

Release Note

TH LINK

**PROFINET, EtherNet/IP, Industrial Ethernet, Modbus TCP,
PC Industrial Ethernet
Version 4.1.0.0**

1. Components of the current product version

Component	Order number	HW Release	FW Release
TH LINK PROFINET	GDA-JA-003034	3.0	4.1.0.0
TH LINK ETHERNET/IP	GDA-JA-003035	3.0	4.1.0.0
T LINK INUDSTRIAL ETHERNET	GDA-JA-003037	3.0	4.1.0.0
TH LINK MODBUS TCP	GDA-JA-003036	3.0	4.1.0.0
TH LINK PC INDUSTRIAL ETHERNET	LRA-JY-003028	-	4.1.0.0

2. Manuals of product version

Description	Language	Release
Installationshandbuch	German	DE-062017-3.40
Installation Manual	English	EN-012017-3.40

3. System requirements

For configuration of TH LINK the following system requirements have to be fulfilled:

3.1. Operating System (TH LINK PC Industrial Ethernet only)

The following operating systems are supported in German and English:

- Windows 7 (32 and 64 bit)
- Windows 8.1 (64 bit)
- Windows Server 2012 (64 bit)
- Windows Server 2012 R2 (64 bit)
- Windows 10 (64 bit)
- Windows Server 2016 (64 bit)

3.2. Network

- 1 available IP address in the automation network and if necessary 1 free IP address in the office network
- enablement of the following ports

Protocol/Purpose	Port
HTTP	80 TCP
Firmware update	1100 TCP
TH LINK communication with each other	1123, 1124, 2364 UDP
TH LINK communication with TH SCOPE	
via Multicast	2364 UDP
via Unicast	1151, 2365 UDP

- There must be no firewall between the TH LINK and the PROFINET devices.

3.3. Software

- Adobe Reader 8 or higher to read documentation
- Microsoft.NET Framework 4.0 (TH LINK PC Industrial Ethernet only)
- Microsoft IIS web server 5.1 or higher (TH LINK PC Industrial Ethernet only)

3.4. Web Browser (TH LINK PC Industrial Ethernet only)

The following web browser versions are supported:

- Internet Explorer 11 or higher
- Mozilla Firefox 49 or higher
- Google Chrome 53 or higher

3.5. Hardware (TH LINK PC Industrial Ethernet only)

For TH LINK PC Industrial Ethernet, any computer with network adapter is required.

3.6. SD cards

- Supported SD cards
 - Swissbit S-200 512MB SFSD0512L1BN1TO-I-ME-161-STD (-25°C to +85°C)
 - Swissbit S-200 512MB SFSD0512L1BN1TO-E-ME-161-STD (-40°C to +85°C)

4. Scope of delivery

The scope of delivery includes:

- TH LINK
- Installation Manual
- Release Note

For software and documentation visit the download area on our web site at <http://industrial.softing.com/en/downloads.html>.

5. Installation instruction

Please read the installation manual before installing the TH LINK.

6. Compatibility

The TH LINK is compatible with TH SCOPE release 3.4.0.0.

7. Mean Time Between Failures

- at 25 °C the MTBF value is about 24 years
- at 55 °C the MTBF value is about 15 years

8. New and changed functions

New functions

- Inventorying of PROFINET devices (module, sub module) and Ethernet devices (e.g. network-PC, cameras) supporting SNMP
- Additional information on TH LINK state via OPC UA server (running in TH SCOPE)

Changed functions

- Meshing in between the TH LINKs has been removed. The navigation tree is built from TH SCOPE. Non-reachable TH LINKs will be shown with a grey icon.

9. Fixed Bugs

- None

10. Notes and known bugs

10.1. General notes

- The measurement is limited to 254 stations, which can be separated into up to 5 IP address ranges.
- Data that cannot be queried from the device because the device does not provide them are displayed with "n.a." for "not available". Data that cannot be determined are not incorporated in the calculation of sums.
- The displayed data rate of the controller is the sum of all data rates of the devices communicating with the controller. If a data rate of a device is not available, "n.a." is displayed.
- For technical reasons for some devices, not all ports are displayed in the network statistics.
- TH LINK network overview: Distinguishing between controller, IO-Device and network device only works for PROFINET-protocols (state firmware release v4.0)
- Filtering for "device location" (for EtherNet/IP device names respectively) that has been entered manually, will lead to an empty result.
- When calling TH LINK-devices with the new firmware (v4.0) from older webinterfaces (Flex-version), the webpage cannot be found due to an out-dated weblink. To solve that issue, the user needs to adjust the web-address (e.g. from <http://172.17.3.105/THLINK/Flex/> to <http://172.17.3.105/THLINK/HTML5/>)

- To start TH LINK PC on newly installed windows 10 1607 or windows 10 1703 systems, the windows signature check has to be switched off. Workaround: Please switch off the “Secure Boot Option” while starting the host-PC using UEFI-setup. Operating systems that had been upgraded to windows 10 1607 or windows 10 1703 are not affected by this restriction.

10.2. Known bugs

- Devices in commissioning state will be detected during measurement. But if a valid IP address is set, it will be displayed as “network device” instead of PROFINET device.
- There will be an incorrect measurement, if both ports of the TH LINK are in the same network.

10.3. GNU General Public License

- The TH LINK uses the Linux operating system and therefore includes GPL licensed software.

11. Version history

Version number	Release date	New and changed functions
4.0.0.0	10.01.2017	<ul style="list-style-type: none"> • TH LINK Network overview tab provides a quick overview of the monitored network and lists all relevant parameters at one glance • Efficient device management: With Softing TH LINK Maintenance Tool, several TH LINK can be updated to the latest Firmware version. • TH LINK graphical user interface (GUI) is implemented in HTML 5
3.4.1.0	30.09.2016	<ul style="list-style-type: none"> • The “retry” for non-reachable EtherNet/IP-devices can be configured and is set to “3” by default.
3.4.0.0	12.09.2016	<ul style="list-style-type: none"> • Blacklist: Robust operation for PROFINET networks • Attenuation check depending on cable length • Persistency: TH LINK PROFINET remembers the configuration settings for devices • Support for ARdata v1.1 (iDevice): Reliable communication with iDevices • Hostname can have up to 31 characters
3.3.0.0	28.01.2016	<ul style="list-style-type: none"> • Computing and communicating line depth • Detecting and communicating cable length (if supported by the monitored devices) • Detecting duplicated IP addresses • Calculation of port load corrected
3.2.0.0	24.04.2015	<ul style="list-style-type: none"> • TH LINK PROFINET writes diagnostic data on the SD card of the device. After a power outage and device restart, all data are restored and available.
3.1.0.0	16.01.2015	<ul style="list-style-type: none"> • Threshold monitoring of Lost Packets (increase of lost packets within 15 minutes interval, monitoring of lost packets per day per station) + alerting

		<ul style="list-style-type: none"> The threshold values are configurable and individual slaves can be excluded from monitoring
3.0.0.0	30.09.2014	<ul style="list-style-type: none"> Changed Corporate Identity Now default sorting in the network overview matches with the sorting in the navigation tree

2.0.3.0	27.06.2014	<ul style="list-style-type: none"> New settings "Data view" available: "Since start of measurement", "with historical data" Topology detection for end devices that are connected directly to a managed switch. Inventory: The Vendor and Device ID are no longer displayed in decimal but in hexadecimal. Error statistics: the number of unknown packets is removed from the sum of the lost packets. Network statistics: The unknown packets are displayed in a separate column. If the measurement is started without a valid time server or taken over computer system time, then all diagnostics will be displayed with a time stamp of 1970. If a valid time server was set or computer system time was taken over later, all previously occurred diagnostics were still available with a time stamp of 1970. These are converted to a valid time stamp now.
2.0.2.1	10.12.2013	<ul style="list-style-type: none"> When stopping the measurement, the communication for measurement in the automation network will be stopped as well as the communication of the TH LINK with each other.
2.0.1.0	08.08.2013	<ul style="list-style-type: none"> Improved active and passive requests (Faster detection of the entire network, reduced network load by sending fewer packets)

		<ul style="list-style-type: none">• Failed TH LINK PROFIBUS, were still displayed as “available” by TH LINK PROFINET• Incompatibility with the 1&1 SMTP Server is fixed.• In the time server settings no IP addresses larger the 128.x.x.x could be stored.• In the manual settings for IP address range no IP addresses larger the 128.x.x.x could be stored.
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<p>2.0.0.0</p>	<p>26.07.2013</p>	<ul style="list-style-type: none"> • Secure access from office network to the PROFINET network via second Ethernet interface • Alerting function via relay contact • PC synchronized system time is retained due to a real time clock in case of power loss • SD card slot • The bandwidth used by the TH LINK application is limited so that devices are requested with a maximum of 50% of the critical net load class for devices defined by the PI (PROFIBUS & PROFINET International). Especially for SNMP requests, the bandwidth is reduced to 25%. • In the title bar of the web pages the office network address and the automation network address are displayed. • At product information are displayed the MAC address, IP address, subnet mask and the default gateway for both Ethernet interfaces. • Enhanced temperature range: -40°F to +167°F. • Yaskawa Motoman devices were displayed as failed even though they had not failed. These devices do not provide PROFINET data and no SNMP data. Therefore, no topology, diagnostics or network statistics information of these devices are displayed (determined for devices with hardware version 2 and firmware version 1.0).
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12. Frequently asked questions

Access

Q: How many people can access the TH LINK via web at the same time?

A: Up to six people can access the TH LINK simultaneously. Once a person logs in to the TH LINK as an administrator, no one else can access it.

Time display

Q: I selected **Yes** in **Use time server**, but I always get a wrong time stamp. Why is that so?

A: It may be that the time server you set is not available from your network. Below the time server setting there is a possibility to test the set time server by clicking on the respective button. If no current date is displayed, please check your settings. If there is no time server available from your network, you have the possibility to take over the computer system time by selecting **No** for **Use time server**. Then click on the button **Synchronize**.

Settings

Q: Is it possible to use the server name instead of IP address for time server/SMTP server settings?

A: Yes, you can use server names. Make sure that a DNS server is set up and available.

Q: What has to be considered, if TH LINK gets the IP address from a DHCP server?

A: If you disconnect the network connector during the TH LINK runtime, the DHCP lease time possibly could be expired when reconnecting. Then the last used IP address of the TH LINK is assigned to another station in the network. In that case you should reboot the TH LINK.

Device information for modules

Q: Why is "n.a." displayed instead of the data for input and output values?

A: Earlier PROFINET implementations in the devices do not return any data. Please check if the respective device manufacturer provides a new firmware version and update the firmware respectively if a firmware update is available.

Device identification

Q: Why are the log book entries of my switch not displayed even though they are available in the device?

A: Some switches provide log book entries with a higher firmware version only. Please check if the respective device manufacturer provides a new firmware version and update the firmware respectively if a firmware update is available.

Q: Why is my PROFINET switch displayed as a network device?

A: The switch does not respond to PROFINET requests. Please check if the switch configuration is correct. If it is correct, check if the manufacturer of the switch provides a new firmware version and update the firmware respectively if a firmware update is available.

Q: Why does TH LINK display stations that are out of the IP address range?

A: PROFINET stations are searched with PROFINET DCP. This protocol is sent to all stations by TH LINK reachable in the subnet. It may be that a station answers that has no or no valid IP address.