



Operating Manual



Isolating transformer for TWM 42 N
Part number 077110



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This operation manual provides important advice for the safe and effective handling of the device. The manual must be kept at the place of work and be accessible to operators and maintenance personnel at all times.

1. IMPORTANT SAFETY INFORMATION



DANGER OF ELECTROCUTION

Potential danger of electric shock and/or burns resulting from incorrect usage or from damaged cables, plugs or housing.

If the device gets damaged, turn it off immediately, disconnect it from the power supply and secure it against being turned back on.

Use of this device poses risks:

- to the life and health of the operator and nearby personnel
- of damage or impairment to the device and other equipment.

Incorrect installation and assembly, incorrect or inappropriate use of the device, and removal of covers or safety devices can all result in severe damage and/or injury.

This transformer must NOT be used:

- in explosive environments
- for mechanical or thermal processing of workpieces.

IN AN EMERGENCY:

Immediately unplug the transformer from the power supply.

To facilitate safe handling and trouble-free operation of this device, all operator should be familiar with the local safety regulations and the user information in this manual. Always follow the safety instructions applicable to your place of work.

The operator is solely responsible for the consequences of improper use and actions not described in this manual. The manufacturer - Magnaflux GmbH - assumes no liability for any resulting damage. In the case of improper use, all warranty claims are void.

Responsibilities of the operator

The operator is obligated to ensure that the device is operated only by persons who:

- are familiar with the basic regulations concerning industrial safety and prevention of accidents.
- have been fully trained in the operation of this device.
- have read and understood this manual.

Responsibilities of other personnel

All persons who are commissioned to work on/with this device are obligated to:

- observe the basic regulations regarding industrial safety and prevention of accidents;
- read and strictly follow this operation manual before starting work.

Contact Magnaflux GmbH if:

- you have any questions regarding the use of this transformer.
- the transformer gets damaged and needs repair work.

Faulty protective and safety devices

Faulty, disassembled or removed safety devices can lead to dangerous situations. If this happens:

1. Switch off the device immediately
2. Secure it against being switched on again.
3. If necessary, disconnect it from the power supply

Modifications

Any modifications or changes to the device may compromise its safety and electromagnetic characteristics, which will require a re-evaluation of its conformity. If you are planning any changes to this transformer, please contact Magnaflux GmbH.

Replacement parts and consumables

The use of spare parts from third party manufacturers may damage the device and make it hazardous to use. Use only original parts or parts approved by Magnaflux GmbH. Magnaflux GmbH accepts no liability for damage resulting from the use of unapproved parts.

2. DESCRIPTION OF THE DEVICE

2.1 INTENDED USE

This transformer is designated solely for the non-destructive material testing of magnetisable parts, carried out according to the magnetic particle inspection method. The operational safety of this device cannot be guaranteed if used for any other purpose.

2.2 OPERATING LOCATIONS

The transformer should NOT be operated in closed environments, such as tanks, pipes or similar.

This device complies with protection class IP44; it provides protection against ingress of foreign objects of > 1mm diameter and water splashes from all directions.

The transformer meets all requirements of the following electromagnetic compatibility, standards:

- EN 50081-2: Generic Emission Standard Part 2: Industrial Environment
- EN 50082-2: Generic Immunity Standard Part 2: Industrial Environment

NOTE: with regard to generic emissions, this device is NOT suitable for use in residential areas.

2.3 MARKINGS ON THE DEVICE

The transformer's identification plate is mounted on the control cabinet near the main switch. It gives important information on the device type, the energy supply and the manufacturer.



The **CE marking** indicates conformity with current EU directives regarding the product which require CE marking.



RISK OF ELECTROCUTION

Potential danger from electric current. Work on this device must only be carried out by a qualified electrician.

2.4 TECHNICAL DATA

Electrical	
Standard	AC 230 V / 50 Hz or 60 Hz, 1P + N
Power input	350 kVA
Output voltage	42 V AC
Maximum output current	8.33 A
Duty cycle (relative)	30%
Duty cycle (absolute)	3s ON and 7s OFF
Fusing internal secondary	16 A (K-Characteristic)
Fusing supply line	Recommended: 10 A
Connections	
Power supply	Connecting cable (3 m) with 2 wire mains plug
Output protective low voltage	Panel-mounted socket outlet with spring loaded cap. Protection class IP 44
Environmental conditions	
Operating temperature	5 °C to 45 °C
Storage temperature	5 °C to 55 °C
Humidity during operation and storage	maximum 90% relative humidity (non-condensing)
Emissions	According to EMC directive and applicable EMC standards: suitable for industrial applications.
Dimensions/weight (approx.)	
Width	330 mm
Height	170 mm
Depth	170 mm
Weight	8 kg

2.5 FUNCTIONAL DESCRIPTION

The transformer is fitted with an output socket for connecting a TWM 42 magnetic yoke. With yoke magnetisation, a magnetic field generated by a coil system is transmitted to the test piece via the poles of an iron core. The iron core and the test piece generate a closed magnetic loop.

The isolating transformer generates an extra-low voltage of 42 V AC for operating the magnetic yoke.

The transformer is operated on the primary side via an earthing pin plug on the AC mains.

The housing of the transformer is made of robust impact-resistant sheet-steel.

When used together with the TWM 42 yoke, the transformer complies with the safety regulations of the VDE.

The transformer should NOT be operated in closed environments, such as tanks, pipes or similar.

Using this type of magnetisation, no local heating or burn marks should occur during the magnetisation process.

3. TRANSPORTATION AND STORAGE

The transformer can be carried comfortably using the carrying handle. Avoid knocking the casing and dropping the device on hard floors.

The connecting cable is fitted with a mains lead cleat to relieve strain. Nevertheless, do not pull on the cable. Always wind the cable away from the device and avoid twisting the cable.

When transporting over longer distances, pack the device in a sturdy box with appropriate padding material.

Store the transformer in suitable environmental conditions as specified in section 2.4 - Technical Data. No additional measures are required.

4. OPERATION



DANGER

High electrical voltages can cause life-threatening shocks and burns.

IN AN EMERGENCY:

Immediately unplug the transformer from the power supply.

4.1 CONNECT POWER SUPPLY

Connection to the power supply must be made:

- according to the circuit diagram and the information on the identification plate
- according to the standards applicable at the place of installation
- using anti-surge fuses

Before you start, visually inspect the transformer for any obvious damage. Do not operate a damaged device.

Plug the yoke connector into the socket on the transformer, then plug the mains plug into a suitable socket. Observe mains voltage!

When laying the cable, take care not to create trip hazards. Set up the transformer so that it does not interfere with the cable; for example, ensure it cannot be pulled from the table by the cable.

4.2 PERFORM THE INSPECTION

See the operating manual of the yoke.

4.3 MAINTENANCE

The isolating transformer is designed to be maintenance free. If necessary, clean the housing and cable with a mild industrial cleaner. Do not use solvents, acids, bases, metallic cleaning tools or abrasive substances.

Any repair work must only be carried out by authorised and technically-trained personnel.

5. DECOMMISSIONING AND DISPOSAL

To decommission the transformer, disconnect it from the yoke and remove the mains plug from the socket.

To dispose of the transformer, comply with your local waste disposal regulations. Electromagnetic components must be disposed of properly as such parts and materials pose risks to health and the environment. The housing is made of sheet steel.

Please contact Magnaflux GmbH with any questions.

EC/EU DECLARATION OF CONFORMITY FOR MAGNAFLUX STANDARD SMALL DEVICES



We hereby declare that this equipment complies with the following EU Directives. The device has been tested and approved. Any modification made to the device without our written consent will invalidate this declaration.

Applicable EC/EU Directives:

Low Voltage Directive (LVD) 2006/95/EC

Electromagnetic Compatibility (EMC) Directive 2004/108/EC

Equipment model: Isolating transformer

Applied harmonised standards:

DIN EN 60204-1:2006

Other applicable standards and specifications:

DIN VDE 0100-410:2007, DIN VDE 0100-540:2007

Authorised person for documentation:

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Person responsible:

Sales/Design Manager

Mr. Silvio Georgi

Signature:

A handwritten signature in blue ink, appearing to read 'i.v. Georgi', with a long horizontal stroke extending to the right.

Date: 01.01.2018



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