MAGNAFLUX®

Operating Manual

TLF: Low Frequency Generator
Part Numbers 104700, 104710

CE

CONTENTS

This operation manual must be kept at the place of work and be accessible to operators and maintenance personnel at all times.

Year of construction	
Serial number	
Customer	
Order number	
Equipment number	
Location	

1. DESCRIPTION

1.1 INTENDED USE

The operational safety of the adjustable TLF low-frequency generator is dependent on it being used as intended. This generator is intended exclusively for use with demagnetising units of the MAGNAFLUX ranges ETT, ETB and ETW

TLF generators are equipped with a cable and plug for connection between the mains power supply and the demagnetisation unit.

Improper use:

- can lead to personal injury and property damage.
- renders the manufacturer's warranty null and void.

The manufacturer - MAGNAFLUX GmbH - accepts no liability for damages resulting from unintended use and from any operations which are not described in this manual. The operator has sole responsibility for correct and safe use of the TLF generator.

1.2 WARNING SYMBOLS

Where necessary, warning symbols and safety instructions are displayed on the TLF generator to warn of residual dangers that can not be eliminated from the construction of the machine.

Dangers from electrical voltage. Work on the electrical installation must be only be performed by a qualified electrician.

1.3 TROUBLESHOOTING

In the event of a fault, please note the error message and contact the customer service department at MAGNAFLUX GmbH.

1.4 TECHNICAL DATA

Dimensions and weight

TLF model	1	2	3	4
Length (mm)	307	307	306	449
Width (mm)	227	227	221	229
Height (mm)	142	142	167	210
Weight (kg) (IP 54)	6	6	6.7	12.5

Electrical data

TLF model	1	2	3	4
Operating voltage	3 x 200V-230V	3 x 380V-460V	3 x 380V-460V	3 x 380V-460V
Frequency adjustable up to	3 - 50 Hz	3 - 50 Hz	3 - 50 Hz	3 - 50 Hz
Power range	4 kW	2.2 kW	4 kW	5.5 kW
Protection classification	IP 54	IP 54	IP 54	IP 54
Power supply	1 or 3 phases	3 phases	3phases	3 phases

Ambient conditions

Air temperature during operation	IP 00 = 0 ... 50 ° C IP 21 / IP 54 = 0 ... 40 ° C
Air temperature in storage	-20 ... 60 ° C
Air humidity during operation	< 90% relative humidity, non-condensing
Vibration	max. 0.6G
Operation at altitude	< 1000 m without power reduction.

Emissions

EC 2004/108/EC	In accordance with EMC directive and the valid EMC standards for use in the industrial sector.
DIN EN 50178; VDE 0160:1998-04:1998-04	Electronic equipment for use in power installations
DIN EN 61800-3; VDE 0160-103:2012-09:2012-09	Variable speed electrical drives - Part 3: EMC requirements including specific test methods (IEC 61800-3: 2004 + A1: 2011)
Noise	Emissions at the workplace in normal mode: 75 dB (A) Measured to DIN EN ISO 3744:2011-02

Mains power connection

The permissible fluctuation of the mains voltage is + 10% of the rated voltage. If the mains voltage should exceed or fall below these limits, the TLF generator will be switched off automatically as the result of the under- or over-voltage.

1.5 GENERAL FUNCTION MODE

Alternating fields have a penetration depth of approx. 2.25 mm at mains frequency (50 Hz.). This produces a so-called “field displacement” at the surface. By reducing the frequency, the depth effect of the magnetic field increases in magnetisation and demagnetisation systems, resulting in more deep-seated fields being affected or eliminated entirely.

The effectiveness of demagnetisation depends on the material and its size and shape, as well as the transport method and speed. This makes it impossible to gauge any indication of demagnetising quality..

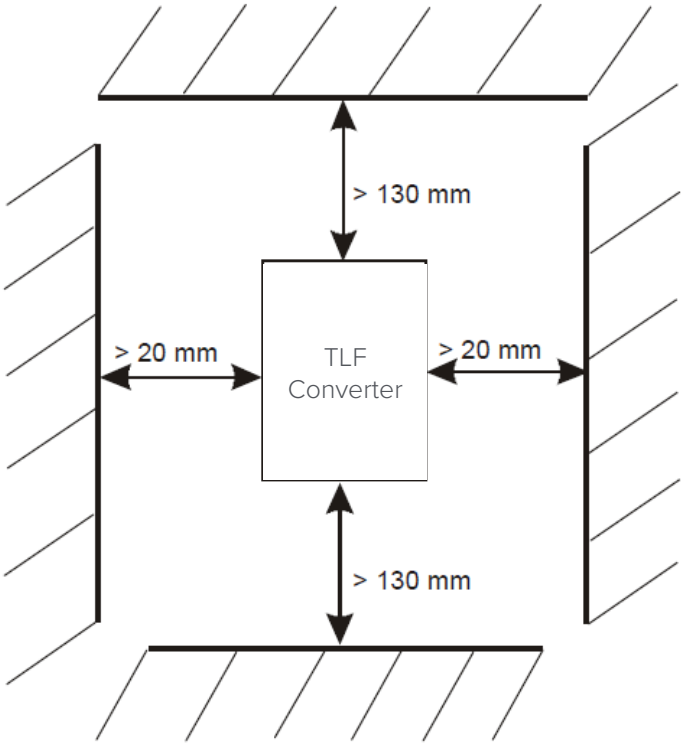
2. INSTALLATION

Improper installation will have a significant impact on the life of the TLF generator. The following points should be considered when selecting the mounting location. VIOLATING THE CONDITIONS BELOW MAY VOID THE WARRANTY.

- The unit must be installed vertically, with full air flow to the cooling fins on the back of the controller. Fans and cooling fins cool the internal components. Any restriction to the air flow will considerably reduce the life of the device, and will lead to over- temperature shutdowns. If the generator has to be mounted differently, external cooling will be required.
- The TLF generator generates heat so there must be sufficient free space around the unit (see diagram opposite). If the unit is housed in a small space, or alongside another device, the minimum distances must be maintained to ensure adequate ventilation.

The TLF generator is designed to operate at ambient temperatures of 0°C to +40°C and a relative humidity of up to 90% (IP21 / 54). **Do NOT install the TLF generator in an area that is:**

- exposed to high temperatures, high humidity or excessive vibration.
- near to heat-generating equipment or in direct sunlight.
- in the proximity of corrosive or flammable gases, conductive dust, or strong magnetic or electric fields.
- prone to condensation

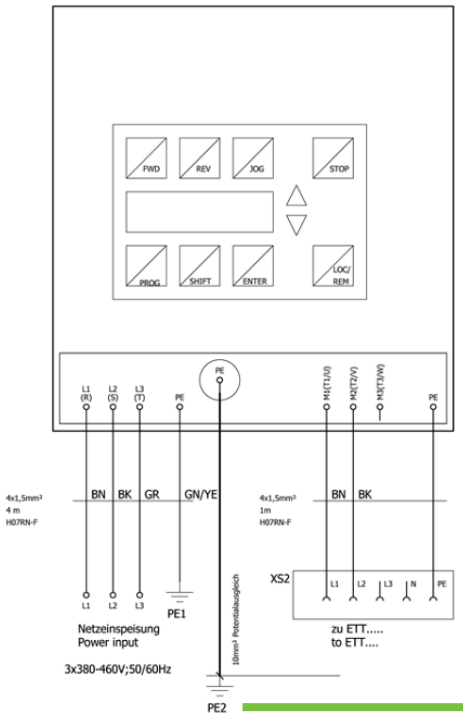


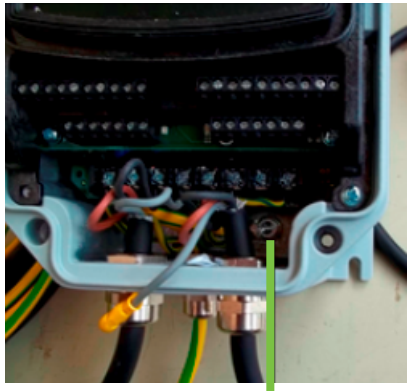
Start-up with mains-controlled operation

The TLF generator is equipped as standard with a start-up lock for mains-controlled operation, to prevent automatic switch-on when connected to the mains.

WARNING: The safety of operating personnel must be ensured in all operating conditions. Please observe the safety instructions in this manual.

Before opening or working on the generator, the mains voltage must be switched off and secured against being switched on. If the charge indicator light is on, dangerous voltages are present.

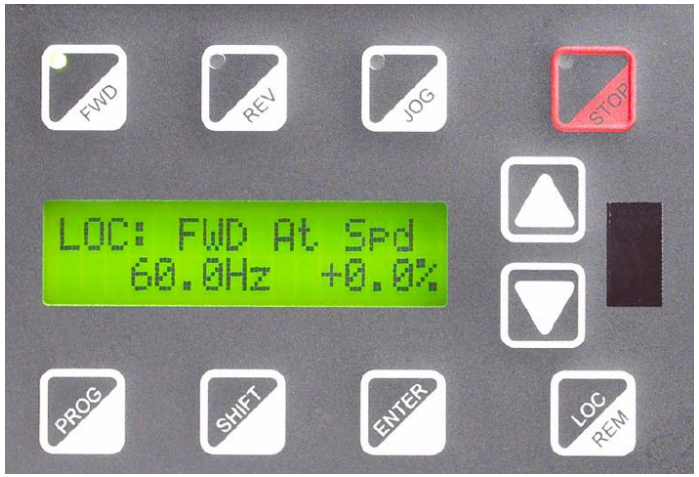




Please note: only for stationary operation with connected equipotential bonding PE2

3. CONFIGURATION AND COMMISSIONING

3.1 DIGITAL CONTROL PANEL



Press the FWD button to switch on the demagnetisation unit. The green LED behind the FWD button will light up.

When both the FWD and REV lights are on, the DC braking function is active.

Press the STOP button to switch off the demagnetisation unit. The red LED behind the STOP button will light up.

If the generator stops due to a fault, this LED will flash.

When the TLF generator is in STOP mode, press this button to preselect the desired frequency.

When the TLF generator is in RUN mode, press this button to increase the current frequency.

The setting accuracy of the frequency is 0.01 Hz. The rate of change of the display is automatically accelerated after 5 seconds of continuous pressing of the button. See also the description of the SHIFT key..

When the TLF generator is in STOP mode, press this button to preselect the desired frequency.

When the TLF generator is in RUN mode , press this button to decrease the current frequency.

The setting accuracy of the frequency is 0.01 Hz. The rate of change of the display is automatically accelerated after 5 seconds of continuous pressing of the button. See also the description of the SHIFT key..

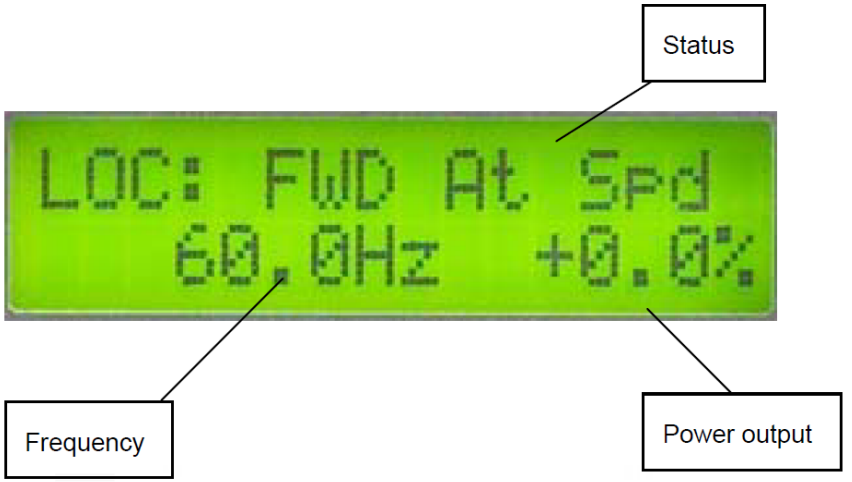
In STOP or RUN mode, press this button to store the selected frequency as the initial operating frequency when the generator is powered up. The message “Saved” will appear in the display for 1 second.

The frequency is maintained until another frequency is entered.

If this button is pressed at the same time as one of the arrow buttons, the change frequency of the display is increased. Pressing the SHIFT button a second time will increase the rate of change to its fastest level.

3.2 LCD DISPLAY PANEL

The TLF generator is designed to provide the user with as much information as possible through the easy-to-read, two-line, alphanumeric 16-character LCD display.



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