: 001/24/04/18

METREL

ELECTRICAL EQUIPMENT TEST REPORT

GENERAL DATA

Customer address:
Gorenje d.d.
Partizanska 12
Velenje
Slovenija

Contractor:
Metrel d.d.
Horjul 1354
Ljubljanska cesta 77
Slovenija

Description: Perodic testing of appliances

Type of equipment: ☐ Medical ☑ Portable appliance ☐ Machine ☐ Welding ☐ Switchgear ☐ Other ☐ CE Marketing

Reason for the test: ☐ In service ☐ Repair ☑ Periodic test ☐ Other

Test in accordance with: ☑ DIN VDE 0701-0702

Start of testing: 24/04/2018
End of testing: 24/04/2018

Measuring instruments used:
Model: MI 3360 Serial No.: 16410005
Model: Serial No.:
Model: Serial No.:

Customer contact details: Janez Novak

Test engineer contact details: Jože Kuhar

Attachments: ☐ Test results ☐ Description of faulty equipment ☐ Checklist ☐ Other

INSPECTION AND TEST RESULTS

Statement
All electrical equipment was tested in accordance with the listed regulations and technical standards. All equipment that passed the inspection and tests is marked appropriately. Herewith, it is confirmed that this equipment can be declared as safe according to the accepted technical rules. The inspection and test results are summarized in the pages enclosed with this document and a suitable re-test date has also been recommended. Equipment that failed the inspection and tests are unsafe to use and they are marked appropriately. The inspection and test results are summarized in the pages enclosed in this document. Further information for the prevention of danger is enclosed in this report.

Date of next inspection: 24/04/2019

Method of labelling
☐ Pass/Fail tags ☐ Barcoded tags ☐ RFID tags ☑ QR code

Results: ☑ No faults found ☐ Faults found

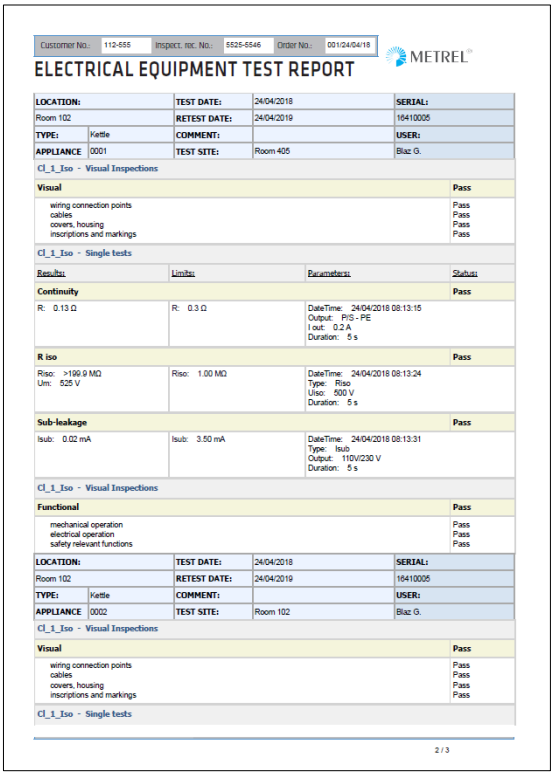
Notes:

SIGNATURE AND STAMP

Client:
☑ Report is fully accepted. Client is informed about inspection and test results.
☐ Client is informed about status of faulty equipment.
Location: Gorenje
Date: 24/04/2018
Signature:

Operator:
☑ Electrical equipment was tested according to valid regulations and technical standards.
☐ Faulty equipment and measures are appropriately noted
Location: Gorenje
Date: 24/04/2018
Signature:

1 / 3



Customer No.: 112-555 Inspect. rec. No.: 5525-5546 Order No.: 001/24/04/18

METREL

ELECTRICAL EQUIPMENT TEST REPORT

LOCATION:		TEST DATE:	24/04/2018	SERIAL:
Room 102		RETEST DATE:	24/04/2019	16410005
TYPE:	Kettle	COMMENT:		USER:
APPLIANCE	0001	TEST SITE:	Room 405	Blaz G.

Cl_1_Iso - Visual Inspections

Visual	Pass
wiring connection points	Pass
cables	Pass
covers, housing	Pass
inscriptions and markings	Pass

Cl_1_Iso - Single tests

Results:	Limits:	Parameters:	Status:
Continuity			**Pass**
R: 0.13 Ω	R: 0.3 Ω	DateTime: 24/04/2018 08:13:15 Output: P/S - PE I out: 0.2 A Duration: 5 s	
R iso			**Pass**
Riso: >199.9 MΩ Um: 525 V	Riso: 1.00 MΩ	DateTime: 24/04/2018 08:13:24 Type: Riso Uiso: 500 V Duration: 5 s	
Sub-leakage			**Pass**
Isub: 0.02 mA	Isub: 3.50 mA	DateTime: 24/04/2018 08:13:31 Type: Isub Output: 110V/230 V Duration: 5 s	

Cl_1_Iso - Visual Inspections

Functional	Pass
mechanical operation	Pass
electrical operation	Pass
safety relevant functions	Pass

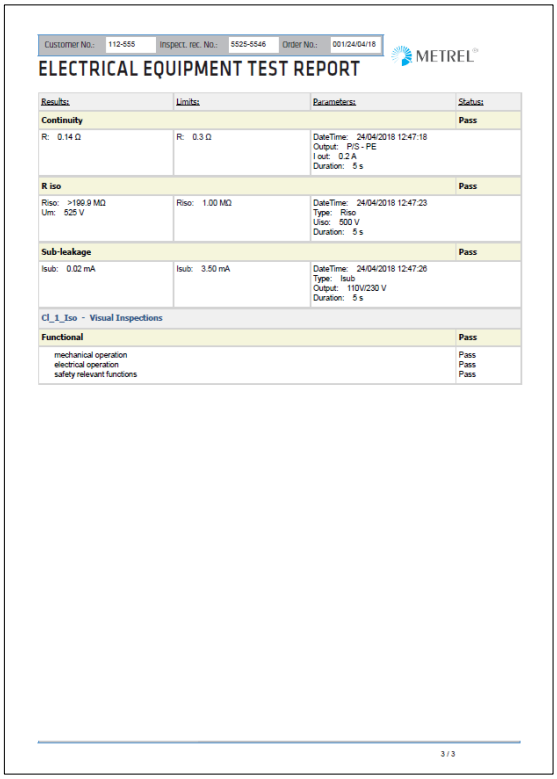
LOCATION:		TEST DATE:	24/04/2018	SERIAL:
Room 102		RETEST DATE:	24/04/2019	16410005
TYPE:	Kettle	COMMENT:		USER:
APPLIANCE	0002	TEST SITE:	Room 102	Blaz G.

Cl_1_Iso - Visual Inspections

Visual	Pass
wiring connection points	Pass
cables	Pass
covers, housing	Pass
inscriptions and markings	Pass

Cl_1_Iso - Single tests

2 / 3



Customer No.: 112-555 Inspect. rec. No.: 5525-5546 Order No.: 001/24/04/18

METREL

ELECTRICAL EQUIPMENT TEST REPORT

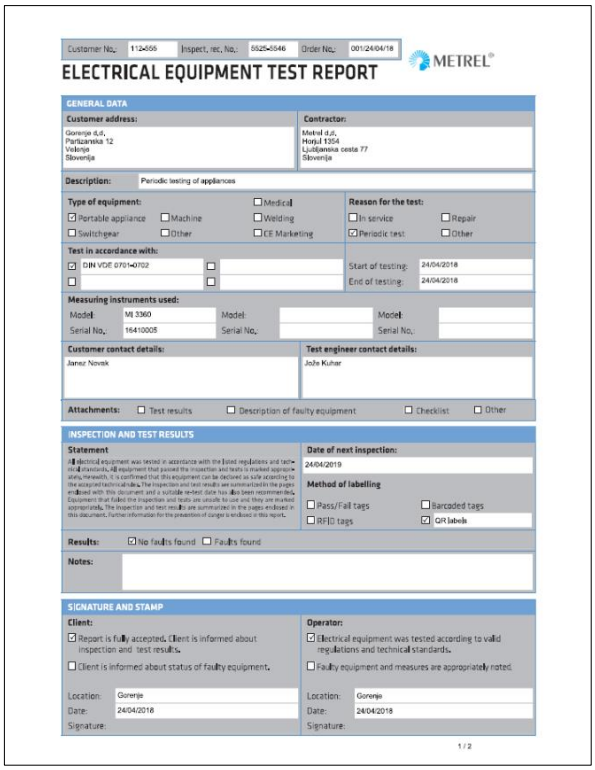
Results:	Limits:	Parameters:	Status:
Continuity			**Pass**
R: 0.14 Ω	R: 0.3 Ω	DateTime: 24/04/2018 12:47:18 Output: P/S - PE I out: 0.2 A Duration: 5 s	
R iso			**Pass**
Riso: >199.9 MΩ Um: 525 V	Riso: 1.00 MΩ	DateTime: 24/04/2018 12:47:23 Type: Riso Uiso: 500 V Duration: 5 s	
Sub-leakage			**Pass**
Isub: 0.02 mA	Isub: 3.50 mA	DateTime: 24/04/2018 12:47:26 Type: Isub Output: 110V/230 V Duration: 5 s	

Cl_1_Iso - Visual Inspections

Functional	Pass
mechanical operation	Pass
electrical operation	Pass
safety relevant functions	Pass

3 / 3

7.1.2. **EETR_Single report** (Only one appliance is printed per report)



ELECTRICAL EQUIPMENT TEST REPORT

GENERAL DATA

Customer address:	Contractor:
Gorenje d.d. Partizanska 12 Velenje Slovenija	Metrel d.d. Horjul 1354 Ljubljanska cesta 77 Slovenija

Description: Periodic testing of appliances

Type of equipment: ☐ Medical ☑ Portable appliance ☐ Machine ☐ Welding ☐ Switchgear ☐ Other ☐ CE Marketing

Reason for the test: ☐ In service ☐ Repair ☑ Periodic test ☐ Other

Test in accordance with: ☑ DIN VDE 0701-0702

Start of testing: 24/04/2018
End of testing: 24/04/2018

Measuring instruments used:

Model:	MI 3360	Model:		Model:	
Serial No.:	16410005	Serial No.:		Serial No.:	

Customer contact details:	Test engineer contact details:
Janez Novak	Jože Kuhar

Attachments: ☐ Test results ☐ Description of faulty equipment ☐ Checklist ☐ Other

INSPECTION AND TEST RESULTS

Statement

All electrical equipment was tested in accordance with the listed regulations and technical standards. All equipment that passed the inspection and tests is marked appropriately. Herewith, it is confirmed that this equipment can be declared as safe according to the accepted technical rules. The inspection and test results are summarized in the pages enclosed with this document and a suitable re-test date has also been recommended. Equipment that failed the inspection and tests are unsafe to use and they are marked appropriately. The inspection and test results are summarized in the pages enclosed in this document. Further information for the prevention of danger is enclosed in this report.

Date of next inspection: 24/04/2019

Method of labelling: ☐ Pass/Fail tags ☐ Barcoded tags ☐ RFID tags ☑ QR labels

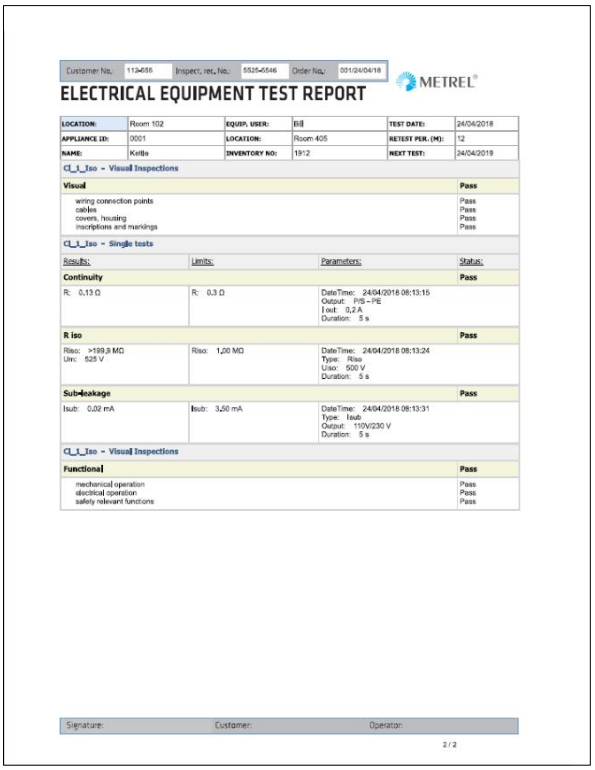
Results: ☑ No faults found ☐ Faults found

Notes:

SIGNATURE AND STAMP

Client:	Operator:
☑ Report is fully accepted. Client is informed about inspection and test results.	☑ Electrical equipment was tested according to valid regulations and technical standards.
☐ Client is informed about status of faulty equipment.	☐ Faulty equipment and measures are appropriately noted.
Location: Gorenje	Location: Gorenje
Date: 24/04/2018	Date: 24/04/2018
Signature:	Signature:

1 / 2



ELECTRICAL EQUIPMENT TEST REPORT

LOCATION:	Room 102	EQUIP. USER:	Bill	TEST DATE:	24/04/2018
APPLIANCE ID:	0001	LOCATION:	Room 405	RETEST PER. (M):	12
NAME:	Kettle	INVENTORY NO:	1912	NEXT TEST:	24/04/2018

Cl_1_Iso - Visual Inspections

Visual	Pass
wiring connection points	Pass
cables	Pass
covers, housing	Pass
inscriptions and markings	Pass

Cl_1_Iso - Single tests

Results:	Limits:	Parameters:	Status:
Continuity			Pass
R: 0,13 Ω	R: 0,3 Ω	DateTime: 24/04/2018 08:13:15 Output: PIS - PE I out: 0,2 A Duration: 5 s	
R iso			Pass
Riso: >199,8 MΩ Um: 525 V	Riso: 1,00 MΩ	DateTime: 24/04/2018 08:13:24 Type: Riso Uiso: 500 V Duration: 5 s	
Sub-leakage			Pass
Isub: 0,02 mA	Isub: 3,50 mA	DateTime: 24/04/2018 08:13:31 Type: Isub Output: 110V/230 V Duration: 5 s	

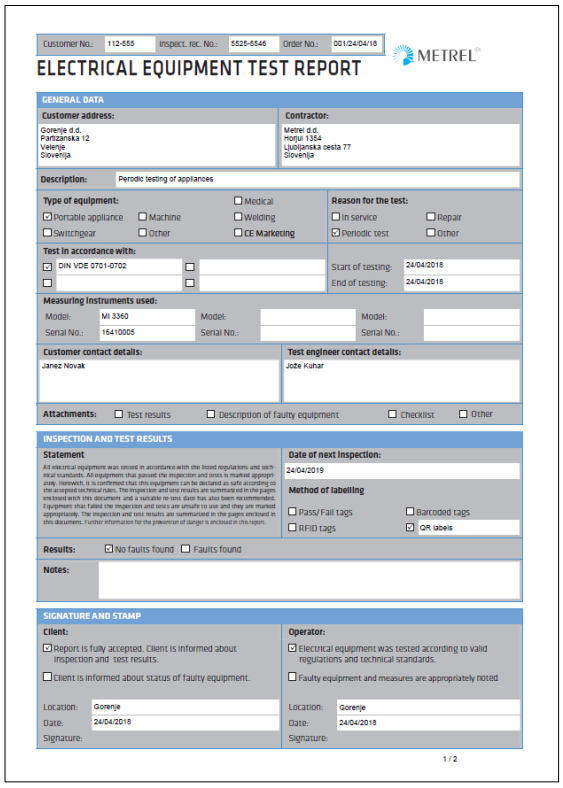
Cl_1_Iso - Visual Inspections

Functional	Pass
mechanical operation	Pass
electrical operation	Pass
safety relevant functions	Pass

Signature: Customer: Operator:

2 / 2

7.1.3. **EETR_FD_Single report** (Only one appliance is printed per report)



ELECTRICAL EQUIPMENT TEST REPORT

GENERAL DATA

Customer address:	Contractor:
Gorenje d.d. Partizanska 12 Velenje Slovenija	Metrel d.d. Horjul 1354 Ljubljanska cesta 77 Slovenija

Description: Periodic testing of appliances

Type of equipment: ☐ Medical ☑ Portable appliance ☐ Machine ☐ Welding ☐ Switchgear ☐ Other ☐ CE Marketing

Reason for the test: ☐ In service ☐ Repair ☑ Periodic test ☐ Other

Test in accordance with: ☑ DIN VDE 0701-0702

Start of testing: 24/04/2018
End of testing: 24/04/2018

Measuring instruments used:

Model:	MI 3360	Model:		Model:	
Serial No.:	16410005	Serial No.:		Serial No.:	

Customer contact details:	Test engineer contact details:
Janez Novak	Jože Kuhar

Attachments: ☐ Test results ☐ Description of faulty equipment ☐ Checklist ☐ Other

INSPECTION AND TEST RESULTS

Statement

All electrical equipment was tested in accordance with the listed regulations and technical standards. All equipment that passed the inspection and tests is marked appropriately. Herewith, it is confirmed that this equipment can be declared as safe according to the accepted technical rules. The inspection and test results are summarized in the pages enclosed with this document and a suitable re-test date has also been recommended. Equipment that failed the inspection and tests are unsafe to use and they are marked appropriately. The inspection and test results are summarized in the pages enclosed in this document. Further information for the prevention of danger is enclosed in this report.

Date of next inspection: 24/04/2019

Method of labelling: ☐ Pass/Fail tags ☐ Barcoded tags ☐ RFID tags ☑ QR labels

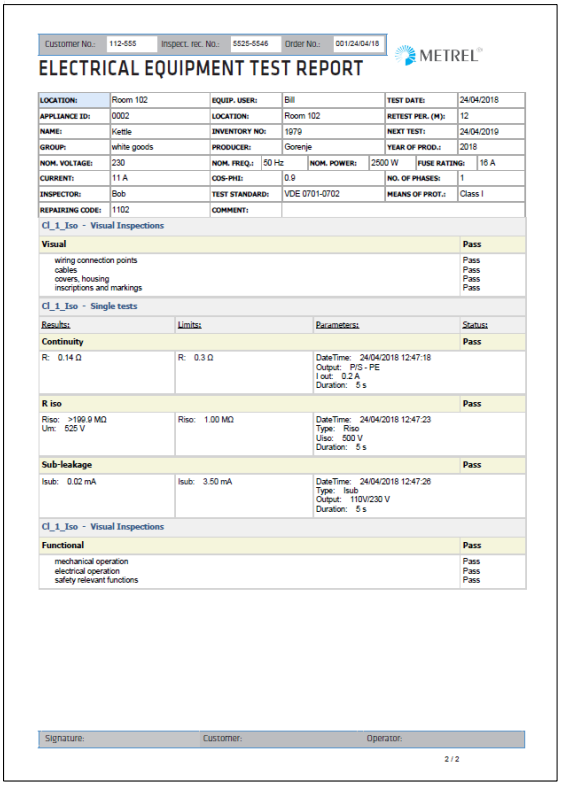
Results: ☑ No faults found ☐ Faults found

Notes:

SIGNATURE AND STAMP

Client:	Operator:
☑ Report is fully accepted. Client is informed about inspection and test results.	☑ Electrical equipment was tested according to valid regulations and technical standards.
☐ Client is informed about status of faulty equipment.	☐ Faulty equipment and measures are appropriately noted.
Location: Gorenje	Location: Gorenje
Date: 24/04/2018	Date: 24/04/2018
Signature:	Signature:

1 / 2



ELECTRICAL EQUIPMENT TEST REPORT

LOCATION:	Room 102	EQUIP. USER:	Bill	TEST DATE:	24/04/2018
APPLIANCE ID:	0002	LOCATION:	Room 102	RETEST PER. (M):	12
NAME:	Kettle	INVENTORY NO:	1979	NEXT TEST:	24/04/2019
GROUP:	white goods	PRODUCER:	Gorenje	YEAR OF PROD.:	2018
NOM. VOLTAGE:	230	NOM. FREQ.:	50 Hz	NOM. POWER:	2500 W
CURRENT:	11 A	COS-PHI:	0.9	NO. OF PHASES:	1
INSPECTOR:	Bob	TEST STANDARD:	VDE 0701-0702	MEANS OF PROT.:	Class I
REPAIRING CODE:	1102	COMMENT:			

Cl_1_Iso - Visual Inspections

Visual	Pass
wiring connection points	Pass
cables	Pass
covers, housing	Pass
inscriptions and markings	Pass

Cl_1_Iso - Single tests

Results:	Limits:	Parameters:	Status:
Continuity			Pass
R: 0.14 Ω	R: 0.3 Ω	DateTime: 24/04/2018 12:47:18 Output: PIS - PE I out: 0.2 A Duration: 5 s	
R iso			Pass
Riso: >199.9 MΩ Um: 525 V	Riso: 1.00 MΩ	DateTime: 24/04/2018 12:47:23 Type: Riso Uiso: 500 V Duration: 5 s	
Sub-leakage			Pass
Isub: 0.02 mA	Isub: 3.50 mA	DateTime: 24/04/2018 12:47:26 Type: Isub Output: 110V/230 V Duration: 5 s	

Cl_1_Iso - Visual Inspections

Functional	Pass
mechanical operation	Pass
electrical operation	Pass
safety relevant functions	Pass

Signature: Customer: Operator:

2 / 2

7.1. Differences between basic and PRO MESM license

The comparison table presents differences between basic and PRO license. All instruments are always equipped with at least basic license. The PRO license is usually optional.
License (basic or PRO) is always stored in the instrument, therefore each instrument, can be contented to any available installation of MESM SW and the user will have full functionality, depending on installed license.

Metrel Electrical Safety Manager		
	MI 3360 ,25A,M,F	
	Basic license	PRO license
Data Download	*	*
Data Upload	*	*
AutoSequence ® Editor	*	*
AutoSequence ® Download	*	*
AutoSequece ® Upload	*	*
Print out of test results	*	*
Print out of basic report	*	*
Print out of professional reports		*
Upcoming retests (Scheduler)	*	*
PRO Export to excel		*
Export to Excel	*	*
Export to Xml	*	*