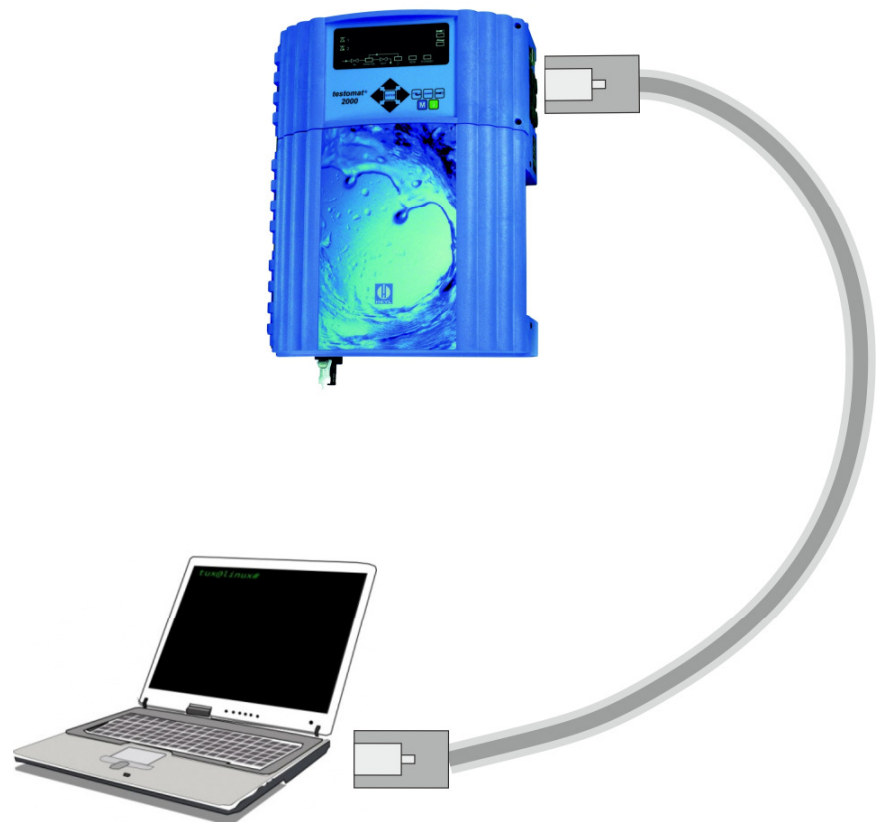


Operating Instructions

Network logger

for Testomat 2000[®]

Plug-in card for measured value and notification storage with Ethernet - network connection for Testomat 2000[®]



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Important safety information

- Please read these operating instructions carefully and completely prior to working with the instrument.
- Ensure that these operating instructions are always available for all users.
- These operating instructions must always be passed on to the new owner should Testomat 2000[®] change hands.
- Always adhere to hazard warnings and safety information when using reagents, chemicals and cleaning agents. Please adhere to the respective safety data sheet! Download the safety data sheets for the supplied reagents at <http://www.heyl.de>.

Intended use

With the network logger for Testomat 2000[®], all measured values and notifications from the Testomat 2000[®] device can be saved and displayed and downloaded via the network using the built-in webserver. Only a browser is required.

Furthermore, the saved data can be read in CSV format over the network via FTP protocol. Messages about new measured values and notifications can also be sent by email. Emails can also be forwarded on to mobile telephones via so-called email-SMS gateways, thus ensuring remote system monitoring.

- Always adhere to the performance limits stated in the section entitled “Technical data”.

To ensure correct and intended usage, always read and understand these instructions, especially the section entitled “Important safety information”, prior to use.

The instrument is not used as intended if

- it is used in areas not specified in these instructions.
- it is used in areas which do not correspond to the ones described in these instructions.

Qualification of the staff

The installation and commissioning require

- basic electrical knowledge
- Knowledge of the IT infrastructure
- Knowledge of the system administration
- Knowledge of the appropriate German and English technical terms, as the web interface for the configuration of the network logger is only available in English.

Assembly and commissioning should only be carried out by a specialist or by an authorised individual supervised by a specialist.

A specialist is someone who due to his/her technical training, know-how and experience as well as knowledge of relevant regulations can assess assigned tasks, recognise potential hazards and ensure appropriate safety measures. A specialist should always adhere to the relevant technical regulations.

Warning notices in these instructions

The warning notices in these instructions warn the user about potential dangers to individuals and property resulting from incorrect handling of the instrument. The warning notices are structured as follows:



SIGNAL WORD!



DANGER



WARNING



CAUTION



NOTE

Description of the type or source of danger

Description of the consequences resulting from non-observance

- Preventive measures. Always adhere to these preventive measures.

“**DANGER**” indicates an immediate hazardous situation which, if not avoided, will result in death or serious injury.

“**WARNING**” indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

“**CAUTION**” indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injuries or property damage.

“**NOTE**” indicates important information. If this information is not observed, it may result in an undesirable result or state.

Further documents

The network logger is an option for Testomat 2000[®]. Therefore, pay attention to the operating instructions for the Testomat 2000[®] device.

Pay particular attention to

General instructions



- Observe the regulations for accident prevention and environmental conservation in the respective country and installation point.
- You may not modify or alter the device.
- Do not carry out any changes or modifications at the instrument which are not described in these instructions; failure to adhere to these instructions will negatively affect any warranty claims that you make thereafter.
- Proper operation of the network logger is only guaranteed in conjunction with the Testomat 2000[®]-device!

Installation



- Always turn the relevant plant component or the Testomat 2000[®] device off at the mains before inserting the network logger. Secure the plant against an unintentional restart.
- Do not touch the components or plug contacts of the circuit board during installation.
- Always observe technical data and ambient parameters.

De-installation

- Turn the Testomat 2000[®] device off at the mains before pulling the network logger out of the slot. Secure the plant against an unintentional restart.

Disposal

- Dispose of the instrument in accordance with national regulations.

Scope of delivery

- 1 network logger Testomat 2000[®] (plug-in card)
- 1 flat ribbon cable 10-pole with ferrite
- 1 Operating instructions

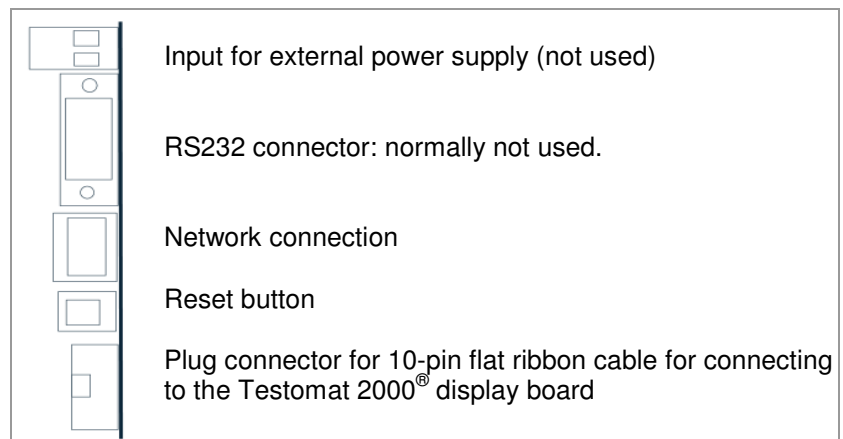
A network cable is required to connect to the network!

Performance specifications

The network logger Testomat 2000[®] is a miniature computer with network connection, webserver, FTP server and integrated flash memory.

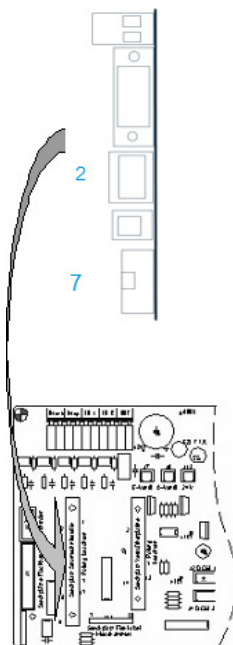
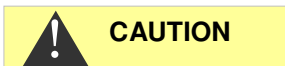
- It can be used in Testomat 2000[®] from October 2014. See list [Firmware versions Testomat 2000[®]](#).
- The storage capacity is enough for around 400,000 measured values and notifications. With a typical measuring interval of 15 minutes, the Testomat 2000[®] device has enough storage capacity for measuring data over a period of 10 years.
- Generation of one measuring file per month
- Generation of one alarm file per month
- The files are stored in "CSV" format and can be edited with a spreadsheet software such as Microsoft Excel.
- Display the current measured values and the last alarm on a web browser
- Graphic display of the monthly measuring values on a web browser
- Notification of new measured values, alarms/notifications and limit values being exceeded via email
- File download by browser or FTP.
- Forwarding of all notifications and measured values to any TCP/IP port for linking systems with SPS and other network-enabled devices.
- Password protection for all settings, FTP and web access
- Auto-MDI-X, this means that no crossover cable is required, even during direct connection to a PC network card.

Controls and displays



On the board there is a Jumper J1 that is set to position "T2000". There is also an LED that lights up when the plug-in card is receiving power.

Installation of the plug-in card



Risk of incorrect assembly!

- Insert the card as shown below, with components on the left side inserted into the empty slot of the Testomat 2000[®] motherboard. The plug-in card can be damaged if installed incorrectly.

Risk of damage due to static discharge!

- When inserting, do not touch the plug-in card contacts or components. Static discharge can damage the plug-in card.

- Open the upper door of the Testomat 2000[®] by loosening the two screws on the right-hand side
- Open the upper housing flap and insert the card into the free slot on the motherboard
- Now connect the supplied 10-pin flat ribbon cable to the plug connector 7 and the plug connector 8 to the bottom right of the displayboard of the Testomat 2000[®]. Pay attention to the plug coding.
- Insert the network cable into the RJ45 connection 2.
- The pole terminals and the DSUB connector are not connected!

Commissioning

Network logger status display

The LED on the board shows that the board is receiving power. The other LEDs on the network connector are only active once a network cable has been plugged in.

| Yellow LED | Green LED | Action or status |
|------------|-----------|--------------------------------|
| Off | On | Network connection established |
| Flashing | On | Network activity |

Configure the Testomat 2000[®] interface

To operate the network logger you must select the data logger interface as follows:

| SCHNITTSTELLEN ▼▲ ME |
|----------------------|
| Type 0-20 mA |
| Type 4-20mA |
| Type RS232 |
| Type Data logger * |

- Select from menu
 >BASIC PROGRAM => PROGRAM VALUE=> INTERFACES
- Select "Type Data logger"
- Confirm the selection by pressing "ENTER"

NOTE

If the "Type Data logger" setting is not available, the Testomat has older firmware. Check the [Firmware versions Testomat 2000[®]](#).

This establishes the connection between Testomat 2000[®] and network logger. The commissioning of the plug-in card is completed. Now carry out network settings so that the network logger can be integrated into TCP/IP networks.

Perform network settings

Please use the [Lantronix User Manual \[1\]](#) for reference. The following are described in the settings process:

Password protection

The network logger web interface and the FTP access are password protected from the factory settings:

User "admin"

Password "PASS".

NOTE

Some data must be known about the network into which the network logger will be integrated.

Checklist for network configuration:

1. Allocation of IP addresses in the network

a) IP addresses are assigned via DHCP

This corresponds to the state on delivery; no settings are required.

Often the IP address can be linked to a MAC address by the server so that the device is always reachable under the same IP address. The MAC address is printed on the module with the network connection under the barcode.

b) No, static IP address is used

The network logger must be assigned a fixed IP address, network mask (and possibly gateway). This is done with the [DeviceInstaller \[2\]](#) software. The procedure is explained in detail in Lantronix User's Guide chapter 3 "Using DeviceInstaller".

If the DeviceInstaller does not work over the network, the network logger can also be connected using RS232. To do this, proceed as described in the chapter on troubleshooting and problem solving.

2. Which options should be active for data access?

a) FTP for file transfer of measurement/alarm data in CSV format

[FTP access](#) is active as delivered from the factory. It can be turned off in the configuration menu under FTP → Configuration → State "Disabled" and turned on by selecting "Enabled". This is also where the username and password for FTP will be configured if access needs to be secured.

b) Email for notifications of new measurements or alarms

The [Email setting](#) can be set up under Configuration → Email1..3 as well as Protocol Stack → SMTP.

Setting the priority to "Very Low" will turn emails off, all other priorities will turn it on.

The setting can be tested using "Send Email", and an email will be generated for test purposes.

The Email 4 setting is not used. It can, for example, be used to send a complete file via email!

c) Web browser for online display and data analysis

Web access is active as set by factory default. It should not be turned off as then there will be no options for settings!

Assign usernames and passwords to limit access so that only authorised personnel can log in.

This data is entered under HTTP → Authentication → Username, Password.

d) Web browser for file transfer of measurement/alarm data in CSV format

The measurement/alarm files can be downloaded in the web interface in the menu File system → Browse. All data for one month is stored in the folder http, subfolder for the corresponding year.

Assign usernames and passwords to limit access so that only authorised personnel can log in.

This data is entered under HTTP → Authentication → Username, Password.

3. Should access be limited by using passwords?**Yes**

Separate passwords can be configured for FTP and web access, see 2a and 2c below.

No

Delete the passwords for FTP and web access, see 2a and 2c below.

Web interface configuration menus**Status**

Network logger status

Line

The settings relate to the serial interface to Testomat 2000[®]. Baud rate, data bits and stop bits must not be changed.

Network

Basic network settings such as DHCP, IP address, gateway, host name.

Protocol Stack

The setting of the SMTP Relay is important if Emails are to be sent.

SSH

Access via Secure Shell. Not necessary here.

SSL

The encryption of data transfer over the web. Includes certificate production. Is not required for function; relevant as a safety feature for remote access.

Syslog

System log messages. Inactive.

System

For restart. Do not use the firmware update because the Heyl network logger process runs differently!

XML

To export and import settings.



After commissioning

- Close the upper door of the Testomat 2000® device
- Tighten both screws to secure the ① upper door
- Look at the [Maintenance](#) chapter

Operation

Web interface

If the IP address of the network logger is configured to 192.168.0.10 then the web interface is accessible at the following address:

| | |
|---|--|
| http://192.168.0.10 | Configuring the network logger The links below relate to the following pages. |
| http://192.168.0.10/werte.htm | Monthly data as a graph |
| http://192.168.0.10/values.htm | Monthly data (English) |
| http://192.168.0.10/aktuell.htm | Current measured values automatically updated |
| http://192.168.0.10/online.htm | Current measured values automatically updated in English |

NOTE

The display only functions when JavaScript is activated in the browser!

Access to files with measured data and notifications is most easily done in the web browser via network logger settings in the menu file system.

Using monthly data display

Select the month and year of the measuring data to be displayed and click on the OK button.

According to the CSV file available, their name and path will be generated from the selection.

A help function is available next to the OK button.

Using the current measured value display

The display is fully automatic. The number of measuring points is automatically detected based on incoming data after the second measured value.

If an alarm has occurred during device run time, the last alarm is shown. Clicking on the “Acknowledge” button will ensure this error message is no longer shown, only new ones. The display updates automatically. To display load all alarms

Sending email

The settings can be found in the Email menu. Settings for the SMTP server that forwards on emails can be found under Protocol Stack → SMTP → Relay Address.

Sending can be turned on and off using the priority setting, separated for

- Measured data in Email 1
- Notifications in Email 2
- Limit value exceedances in Email 3

Sending is active when the SMTP Relay (see above) is set and the following fields are filled out in the email configuration:

- *To*: Existing destination
- *From*: Any address for the network logger itself. It need not actually exist (you cannot send emails to the Testomat 2000®), but should correspond to the syntax of a correct email address.
Example: Testomat2000@firma.de
- *Subject*: Any text must be present.
Example: “Measured value” for Email1, “Notification” for Email2, “Limit value exceedance” for Email3.
- *Priority*: Set *Urgent*, *High*, *Normal* or *Low*.
No email is generated when the priority is *Very Low*!

Check the settings by sending a test email using Send Email.

The Email 4 setting is not used. You can, for example, send files by email via the web interface by listing the file under “Message File”. You must specify the full path with file name.

Example (Measured data from 2014): http/14/ME1407.CSV

You can view the log of email transfers under Statistics.

File access with FTP

All measured values and notifications are saved on the network logger's flash memory during operation. Measured values and alarms are filed in the root directory, sorted by year.

Monthly measured values (e.g. 07/2009) are stored in a file "ME0907.CSV". Errors that occurred are stored in another file "AL0907.CSV".

Access is possible using Windows Explorer on Windows PCs:

- Enter the address
ftp://<IP-Address of the network logger>.
- A window "Log on as" appears. Enter the username and password for FTP access (Standard: "admin", "PASS").
- The network logger's file system with "http" directory is then shown in Explorer. This contains the measured values and notifications sorted by year.

File access with web interface

Measured values and notification files can also be downloaded via the web interface in menu:

Filesystem → Browse

. All data for one month is stored in folder "http" (subfolder for the corresponding year)

Analysis of "CSV" data on PC

To analyse data you can transfer the data to your PC by downloading it with the help of the web interface or via FTP transfer. The CSV files can be read/edited, e.g. using "Microsoft Excel".

NOTE

Caution data loss!

Do *not* save files for further processing in "CSV" format as this causes file formatting information to be lost. Always use the original software format!

After opening the measured value file (e.g. ME090713.CSV) a picture appears on the monitor with all the daily measured values:

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|----|-------------|----------|-------|-------------|-------------|------|-------|--------------|------|-------------|-------------|------|-------|--------------|------|
| 1 | parameter | date | time | meas. point | meas. value | unit | limit | limit value | unit | meas. point | meas. value | unit | limit | limit value | unit |
| 2 | Wasserhärte | 13.07.09 | 13:36 | M1: | 3,6 | °dH | * | | | | | | | | |
| 3 | Wasserhärte | 13.07.09 | 13:39 | | | | | | | M2: | 3,6 | °dH | * | | |
| 4 | Wasserhärte | 13.07.09 | 13:41 | M1: | 3,6 | °dH | * | | | | | | | | |
| 5 | Wasserhärte | 13.07.09 | 13:44 | | | | | | | M2: | 3,6 | °dH | * | | |
| 6 | Wasserhärte | 13.07.09 | 13:47 | M1: | 3,6 | °dH | * | Limit val.1: | 2 | °dH | | | | | |
| 7 | Wasserhärte | 13.07.09 | 13:49 | | | | | | | M2: | 3,6 | °dH | * | | |
| 8 | Wasserhärte | 13.07.09 | 13:52 | M1: | 3,6 | °dH | * | | | | | | | | |
| 9 | Wasserhärte | 13.07.09 | 13:54 | | | | | | | M2: | 3,6 | °dH | * | Limit val.2: | 3 |
| 10 | Wasserhärte | 13.07.09 | 13:56 | M1: | 3,6 | °dH | * | | | | | | | | |
| 11 | Wasserhärte | 13.07.09 | 13:59 | | | | | | | M2: | 3,6 | °dH | * | Limit val.2: | 3 |
| 12 | Wasserhärte | 13.07.09 | 14:02 | M1: | 3,6 | °dH | * | | | | | | | | |
| 13 | Wasserhärte | 13.07.09 | 14:04 | | | | | | | M2: | 3,6 | °dH | * | Limit val.2: | 3 |
| 14 | Wasserhärte | 13.07.09 | 14:07 | M1: | 3,6 | °dH | * | | | | | | | | |
| 15 | Wasserhärte | 13.07.09 | 14:10 | | | | | | | M2: | 3,6 | °dH | * | Limit val.2: | 3 |
| 16 | Wasserhärte | 13.07.09 | 14:12 | M1: | 3,6 | °dH | * | Limit val.1: | 2 | °dH | | | | | |
| 17 | Wasserhärte | 13.07.09 | 14:15 | | | | | | | M2: | 3,6 | °dH | * | Limit val.2: | 3 |
| 18 | Wasserhärte | 13.07.09 | 14:17 | M1: | 3,6 | °dH | | Limit val.1: | 2 | °dH | | | | Limit val.2: | 3 |
| 19 | Wasserhärte | 13.07.09 | 14:20 | M1: | 3,6 | °dH | | Limit val.1: | 2 | °dH | | | | | |
| 20 | Wasserhärte | 13.07.09 | 14:22 | M1: | 3,6 | °dH | | | | | | | | Limit val.2: | 3 |
| 21 | Wasserhärte | 13.07.09 | 14:24 | M1: | 3,6 | °dH | | Limit val.1: | 2 | °dH | | | | Limit val.2: | 3 |
| 22 | Wasserhärte | 13.07.09 | 14:27 | M1: | 3,6 | °dH | | | | | | | | | |

After opening the error file (e.g. AL090713.CSV) the following image appears on the monitor:

| 1 | error message | date | time |
|---|------------------------|----------|-------|
| 2 | SPANNUNGS AUSFALL | 13.07.09 | 12:36 |
| 3 | MESSBER. ÜBERSCHRITTEN | 13.07.09 | 12:40 |
| 4 | FST. OPTIK | 13.07.09 | 12:57 |
| 5 | WASSERMANGEL | 13.07.09 | 13:02 |

Message forwarding on TCP/IP port

All notifications and measured values can also be forwarded on in CSV raw data format to any TCP/IP port for linking with devices and SPS.

The settings can be found in the *Line, Line 1 Configuration* menu:

1. Interface: RS232
2. State: Enabled
3. Protocol: Tunnel.
4. Parity: None
5. Data Bits: 8
6. Stop Bits: 1
7. Flow Control: None
8. The settings for Gap Timer and Threshold need not be changed.

Firmware Update

The network logger can be updated with the latest software over the network. To update, you need a PC with network access on the network logger and its IP address.

The process is as follows:

- Download the firmware update from the Heyl website Download area. Unzip the archive.
- Start the executable program. Files are extracted and the update process begins after entering the IP address.
- The process takes about a minute. The program displays progress.
- Finally, the network logger is restarted.

Maintenance

Check the available storage space **every six months**.

- Select the menu File system → Statistics and the menu item “Clean Space”.
It displays the available storage space for log files.
- If the storage space is too low (<20%), transfer the log files to a PC and then delete the files from the network logger. This will avoid data loss. The oldest data is automatically deleted if there is no more storage space.
- Then start the menu File system → Statistics and the action “Compact”. This takes around 30 seconds and causes all files to be refreshed and old files to be removed.

Expansion options

As the network logger uses TCP/IP communication, it can easily be integrated into networks and combined with peripheral devices. Other options include:

Wireless access using WLAN

The network logger can be connected to a WLAN Access Point. Data and alarms can be queried over the WLAN network. If the WLANs range is not sufficient, it can be enlarged using so-called wireless repeaters. Throughput is halved by each wireless repeater. However, this side effect can be ignored when there are low data volumes.

Sending SMS

SMS transmission is made possible by so-called SMS via email gateways that all mobile network operators offer. The email sent to the service provider is changed into an SMS that is sent to a pre-set

telephone number in the destination of the email. As settings and costs are determined by the respective network operator, we ask you to ask them directly if you are interested in this service.

Remote access

The possibility of connecting to the network logger over the internet can be achieved in several ways:

- On an active PC where screens can be mirrored using a remote access software, e.g. TeamViewer or VNC or possibly Remote Desktop. If there is already a network with an internet connection, the TeamViewer option is particularly easy to implement, but does require a continuously running PC.
- Dial-up via router. The network logger can be accessed via a browser over the internet by opening ports of the http or SSL ports and IP forwarding to the network logger's IP address. Usernames and passwords should always be set up as a safety measure. In addition, the port number can be changed and the SSL encryption can be activated after creation of a certificate.
It is even safer to use a so-called VPN router which supports strongly encrypted connections.

NOTE

If a connection is to be made via a 3G router, you should make sure that you get the public IP address from the mobile operator! Access to the internet on a 3G router is not possible with a private IP address. Find out more from your mobile operator. So-called "M2M" (machine to machine) SIM cards are provided to allow access for system monitoring.

Safety aspects

It is impossible to change a Testomat device's settings remotely. However, changed measured values or websites can be uploaded by unauthorised persons over FTP or the web. This is why we recommend you activate password protection!

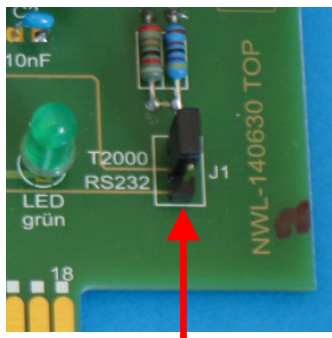
Troubleshooting and problem solving

a) The connection to the network logger via the web browser works but is asking for an unknown login:

- The factory set username “admin” has the password “PASS”.

b) There is no connection to the network logger via the web browser
Check:

- Does the LED on the Testomat 2000[®] board light up after turning it on? If not, the board (and therefore the Testomat) is not being supplied with power. If the Testomat works in itself, then the fuse for the 12V power supply is defective. Please look at the Testomat 2000[®] handbook to see which fuse needs to be replaced.
- Does the LED on the Testomat 2000[®] light up green on connection to the network? If not, there is no network connection! Check the cable and connection at the switch!
- Test the connection with “ping <IP address of the network logger>”. If this fails, try to determine the current IP address. If you cannot determine it, use the DeviceInstaller to search the network logger in the network.
- If the DeviceInstaller does not find the network logger and the network has been checked, a null modem cable can be connected to the network logger’s serial port to use the DeviceInstaller in serial mode. To do this, set the only jumper on the board J1 to RS232. After configuration, set the jumper back to T2000.



Jumper J1

c) The network logger website does not work, no updates occur:

- Check whether JavaScript is activated in the browser.
- Also see f)

d) Settings were accidentally changed and now nothing works:

- Load the start configuration on the configuration page in the XML menu, Import Configuration, Configuration from FileSystem, File-name: default.xml.

e) The email sending function does not work because there is no setting for user and password:

- The Lantronix XPort Pro used in the Heyl network logger only supports sending via a so-called open SMTP server. Authentication is not used.
- Ask your system administrator whether there is an open gateway available within the company network. Such gateways often exist internally for sending status notifications, e.g. UPS.

f) Network access on network logger occurs faultlessly, Testomat 2000[®] also works, but measured values and notifications are never displayed:

- Check whether the Jumper J1 on the board is stuck on the “T2000” position.
- Check whether the supplied 10-pin flat ribbon cable is plugged into the network logger and the display board, as described in Installation of the plug-in card.

If questions or problems arise during operation of the network logger that are not described in the operating instructions and/or cannot be solved, please contact our Technical Hotline:

Tel.: +49 (0)5121 7609-0

Fax: +49 (0)5121 7609-44

E-Mail: info@heyl.de

If this is the case, please try to locate or log the actions and conditions that lead to the problem in as much detail as possible in advance of giving us a call. The more accurately you can describe the incident, the faster and more effectively we can help you.

Dismantling



Risk of injury during installation when connected to power supply!

If you do not switch off the power supply before beginning disassembly, you may be injured, destroy the product or damage system components.

Proceed as follows to disassemble:

- Turn the Testomat 2000[®] device off at the mains.
- Remove the flat ribbon cable connector
- Pull the plug-in card out of the slot
- Do not touch the plug contacts or components
- Package the plug-in card in its original packaging or in anti-static packaging for shipment

Firmware versions Testomat 2000[®]

The necessary protocol “data logger” can only be selected from the interfaces menu on devices with the following software versions:

| Device name | From software version |
|------------------------------|-----------------------|
| Testomat 2000 | 39x071 |
| Testomat 2000 Br | 78x031 |
| Testomat 2000 Antox | 39x771 |
| Testomat 2000 self clean | 39x971 |
| Testomat 2000 CAL | 52x071 |
| Testomat 2000 CIF | 46x031 |
| Testomat 2000 CIT | 56x031 |
| Testomat 2000 CIT self clean | 56x931 |
| Testomat 2000 ClO2 | 69x031 |
| Testomat 2000 CrVI | 65x021 |
| Testomat 2000 Duo | 55x031 |
| Testomat 2000 Fe | 43x031 |
| Testomat 2000 POC / Polymer | 49x031 |
| Testomat 2000 SO3 | 73x121 |
| Testomat 2000 THCl | 48x031 |
| Testomat Eco Plus | 85x071 |
| Titromat KH | 36x031 |
| Titromat TH | 61x021 |
| Titromat M1 | 74x021 |
| Titromat M2 | 64x021 |

References

[1] Lantronix DeviceInstaller Software:

http://www.lantronix.com/ftp/DeviceInstaller/Lantronix/4.4/4.4.0.1/Installers/Download_Web/setup.exe

[2] Lantronix XPort Pro User Guide:

http://www.lantronix.com/pdf/XPort-Pro_UG.pdf

If these links change, you can find these documents on the Lantronix website under Support, Technical Support, Firmware/Downloads. On the page in the chapter Embedded Networking, XPort Pro.

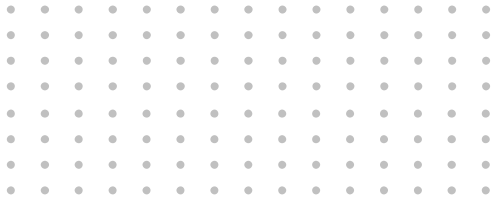
Accessories

| Type | Order No. |
|---|-----------|
| Network logger Testomat 2000 [®] | 100492 |
| Flat ribbon cable with receptacle connector and ferrite, 2x5 pin, 240mm | 31713 |

Technical data

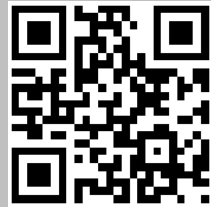
We reserve the right to make technical changes without notice in the interest of constantly improving our products!

| | |
|-----------------------------|---|
| Ethernet | 10Mbit / 100Mbit Auto-MDI-X |
| Serial interface | RS232 Standard, switchable to DSUB9 connector by Jumper or Testomat 2000 interface. |
| Ambient temperature: | 5 – 45 °C |
| Dimensions: | 95 x 65 x 20 mm (W x H x D) |
| Weight: | approx. 35 g |
| Operating voltage: | 5..36V / max. 1W (through Testomat 2000 [®]) |



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Netzwerklogger_T2000_GB_150217.doc



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