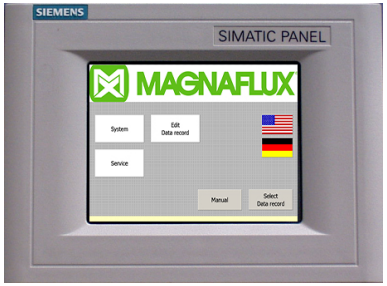
Operating Manual



T–CODE Parameter Memory (TIA)
Part number 135605

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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. The manula must accompany the device if it is re-located or changes ownership.

1. DESCRIPTION

1.1 INTENDED USE

The T-CODE parameter memory unit must only be used in conjunction with a suitable crack testing machine made by MAGNAFLUX GmbH for magnetic particle inspection (MPI).

Incorrect use of this devic can cause damage to property and invalidates any warranty claim against Magnaflux GmbH (the manufacturer). The operator is solely responsible for the consequences of the machine being used contrary to its intended use and for actions not described in the manual. Magnaflux GmbH accepts NO responsibility for resulting loss or damages.

The management of magnetising parameters depends on the design of your crack testing machine. Refer to the operating manual for your machine.

1.2 FUNCTION

Magnetic particle inspection requires workpiece-specific test parameters such as magnetising currents or magnetising times. The TCODE parameter memory can store up to 1,000 test parameter records; simply select the one you need for each test operation, using the part number for that workpiece.

Simply tap the buttons or input fields on the screen with your finger or a blunt object. A keyboard is displayed on the screen for alphanumeric values.

1.3 FEATURES

- Touch screen: 12.1“ widescreen TFT display, resolution 1.280x800, 16 MIO colours
- Save up to 1,000 workpiece records
- Password protection
- Saving multi-circuit systems is possible
- Other languages available online
- Robust plastic housing
- Control panel is insensitive to various oils and greases

1.4 TECHNICAL DATA

Manufacturer	Siemens AG
Screen type	TP1200 COMFORT TOUCH PANEL 12.1"
External measurements	330 mm wide x 241 mm high
Mounting depth	65 mm
Mounting cutout	310 mm wide x 221 mm high
Weight	2.8 kg
Operating voltage	24 V DC
Protection class - front side	IP65
Protection class - back side	IP20
Usable memory for user data	12 MB
Environmental conditions	
Operating temperature	0 to 40 ° C
Storage temperature	-20 to 60 ° C
Humidity during operation	max. 90% rel. humidity, non-condensing
Humidity during storage	max. 90% rel. humidity, non-condensing
Oepration above sea level	max. 2000 m

EMC-compliant design

The trouble-free operation of your T-CODE device is based on the EMC-compliant design of the controller, as well as the use of interference-free cables. The guidelines for fail-safe configuration of your controllers also apply to the installation of the control panel.

- Only shielded cables are permissible for all signal connections.
- All connections must be screwed or locked.
- Signal lines must not be routed with power cables in the same cable duct. The manufacturer assumes no liability for malfunctions and damage resulting from the use of self-made cables or cables from other manufacturers.

2. CONTROL PANEL

The control panel allows you to conveniently operate the system via a graphical user interface. Starting from a startup screen that appears at each reboot, the system can be operated by touching the visible buttons.

- Buttons with black text indicate functions which can be activated by any user.
- Buttons with red or purple text indicate functions that can only be activated after inputting a valid password.

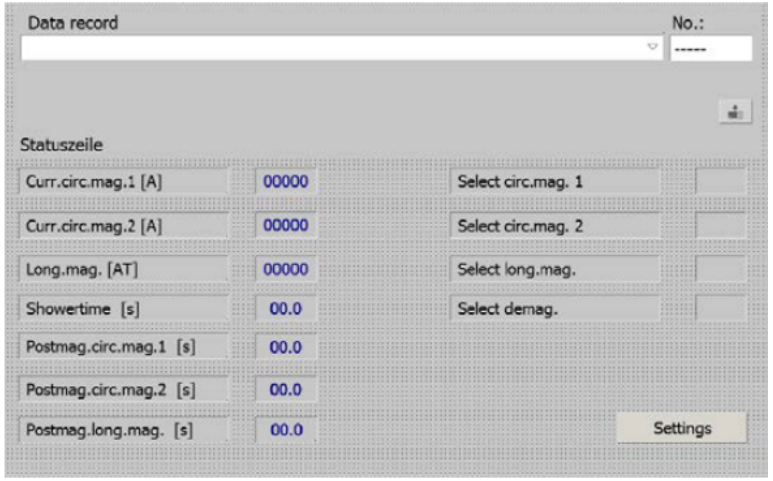
Note: grayed out fields can not be operated.

Pointed objects can damage the touch screen. Only touch the screen with your finger or with a soft or blunt object. Do NOT use a pencil or ballpoint pen as a stylus.

2.1 OPERATOR SCREENS

2.1.1 Start screen: data record preselection

This screen appears on the display when you turn on the machine. It shows the current parameter settings (the nominal values of the program) for the workpiece magnetisation.



Fields:

Data record	Selection field for the workpiece in which part-specific parameters are stored.
No. (number)	Unique number of the data record.
Current strength (Curr.circ.mag./Long.mag.)	Nominal value for magnetising currents: [A] for circular magnetisation and [kAT] for longitudinal magnetisation
Shower time	Displays the current spray time in seconds [s]
Postmag.circ.mag. Postmag.long.mag.	Displays the current post-magnetisation time in seconds [s]
Select circ.mag. Select long.mag. Select demag.	Displays the preselected circular magnetisation, longitudinal magnetisation or demagnetisation. If nothing is selected, the fields are greying. If nothing is preselected, the fields are grayed out.

On-screen button:

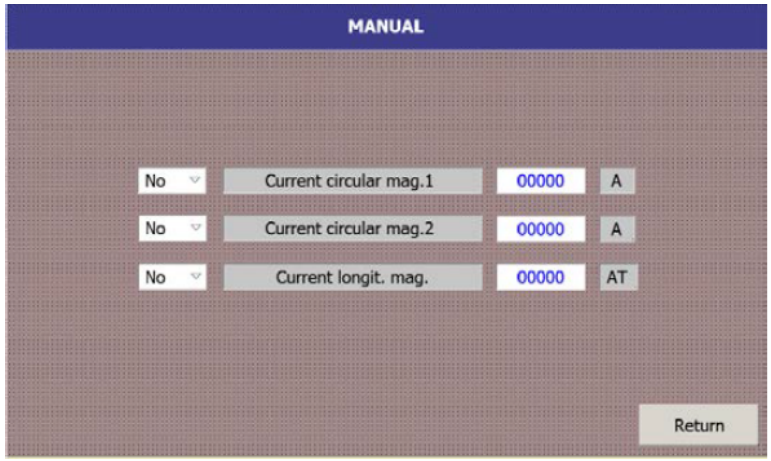
Transfer parameter values from the selected dataset into the machine controller. In automatic mode, these parameter values are used for testing the workpieces.

Note: you must click this button to save your data. Changes will not be saved if you tap on the "Back" button.

The data of the selected data record will now be displayed in the status bar and the machine will operate using this data.

2.1.2 MANUAL screen

This is the screen for manual magnetisation. It appears on the display by touching the on-screen button **Manual** on the Settings screen (see section 2.2).



Set the magnetising circuits

The magnetisation circuits can be individually selected:

- Preselected = yes
- Deselected = no

Displays the current pre-selection

- Current circular mag.1 [A]
- Current circular mag.2 [A]
- Current longit. mag. [AT]

Enter the current strength

Enter current values: [A] or/and [AT].

Note: The maximum value is specified during input. If the maximum value is exceeded, the entry is invalid. The minimum value should be about 10% of the maximum value to allow magnetisation.

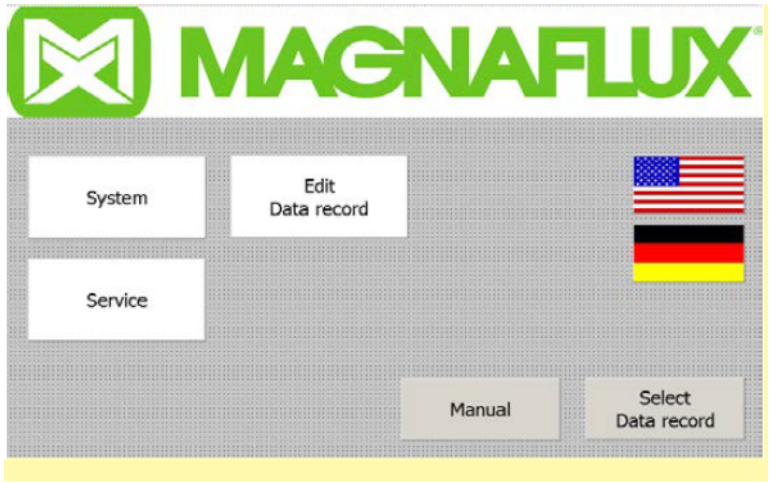
The unit Ampere-Turns [AT] is the product between the current strength amperage and the number of turns.

2.2 SETTER/ADMIN SCREENS

Access to these screen is only granted to the setter or administrator, who must eneter the correct password. The administrator (user = admin) have all access rights. Contact the manufacture to get the administrator password.

2.2.1 Settings screen

This screen shows the T-CODE settings. It is accessible from the start screen (Data record preselection - see section 2.1.1) to the operator, setter and only..

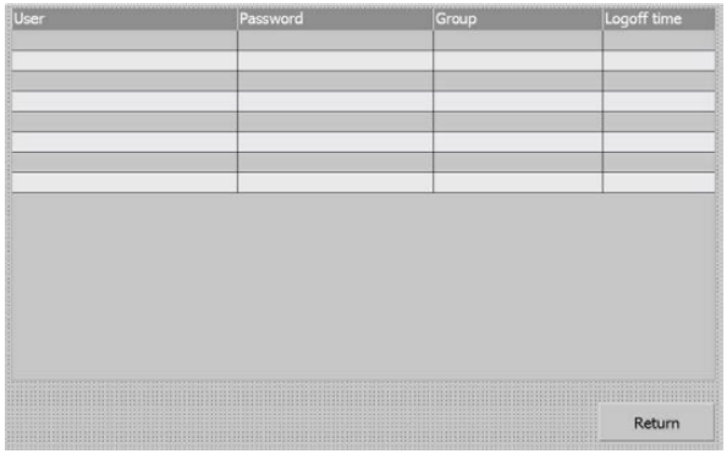


On-screen buttons:

System	Manage users and their passwords and rights Only accessible by the administrator.
Service	Select machine-specific programs.
Edit Data record	Enter and save new magnetisation parameters (programs). Only accessible by the administrator and setter.
Country flags	Select the language for the user interface.
Manual	Manual magnetisation.
Select Data record	Data record selection from the values stored in PLC.

System messages and faults are displayed in the yellow field at the bottom of the screen.

2.2.2 System screen



From this screen, the administrator can manage the users' passwords and access rights. To access this screen, tap the **System** button in the Settings screen (see section 2.2.1).

On-screen buttons:

User	Enter a user name.
Password	Enter the valid password for the user.
Group	Select the Group with the appropriate access rights.
Logoff time	Set how long a password registration is valid.
Return	Closes this screen and displays the Settings screen.

2.2.3 Service screen

This screen displays the factory settings To access this screen, tap the **Service** button in the Settings screen (see section 2.2.1).

DO NOT CHANGE THE FACTORY SETTINGS. An incorrect setting can stop the machine from working!

Receipt number

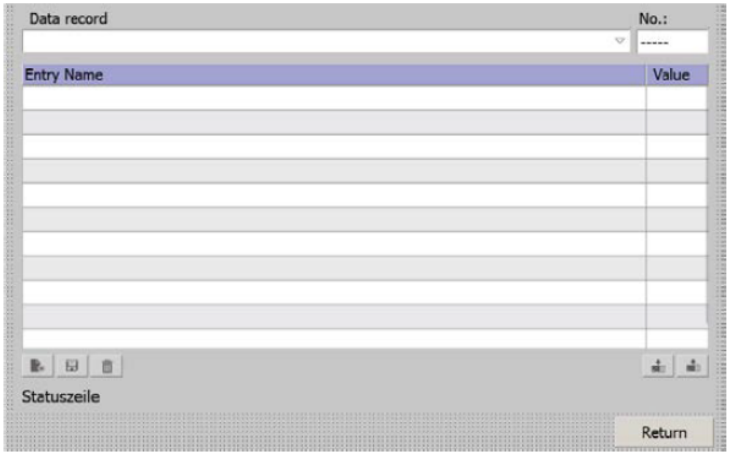
- 01 for Universal 600 WE
- 02 for Universal 900 WE II

On-screen buttons:

Help	Displays help text for the control of selected program. DO NOT CHANGE THE HELP TEXT.
Return	Closes this screen and displays the Settings screen.

2.2.4 Edit data record

In this screen you can generate a new data record or change the existing parameters of a data record.



Administrator and setter only: to access this screen, tap the **Select Data record** button in the Settings screen (see section 2.2.1).

Fields:

Data record	Display/select the currently loaded dataset (refer to the instructions for setting up magnetising parameters in the operating manual for your crack testing machine).
No. (number)	Unique number of the data record.

Select the workpiece part-specific parameters that have to be changed and transferred to/from the PLC.

Note: The maximum value is specified during input. If the maximum value is exceeded, the entry is invalid. The minimum value should be about 10% of the maximum value to allow magnetisation.

The unit Ampere-Turns [AT] is the product between the current strength amperage and the number of turns.

On-screen buttons:

	Create a new data set.
	Save current parameter values in the selected dataset.
	Delete selected data set.
	Transfer parameter values from the selected dataset into the machine controller. In automatic mode, these parameter values are used for testing the workpieces.
	Transfer parameter values from the machine controller into the selected dataset. **Important:** The values previously saved in the dataset will be overwritten.
	Closes this screen and displays the Settings screen.

3. CLEANING AND MAINTENANCE

Clean the screen with the machine off. This will ensure that you do not inadvertently trigger functions when you touch the touch screen.

Use only a small amount of water and detergent or a special cleaning agent for computer screens. Do NOT spray the cleaning agent directly onto the screen; spray onto a clean cloth and carefully wipe the screen with it.

Never use aggressive solvents, abrasive cleaners or mechanical tools for cleaning.

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