



MI 3325 MultiServicerXD Main features

Measuring
instruments
and testers

General information

The MI 3325 MultiServicerXD is a top-of-the-line multifunctional instrument covering diverse industrial applications, where ruggedness and reliability are a must. This applications are divided in the following groups:

- Safety of machinery (in compliance with IEC/EN 60204 Ed.6),
- Safety of low-voltage switchgear and control gear testing (in compliance with IEC/EN 61439-1 Ed.2),
- Safety of portable appliances (in compliance to VDE 0701-0702, AS/NZS 3760, Code of Practice),
- Safety of arc welding equipment (in compliance with IEC/EN 60974-4 Ed.2).



Machine testing according to IEC/EN 60204

EN 60204-1 provides requirements and recommendations relating to the electrical equipment of machines so as to promote:

- Safety of persons and property.
- Consistency of control response.
- Ease of maintenance.

EN 60204-1 applies to the application of electrical, electronic and programmable electronic equipment and systems to machines not portable by hand while working, including a group of machines working together in a co-ordinated manner. The standard applies from the point of connection of the supply to the electrical equipment of the machine.

EN 60204-1 is applicable to the electrical equipment or parts of electrical machines that operate with nominal supply voltages not exceeding 1000 V for alternating current (AC) and not exceeding 500 V for direct current (DC), and with nominal supply frequencies not exceeding 200 Hz.

The MI 3325 MultiServicer XD complies with the IEC/EN 60204-1 and it has built-in AutoSequence[®]s, which guide the user through the test procedures.



Switchgear and control gear testing according to IEC/EN 61439-1

The protective circuit of the switchgear and controlgear assembly is an important element of the protection system against electric shock (particularly when using the protective measures such as protective neutral earthing and residual current protective devices). This ensures the automatic disconnection of the power supply in the event of a fault.

The effectiveness of the protective circuit must be verified according to IEC/EN 61439-1 as part of the design verification for the following functions:

- Protection against the consequences of a fault in the switchgear and controlgear assembly (internal faults).
- Protection against the consequences of faults in external circuits (outgoing circuits) that are supplied through the switchgear and controlgear assembly (external faults).

In terms of protection against the consequences of an internal error, it must be verified that

- The various bodies of the switchgear and controlgear assembly are effectively coupled to the connection of the incoming external protective conductor and that
- The resistance of the circuit does not exceed 0,1 Ω .

For the verification of the switchgear and controlgear assembly an ohmmeter that can supply power of at least 10 A (AC or DC) must be used. As such the current flows from each body inside the switchgear and controlgear assembly to the connection for the external protective conductor. The resistance may not exceed 0,1 Ω . Observe test duration! The test duration must be limited if the equipment suitable for low currents is impaired by a long test duration.



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3-Phase appliances

Combination of this functions enable the user to test 3-phase appliances with current consumption up to 40 A, plus thorough testing of 3-phase P-RCD protected extension leads or switchgears.

- 3-phase leakage test,
- 3-phase power test,
- 3-phase polarity test,
- 3-phase P-RCD test.

Testing of 3-phase appliances is also considered as more demanding than PAT testing because special accessories are usually needed to perform such testing. For this type of appliances Metrel has developed two types of adapters which work in combination with MI 3325 MultiServicerXD, these adapters are called active three phase adapters (model numbers A 1322 & A 1422). Both adapters support the following tests:



Arc / welding equipment IEC/EN 60974-4

The IEC 60974-4 specifies test procedures for periodic inspection and, after repair, to ensure electrical safety. The MI 3325 MultiServicerXD in combination with, the A 1422 Active 3-phase adapter supports additional tests such as:

All specified test must be performed to assure safety operation with arc welding equipment.

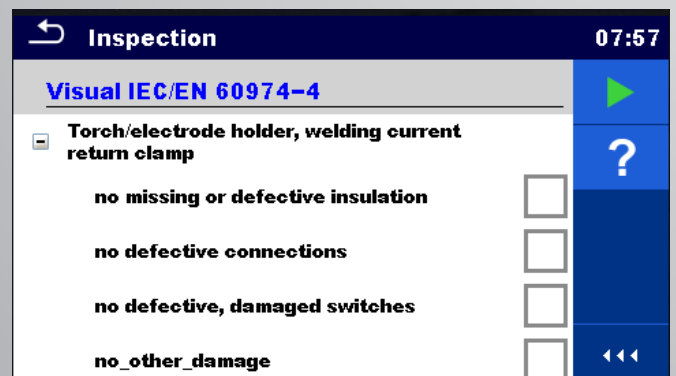
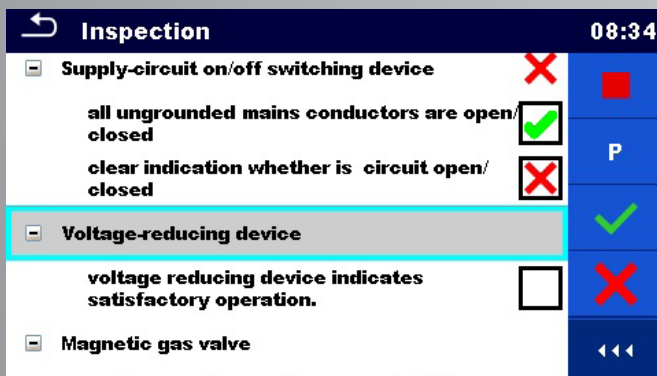
- Protective conductor resistance,
- Primary welding leakage,
- Welding leakage,
- Welding insulation,
- No load voltage,
- Visual & Functional inspections.

This functions enable the testing of arc welding equipment in accordance with the international standard IEC/ EN 60974-4.

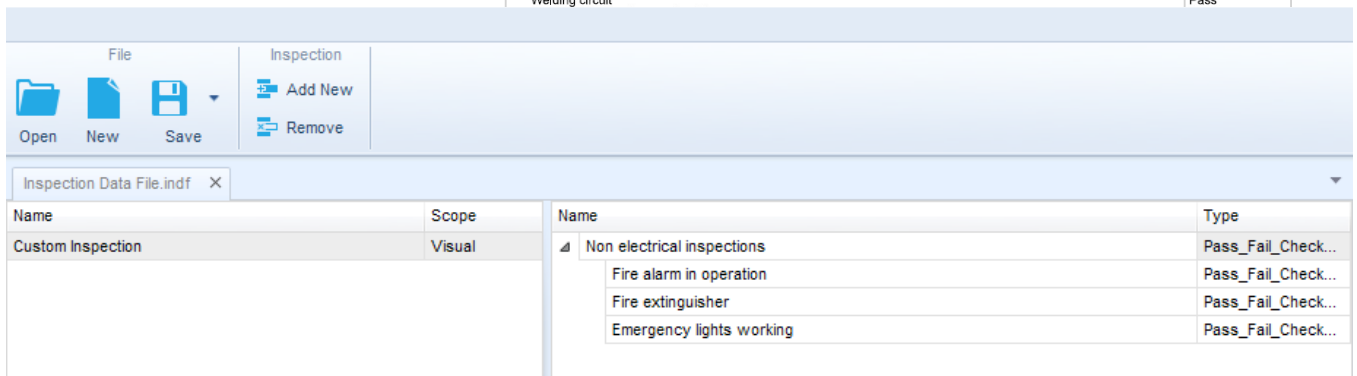


Custom visual & functional inspections

Due to the fact that technicians and engineers, which perform PAT testing also have to check, report and certify different types of non-electric equipment such as fire extinguishers, emergency lights, smoke sensors, etc. Metrel has implemented (in MESM PC software) a special functionality called "Custom Visual & Functional inspections". This functionality enables the user to create custom list of inspections, which can be uploaded to tester and later used for professional certification.

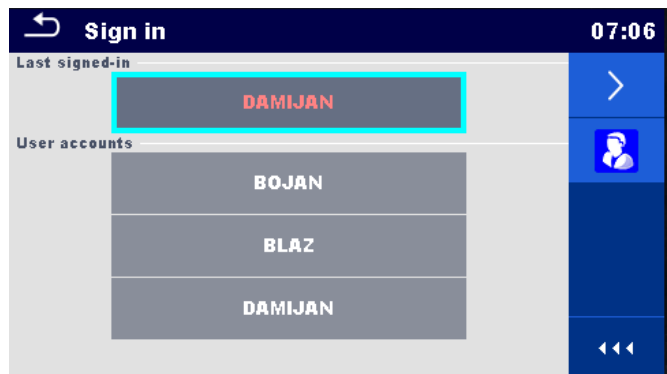
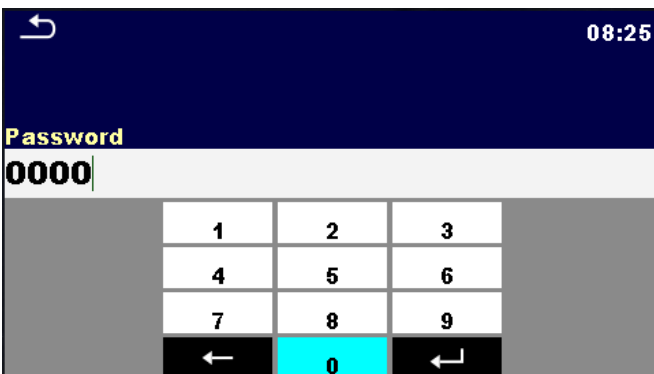
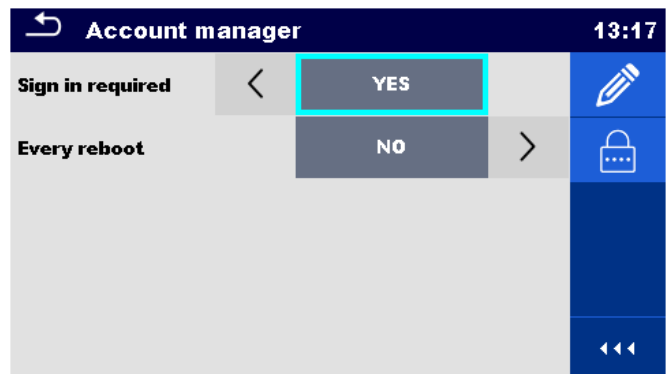
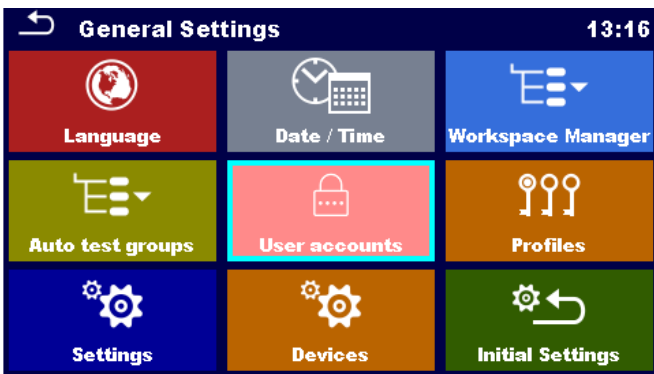


Customer No.:	542214	Inspect. rec. No.:	8455	Order No.:	33521
ELECTRICAL EQUIPMENT TEST REPORT					
NODE:	Node	EQUIP. USER:	Tom	TEST DATE:	08/01/2019
APPLIANCE ID:	_0001	LOCATION:	Production	RETEST PER. (M):	12
NAME:	Welding equ.	INVENTORY NO.:	11334-87	NEXT TEST:	08/01/2020
GROUP:	hand tools	PRODUCER:	Lorch	YEAR OF PROD.:	2017
NOM. VOLTAGE:	230	NOM. FREQ.:	50 Hz	NOM. POWER:	2 kW
CURRENT:	9 A	COS-PHI:		FUSE RATING:	16 A
INSPECTOR:		TEST STANDARD:	VDE 0701-0702	NO. OF PHASES:	1
				MEANS OF PROT.:	Class I
Cl_1_Iso_risc_env - Visual Inspections					
Visual IEC/EN 60974-4					Pass
Torch/electrode holder, welding current return clamp					Pass
no missing or defective insulation					Pass
no defective connections					Pass
no defective, damaged switches					Pass
no_other_damage					Pass
Mains supply					Pass
no defective, damaged cable					Pass
effective cable anchorage					Pass
no deformed, faulty plug					Pass
no broken or thermally damaged plug pins					Pass
cables and plugs are suitable for the intended use and performance					Pass
Welding circuit					Pass



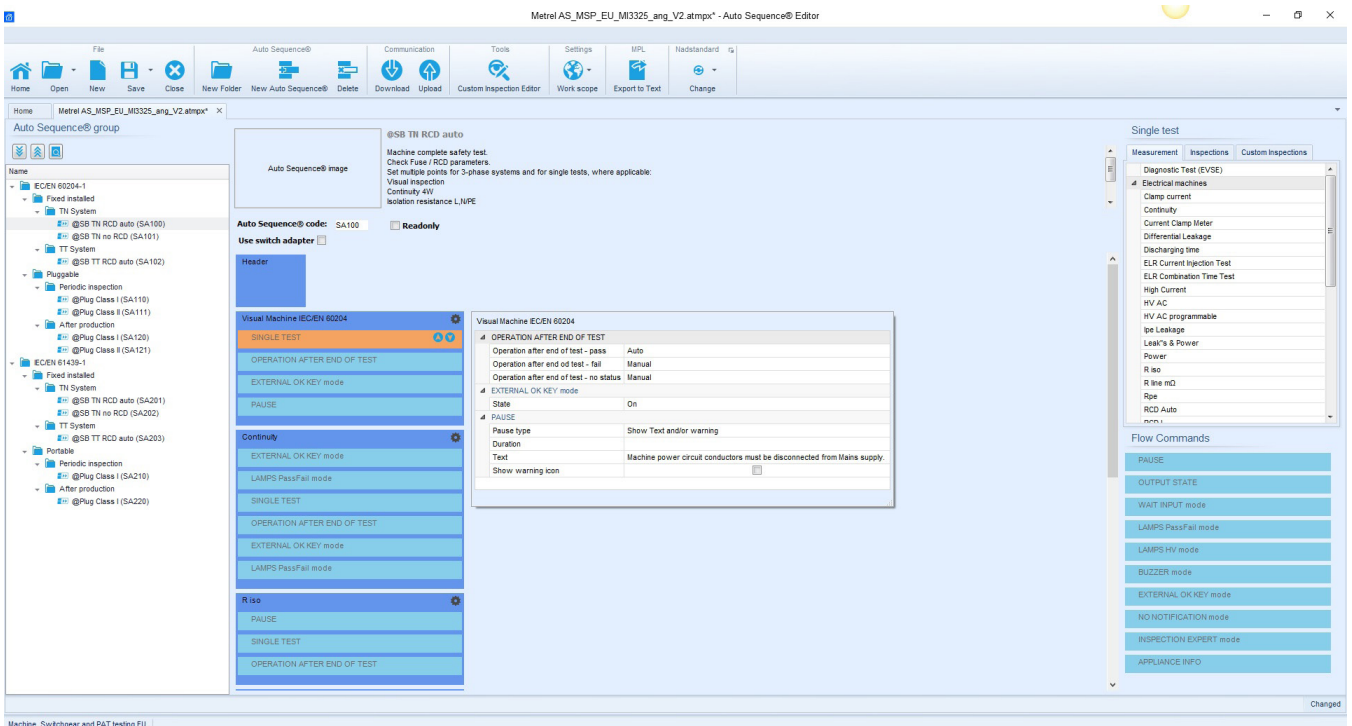
User accounts

More and more industries are focusing on compliance and quality, which lead to traceability. MI 3325 MultiServicerXD enables the creation of several user accounts which can prevent unauthorized individuals to work with the instrument. The main purpose of logging in is to ensure that the measurements performed by a specific user have their own signature. This enables backward traceability and proof that specific equipment was tested by the logged in user. The user information is automatically transferred to a PC software where it will be archived.



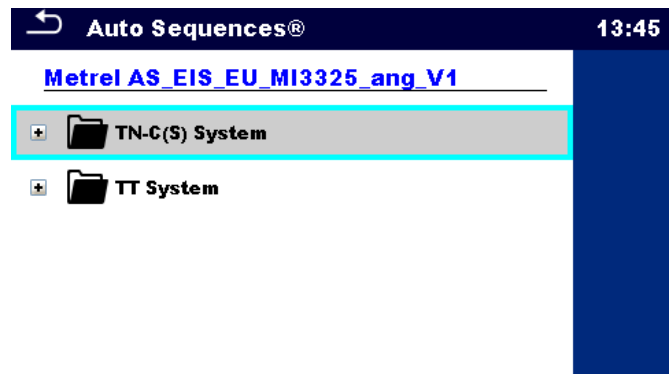
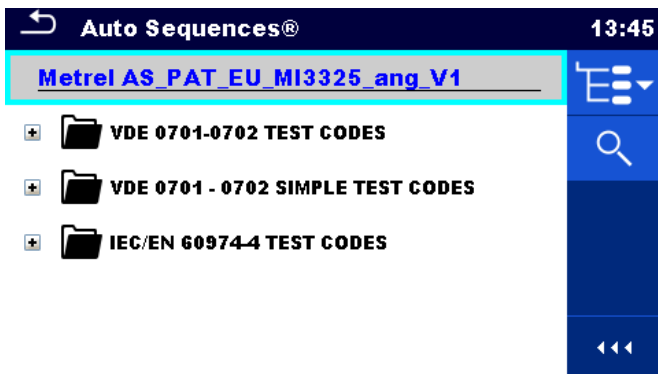
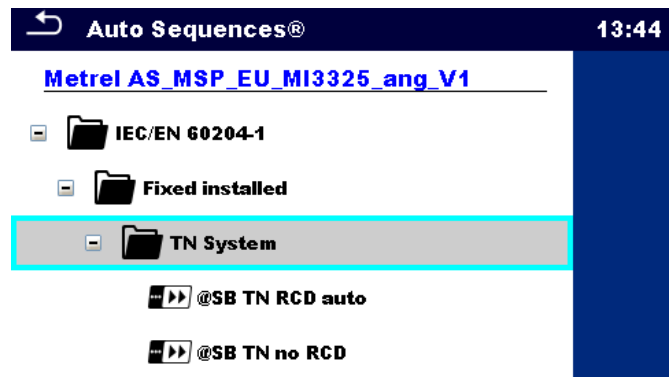
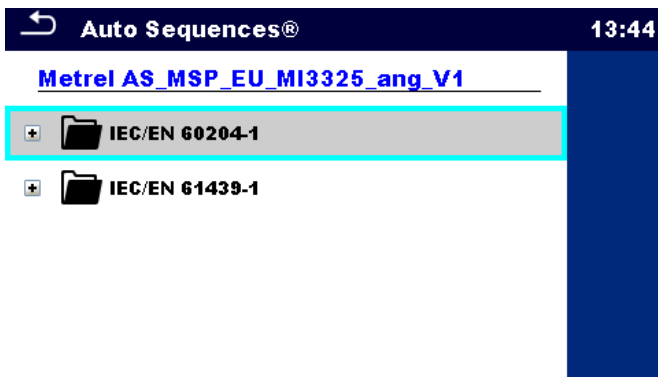
AUTO SEQUENCE®

Automatized test procedures or shorter AUTO SEQUENCE®s are one of Metrel's most recognized innovative feature for many years. The latest generation of Metrel testers with a colour touch screen in combination with Metrel Electrical Safety Manager Software, shorter called MESM has placed this feature on a completely new level.



AUTO SEQUENCE®

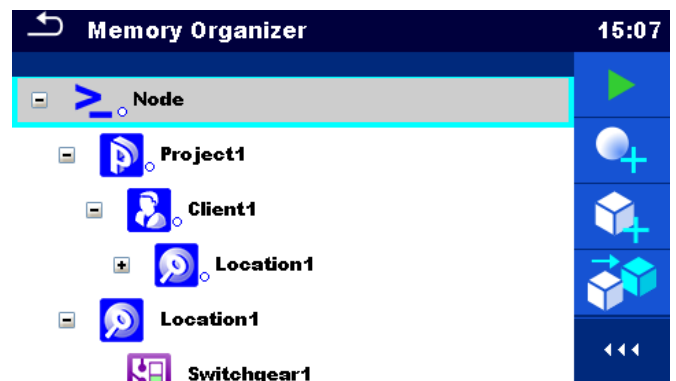
The MI 3325 MultiServicer XD enables the user to select Metrel's predefined AUTO SEQUENCE®, developed for specific applications, in accordance with IEC/EN 60204-1, IEC/EN 61439-1, IEC/EN 0701-0702, IEC/EN 60974-4 and special sequences for electrical installation safety. In addition to these predefined sequences the users can create their own custom sequences, using our MESM AUTO SEQUENCE® editor. This tool enables the creation of sequences including comments, wire diagrams, pictures and custom visual or functional inspections. User defined sequence can include as many different measurements as they are supported by the instrument. In addition to this feature, there are no limitations about the design of the sequence flow, quantity of the used steps for specific test or quantity of the comments or pictures used. For a skilled user such custom-made AUTO SEQUENCE®s can reduce time for testing and enable easier testing for unskilled users by checking comments connection diagrams and flow of the test sequence.



Multi-level memory organizer

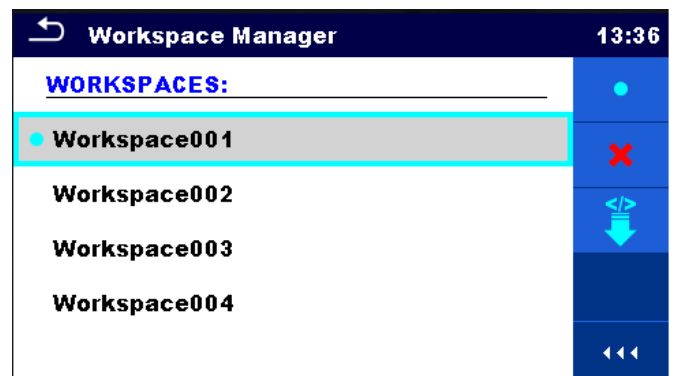
An organized structure defines where the tested appliances are used, located and who is using them – this can significantly reduce time for the retesting of appliances and for printing of test reports. The organized data can also be transferred to MESM software for archiving. MI 3325 MultiServicer XD's state of the art memory organizer enables the user numerous possibilities:
 The first level of the memory structure starts within Workspace Manager which is basically a location for storing different projects called Work Spaces, from here on the user can start to create custom multi-level structures that include the following structure elements:

- Node
- Project
- Location
- Client
- Element
- Machine
- Switchgear
- Appliance limited description
- Appliance full description



All of these elements can be used many times within the same structure.

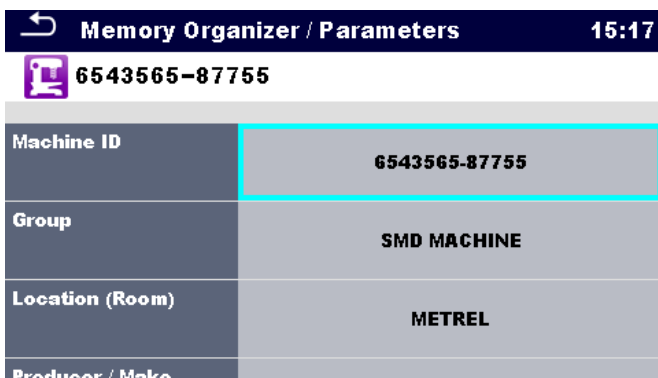
Multi-level structure includes predefined structure elements, including AUTO SEQUENCE®s or single tests. The complete structure can be created, on the instrument, in MESM software or in the aMESM Android application. Both SW sets enable data upload to the instrument.



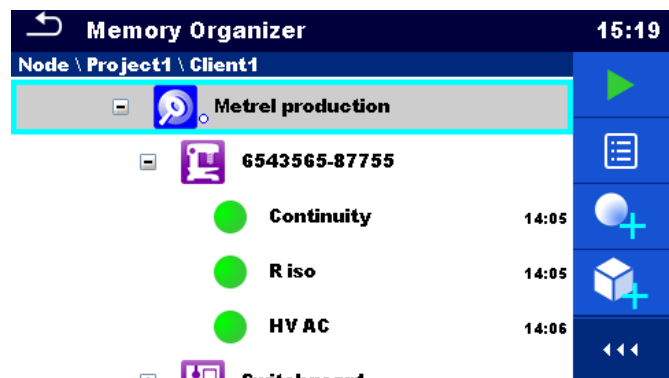
Multi-level memory organizer

Each structure element has the possibility of adding special parameters. This is especially useful for the structure elements designed as substitutes for the appliances. You can set such parameter as:

- Nominal voltage,
- Nominal frequency,
- Connection,
- Fuse types,
- Main switch parameters,
- Machine ID,
- Group,
- Location,
- Producer/make,
- Year of production,
- Repair code,
- Test date,
- Retest period (in months),
- Next test,
- Type,
- Etc.



Memory Organizer / Parameters 15:17	
6543565-87755	
Machine ID	6543565-87755
Group	SMD MACHINE
Location (Room)	METREL
Producer / Make	



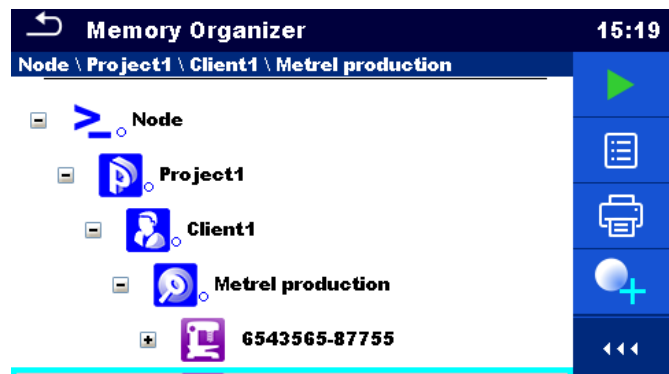
Memory Organizer 15:19

Node \ Project1 \ Client1

- Metrel production
 - 6543565-87755
 - Continuity 14:05
 - R iso 14:05
 - HV AC 14:06
 - Switchboard

If these parameters are set they will be automatically printed on professional test reports.

- Memory organizer with its special tools for structure copying and cloning enables fast creation of the desired structure.



Memory Organizer 15:19

Node \ Project1 \ Client1 \ Metrel production




- Node
 - Project1
 - Client1
 - Metrel production
 - 6543565-87755

Support for reading /writing devices

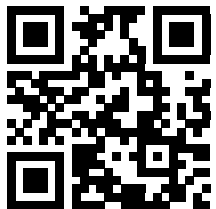
To make PAT testing as user-friendly and efficient as possible, Metrel has incorporated many different technologies in MI 3325 MultiServicerXD. The instrument supports a wide range of peripheral accessories for scanning/reading and writing, among them different types of printers, (portable, desktop, battery operated, mains operated, Bluetooth or wired) and different types of reading devices (barcode/QR scanners and NFC reader/ writer). MI 3325 MultiServicerXD supports the following options for reading and writing (specific media):

- Barcodes,
- QR codes,
- NFC tags,
- RFID tags (read only).

Specially designed QR code enables storing complete information about executed test inside the code itself. With the aMESM Android application the user can scan the QR code at any time and see the information about executed tests, limits, PASS/FAIL status and re-test date. Same functionality is also supported by the NFC tag technology. For the retesting of portable appliances the user has two options; one is to start the retest from the instruments memory organizer based on the previous test, or directly from scanning the QR code or NFC tag – this makes re-testing very time efficient and reliable.

INSTRUMENT	BLUETOOTH		SCANNER		NFC/RFID CABLE	PRINTER	
	BLUETOOTH	BLUETOOTH	CABLE	CABLE		BLUETOOTH	CABLE/BT
 <p>MI 3325 MultiServicerXD</p> <p>Available at local authorised reseller EU incl. UK REGION AUS/NZ REGION</p> <p>Barcode </p> <p>QR </p> <p>NFC/RFID </p>							
	A 1653	A 1652	A 1105 2D	A 1105	A 1571	RW 220	S 2062
	QR/Barcode scanner	Barcode scanner	QR/Barcode scanner	Barcode scanner	NFC reader/writer	Zebra mobile printer	Zebra BT lable printer set
	•	•	•	•		•	•
	•	•	•	•		•	•
	•	•	•	•		•	•
	•		•			•	•
					•		

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Note! Photographs in this catalogue may slightly differ from the instruments at the time of delivery.
Subject to technical change without notice.

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