

# Demonstration boards

## MI 3298 T Transformer/Insulation trainer module



The MI 3298 T Transformer/Insulation trainer module is designed as a stand-alone module for training different insulation measuring methods as well as basic measuring methods on transformers. It is possible to simulate different types of errors on the transformer. Due to the puzzle concept, other MI 3298 P1 Earth/Ground trainer modules and/or MI 3298 T Transformer/Insulation trainer modules can be joined together to simulate a complete transmission line with a switchyard at the end.

### KEY FEATURES

- Cable impedance, resistance and insulation;
- HV insulation resistance;
- Winding resistance measurement;
- Transformer turn ration analysis.

Different modules can be evaluated separately as an independent system and / or connected together to demonstrate the interconnectivity problems and influences between them.

This approach could give trained personnel clear information about testing methods, measured values and results on known systems and an overview of situations where systems become more complex when connected together.

### APPLICATION

- Trainings and seminars for gaining theoretical knowledge and demonstrating/performing practical exercises;
- Conducting exams when upgrading the examined professional's competence level;
- Education and practical training of electrical contractors about safety procedures, measuring methods and general knowledge;
- Demonstration on how to use different measurement instruments and testers.

Different measuring procedures can be demonstrated/trained under various simulated errors:

- Broken windings;
- Short-circuit faults on windings.

### Metrel instruments, which could be used with MI 3298 T training module:

- MI 3205 TeraOhmXA 5kV
- MI 3280 Digital Transformer Analyser
- MI 3250 MicroOhm 10A

Different measurement procedures and methods can be demonstrated/trained on the MI 3298 T Transformer/Insulation trainer module:

Transformer analysis:

- Transformer turn ratio measurement;
- Winding resistance measurement.

Different measuring procedures and methods can be demonstrated/trained on the MI 3298 T Transformer/Insulation trainer module:

Insulation measurements:

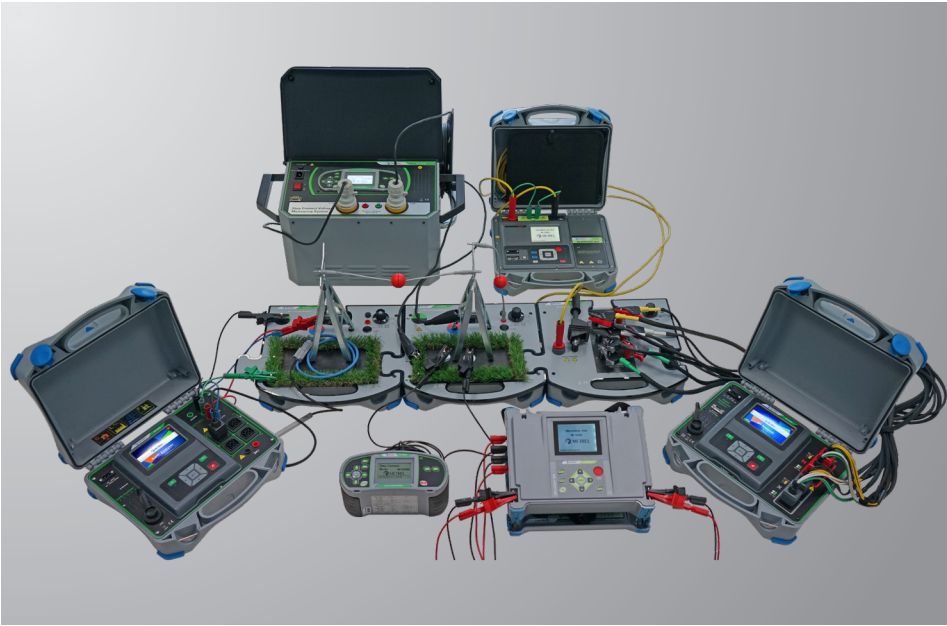
- Insulation resistance test (spot test);
- Diagnostic tests (DAR, PI, DD);
- Step voltage test.

### STANDARDS

#### Safety

- IEC 61010-1:2010

## MI 3298 POWER NETWORK APPLICATION TRAINER SET MODULES



The MI 3298 Power Network Application Trainer (MI 3298 P1 and MI 3298 T) based on “puzzle” concept for simulation and training of different measurement situations on the high voltage field. It could be used as stand-alone training module or any numbers of training modules connected together. Training modules are designed for demonstrations, trainings and educational purposes.

The “puzzle” concept is ideally suited for training and education of larger groups of people as well as for independent practice. Due to various integrated electrical elements the module enables complete testing, troubleshooting and practice on earth, insulation measurements as well as power transformer measurements.

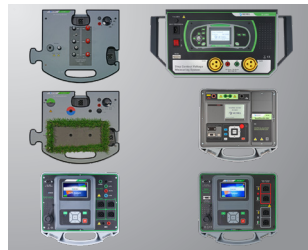
### AD1 MI 3298 – Earth/Transformer/ Insulation Resistance Trainer



Module includes the following equipment:

- MI 3298 P1 Earth/Ground trainer module
- MI 3298 T Transformer/Insulation trainer module
- MI 3295 Step Contact Voltage Measuring System
- MI 3205 TeraOhmXA 5kV
- MI 3280 Digital Transformer Analyser
- MI 3290 GX 1 Earth Analyser

### AD2 MI 3298 – Earth/Transformer/ Insulation Resistance Trainer



Module includes the following equipment:

- MI 3298 P1 Earth/Ground trainer module
- MI 3298 T Transformer/Insulation trainer module
- MI 3295 Step Contact Voltage Measuring System
- MI 3205 TeraOhmXA 5kV
- MI 3280 Digital Transformer Analyser
- MI 3290 GX 1 Earth Analyser

### AD4 MI 3298 – Transformer/ Insulation Resistance Trainer



Module includes the following equipment:

- MI 3298 T Transformer/Insulation trainer module
- MI 3205 TeraOhmXA5 kV
- MI 3280 Digital Transformer Analyser

## ORDERING INFORMATION



### MI 3298 T

- MI 3298 T Transformer/Insulation trainer module, code 20 919 238
- Puzzle interconnection part, code 20 052 010

## GENERAL DATA

Dimensions (w x h x d)	40 cm x 11 cm x 33 cm
Pollution degree	2
Weight	6,28 kg
Degree of protection	IP 40
Operation conditions:	
Working temperature range	-10°C ... 50°C
Maximum relative humidity	90 %RH (0°C ... 40 °C), non-condensing
Working nominal altitude	up to 3000 m

### METREL D.D.

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