

TICRO 100

Quick Start Guide



TICRO 100 Quick Start Guide

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Compliance statement

Declaration of Conformity (EU)

The equipment adheres to the guidelines of the council of the European Community for meeting the requirements of the member states regarding the electromagnetic compatibility (EMC) directive and the RoHS directive.

FCC Compliance (USA)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Declaration of Compliance (Canada)

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Recycling



This equipment (including all accessories) is not intended for household use. At the end of its service life, do not dispose of the device with household waste!

For customers in EU countries (incl. European Economic Area)

OMICRON test sets are subject to the EU Waste Electrical and Electronic Equipment Directive (WEEE directive). As part of our legal obligations under this legislation, OMICRON offers to take back the device and ensure that it is disposed of by authorized recycling agents.

For customers outside the European Economic Area

Please contact the authorities in charge for the relevant environmental regulations in your country and dispose the OMICRON device only in accordance with your local legal requirements.

1 Introduction

1.1 About this quick start guide

This TICRO 100 Quick Start Guide provides short information on how to install and use *TICRO 100*. It is intended as an aid for the user to install *TICRO 100* and take it into operation quickly and easily. The TICRO 100 Quick Start Guide thus provides only a small subset of information available for *TICRO 100*. It cannot substitute the TICRO 100 User Manual.

Therefore, also read the TICRO 100 User Manual in addition to this Quick Start Guide. The TICRO 100 User Manual provides extensive and more detailed information about *TICRO 100*, its installation and intended use, and how to configure and operate it. The TICRO 100 User Manual is available in PDF format on the CD ROM delivered with *TICRO 100* or can be accessed directly from the *TICRO 100* Web Interface.

1.2 General safety instructions

Before operating *TICRO 100*, carefully read the following general safety instructions:

- *TICRO 100* may only be used in a safe technical condition taking into account its defined purpose, safety requirements and possible risks as well as the operating instructions given in this Quick Start Guide.
- *TICRO 100* is exclusively intended for the applications specified in chapter "Introduction and designated use" of the TICRO 100 User Manual. The manufacturer or the distributors are not liable for damage resulting from unintended usage. The user alone assumes all responsibility and risks.
- The instructions provided in this manual are considered part of the rules governing proper usage.
- Do not open *TICRO 100*. Opening the device invalidates all warranty claims.
- Do not carry out any modifications or adaptations to *TICRO 100*.
- Do not use any other power supply options for *TICRO 100* than the ones described in chapter [Power supply](#) on page 16.
- *TICRO 100* is a SELV device (Safety Extra Low Voltage) which can be supplied with power by Power over Ethernet (PoE class 3 powered device according to IEEE 802.3af). The ETH network port of *TICRO 100* may only be connected to Ethernet network ports or Power over Ethernet power supplies.
- The FIBER network port and the outputs 4 and 5 are products of laser class 1 (IEC 60825).



WARNING

Death or severe injury caused by high voltages possible.

All inputs and outputs of *TICRO 100* are electrically connected to the SELV (safety extra low voltage) insulation group of the device.

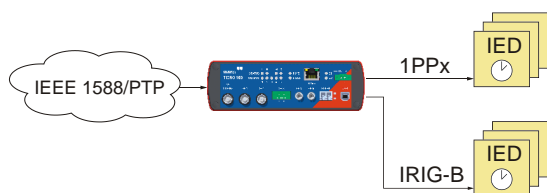
- Do not connect any voltages that are not SELV compliant.

1.3 About TICRO 100

TICRO 100 is a Precision Time Protocol (PTP) time converter that allows you to derive a high variety of time codes from IEEE 1588/PTP packages received via Ethernet. This device enables you to easily synchronize non-PTP equipment to the grandmaster clock of an IEEE 1588/PTP infrastructure.

TICRO 100 is designed for the following applications:

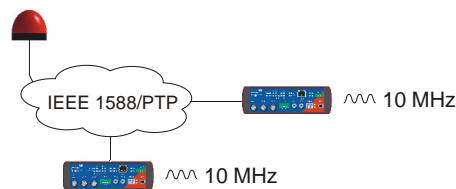
- Generation of PTP-synchronized signals to make existing equipment PTP capable.
TICRO 100 can be used to generate several time synchronization signals (e.g., PPX, IRIG-B, DCF77, etc.) required for existing equipment (e.g., IEDs) from an IEEE 1588/PTP infrastructure.
- Synchronization of measurements.
TICRO 100 provides programmable trigger functionality that can be used for example to start measurements at different locations at exactly the same time.
- Generation and distribution of 10 MHz reference frequency signals over Ethernet.
TICRO 100 provides a highly accurate 10 MHz reference signal that can be used to synchronize measurement equipment such as synthesizers, frequency counters or spectrum analyzers to the same frequency reference signal.
- Portable time code generation.
Together with a portable PTP grandmaster clock (e.g., *OTMC 100* from OMICRON Lab), *TICRO 100* can be used to perform quick time synchronized measurements in the field.



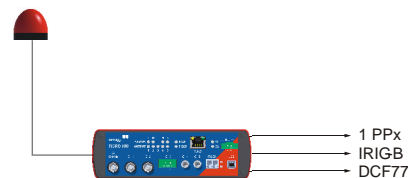
Example: Generation of PTP-synchronized signals for existing equipment



Example: Synchronization of measurements



Example: Generation of 10 MHz reference frequency

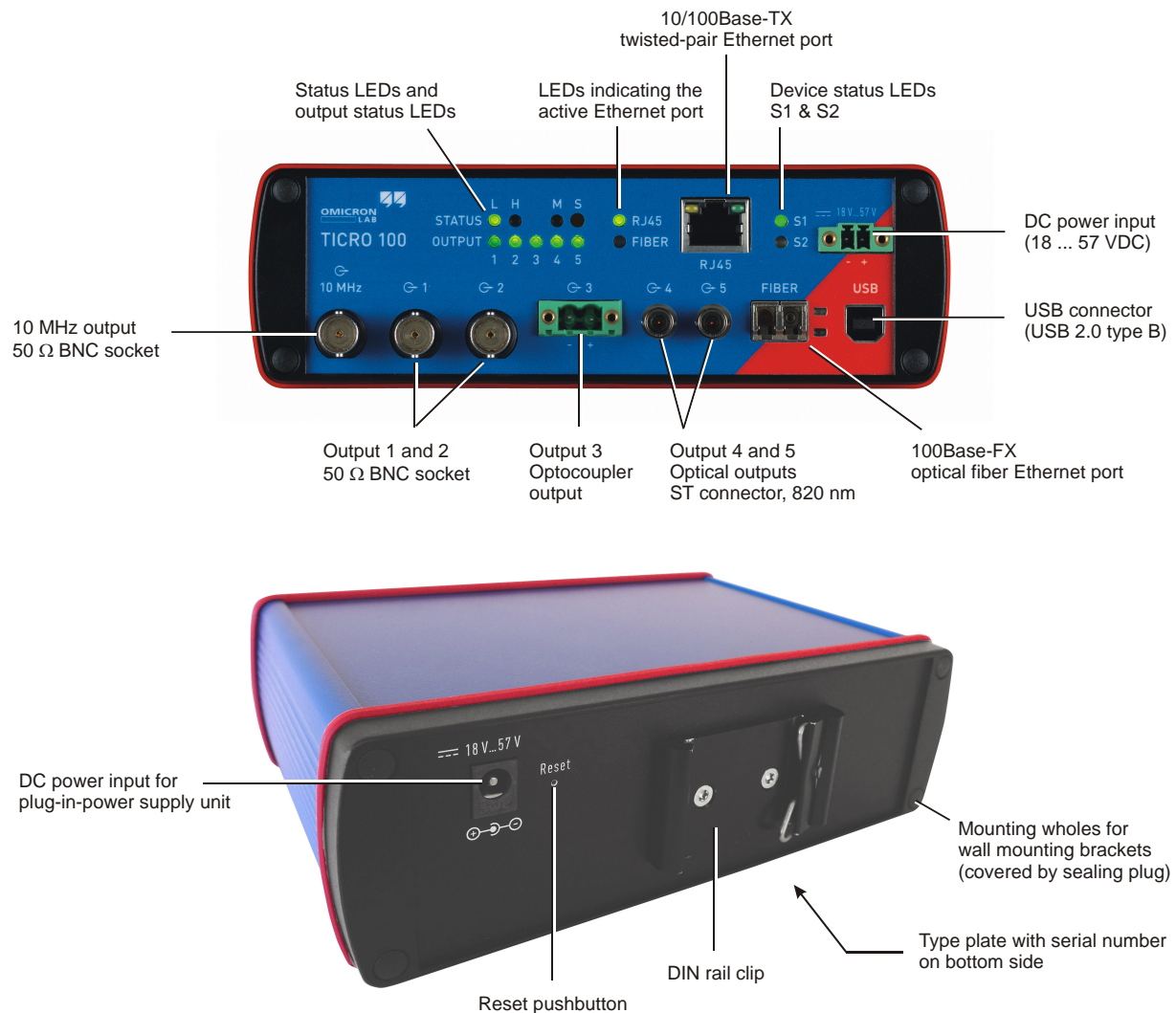


Example: Portable time code generation

Key:  = PTP grandmaster clock  = *TICRO 100*

2 Device description


2.1 Device overview




TICRO 100 does not provide an ON/OFF switch! The device automatically powers up after supply voltage is provided via one of the DC power inputs or via Ethernet (PoE).

Refer to the following subsections for detailed information about the LEDs, connectors and operating elements of *TICRO 100*.

2.2 LEDs on the front side

LED	Description		
S1 and S2	Green and red LED indicating the general device status according to the following code.		
	<u>S1 (green)</u>	<u>S2 (red)</u>	<u>Meaning</u>
	off	off	<i>TICRO 100</i> not is supplied with power or device reboot is requested.
	off	on	Device is booting (normal boot process after applying supply voltage or after reboot).
	on	off	<i>TICRO 100</i> is ready for operation (boot process finished and device is operational). Observe the other LEDs for information about the PTP clock status, the status of the Ethernet connection and the output states.
	on	on	Device is booting in recovery mode. Intermediate state when initiating a factory reset (see "Operating procedures performed directly on the device" in the <i>TICRO 100</i> User Manual).
	blinking	off	Device is in recovery mode, waiting for new software. In the recovery mode, the device provides only a rudimentary Web Interface just allowing for the upload of a software image.
	off	blinking	Software update is in progress. <div><div>NOTICE</div><div>Equipment damage possible.<div>► Do not disconnect <i>TICRO 100</i> from the power supply or from the Ethernet or USB connection during a software update.</div></div></div>
blinking	blinking	Hardware error.	
RJ45 and FIBER	Green LEDs to indicate the currently active Ethernet port: RJ45 for 10/100Base-TX (twisted-pair) or FIBER for 100Base-FX (optical fiber). <div> Only one Ethernet port can be used at a time. The Ethernet port actually used has to be selected in the Web Interface (see "Network Configuration page" in the <i>TICRO 100</i> User Manual).</div>		
LEDs on the Ethernet connectors	The green LED indicates the Ethernet connection status (link status). The yellow LED indicates that data traffic is active on the interface.		

LED	Description
Status L and H	<p>Green LEDs to indicate the PTP status of the device:</p> <p>L: Indicates the Locked state. <i>TICRO 100</i> receives PTP time information from a PTP grandmaster clock and is locked to this signal. It is able to provide its defined accuracy. <i>TICRO 100</i> is synchronized to the received PTP time signal. The LED starts blinking as soon as <i>TICRO 100</i> has established connection to a PTP grandmaster clock and started its locking algorithm. As soon as an accuracy of better than 1 μs is reached, the LED stops blinking. The typical overall accuracy (better than 200 ns) is reached after approximately 30 seconds (with heated internal oscillator (OCXO), see note below). However, please note that the absolute overall system accuracy depends on the accuracy of the PTP grandmaster clock and the PTP compliance of the network infrastructure.</p> <p> <i>TICRO 100</i> is equipped with an oven-controlled oscillator (OCXO). To ensure precise time synchronization, <i>TICRO 100</i> will only lock to the PTP time signal after an initial heat-up phase for the OCXO. The duration of this heat-up phase depends on the ambient temperature and is typically 5 - 7 minutes.</p> <p>H: Indicates the Hold-over state. If <i>TICRO 100</i> was in the Locked state before, it enters the Hold-over state if synchronization to the PTP time signal gets lost. If configured in the output configuration, <i>TICRO 100</i> continues to output time signals during the Hold-over state. However, synchronization of these output signals is then performed using the internal oscillator (OCXO) instead of the PTP time signal. The maximum hold-over duration depends on the time <i>TICRO 100</i> was in the Locked state before:</p> <ul style="list-style-type: none"> Locked state \leq 1 h: Hold-over time = 1 min ("mini hold-over"). Locked state $>$ 1 h and operating time (uptime) $>$ 2 h: Hold-over time = half the operating time. Locked state $>$ 1 h and operating time $>$ 48 h: Max. hold-over time = 24 h. <p>The "unconsumed" hold-over time remaining on the return to the Locked state is kept and extended by the "locked" duration as stated above.</p>
Status M and S	<p>M: LED for future use. Currently without function.</p> <p>S: Indicates that <i>TICRO 100</i> receives a PTP signal, is connected to a PTP grandmaster, and has taken over the role of a slave clock.</p>
Output 1 to 5	<p>Green LEDs to indicate which outputs are currently active.</p> <p>Outputs can be disabled or muted in the Web Interface or automatically deactivated by <i>TICRO 100</i> if it is not able to provide time signals with sufficient accuracy. For more detailed information, please refer to section "Output configuration page" of the <i>TICRO 100</i> User Manual.</p>

2.3 Connectors on the front side


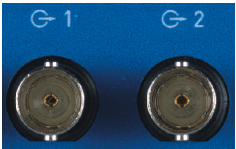
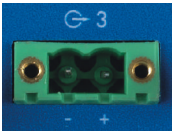




WARNING

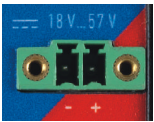

Death or severe injury caused by high voltages possible.

All inputs and outputs of *TICRO 100* are electrically connected to the SELV (safety extra low voltage) insulation group of the device.


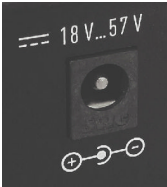

- ▶ Do not connect any voltages that are not SELV compliant.

Connector	Description
	<p>10 MHz output (50 Ω BNC socket).</p> <p>This output provides a highly accurate 10 MHz sine wave signal (4 dBm \pm 2 dB at 50 Ω). The 10 MHz output is always active and cannot be configured in the Web Interface.</p>
	<p>Output 1 and 2 (50 Ω BNC socket).</p> <p>Outputs 1 and 2 can be configured in the Web Interface for the following signals:</p> <ul style="list-style-type: none"> - IRIG-B, unmodulated TTL signal or modulated on 1 kHz carrier - PPX (TTL signal, adjustable number of pulses, for example, 1 PPS or 1 kHz) - DCF77 unmodulated TTL signal - Trigger (TTL signal, 1 pulse at a defined point in time) - Trigger (TTL signal, PPX sequence starting at the defined point in time) <p>For information about configuring these outputs, please refer to section "Output configuration page" of the TICRO 100 User Manual.</p>
	<p>Output 3 (optocoupler output 30 V/100 mA max., terminal block supplied on delivery).</p> <p>Output 3 can be configured in the Web Interface for the following signals:</p> <ul style="list-style-type: none"> - IRIG-B unmodulated - PPX (adjustable number of pulses, for example, 1 PPS or 1 kHz) - DCF77 unmodulated - Trigger (1 pulse at a defined point in time) - Trigger (PPX sequence starting at the defined point in time) <p>For information about configuring this output, please refer to section "Output configuration page" in the TICRO 100 User Manual.</p>

Connector	Description
	<p>Optical output 4 and 5 (ST connector, 820 nm).</p> <p>Outputs 4 and 5 can be configured in the Web Interface for the following signals:</p> <ul style="list-style-type: none"> - IRIG-B unmodulated - PPX (adjustable number of pulses, for example, 1 PPS or 1 kHz) - DCF77 unmodulated - Trigger (1 pulse at a defined point in time) - Trigger (PPX sequence starting at the defined point in time) <p>For information about configuring these outputs, please refer to section "Output configuration page" of the TICRO 100 User Manual.</p>
	<p>RJ45: 10/100Base-TX twisted-pair Ethernet port (RJ45 socket).</p> <p>FIBER: 100Base-FX optical fiber Ethernet port (ST connector, 820 nm).</p> <p>The LEDs indicate the link status and data traffic.</p> <p><i>TICRO 100</i> can use only one Ethernet port at a time.</p> <p> If no Ethernet port is selected in the Web Interface, the RJ45 Ethernet port is the default port if <i>TICRO 100</i> does not detect an operating Ethernet network on any of the network ports during the first power-up or after a factory reset. It is strongly recommended to set the network port in the Web Interface manually during commissioning (see section "Network configuration page" in the TICRO 100 User Manual).</p>
	<p>USB port (USB 2.0, type B). Use this interface as an alternative for connecting a computer to <i>TICRO 100</i> (instead of accessing <i>TICRO 100</i> via Ethernet).</p> <p>Access via the USB port can be disabled in the security configuration (see Access Restrictions tab in section "Security configuration page" of the TICRO 100 User Manual).</p> <p> When accessing the <i>TICRO 100</i> Web Interface via the USB port, you should take care that the computer is not connected to the Ethernet network <i>TICRO 100</i> is connected to. The computer must not be connected to <i>TICRO 100</i> over the Ethernet network and the USB port at the same time!</p>

Connector	Description
	<p>DC power input socket (MC 1.5/2-STF-3.81, connector supplied on delivery). The correct polarity is printed on the front plate.</p> <p>You can use this connector to connect a 18 ... 57 VDC supply voltage, either as an alternative to the plug-in power supply unit supplied on delivery (DC power input socket on rear side), or in addition to the plug-in power supply unit to provide power supply redundancy for <i>TICRO 100</i>. For more details, please refer to chapter Power Supply on page 16.</p> <div data-bbox="485 573 1396 814"> <div data-bbox="485 573 1396 615">WARNING</div> <div data-bbox="485 615 1396 814">  <p>Death or severe injury caused by high voltages possible.</p> <ul style="list-style-type: none"> ► Use a power supply unit that complies with the SELV standard if product safety according to IEC 61010-1 and IEC 60255-27 is required. The plug-in power supply unit supplied on delivery complies with the SELV standard. </div> </div> <div data-bbox="485 846 1396 1157"> <div data-bbox="485 846 1396 888">NOTICE</div> <p>Equipment damage possible.</p> <p>The DC power inputs of <i>TICRO 100</i> are protected against polarity reversal if only one input is used at a time.</p> <ul style="list-style-type: none"> ► When using both DC power inputs, make sure to observe the correct polarity for both inputs. Reversed polarity on one of the DC power inputs would make the reverse polarity protection ineffective and could damage <i>TICRO 100</i>. </div>

2.4 Connectors and operating elements on the rear side

Element	Description
	<p>The reset pushbutton can be accessed through the hole in the rear panel using a thin pointed object like the wire of a resistor with a diameter < 0.9 mm, for example. The reset pushbutton can be used to:</p> <ul style="list-style-type: none"> • Initiate a device reboot. • Initiate a factory reset to reset the device configuration to the factory defaults (for example, if you forgot your password). <p>Please refer to section "Operating procedures performed directly on the device" of the TICRO 100 User Manual for more detailed descriptions.</p>
	<p>DC power input socket (standard DC barrel jack 2.5 x 5.5 x 11 mm, center pin positive). Permitted voltage range: 18 ... 57 VDC</p> <p>Use this input to connect the plug-in power supply unit supplied on delivery if <i>TICRO 100</i> is not supplied via Power over Ethernet (PoE). You can also use the DC power input on the front side as a second DC source in addition to this DC power input to provide power supply redundancy for <i>TICRO 100</i>. For more details, please refer to chapter Power supply on page 16.</p> <div style="background-color: #ff8c00; padding: 5px; margin-top: 10px;">WARNING</div> <div style="display: flex; align-items: center; margin-top: 5px;">  <div> <p>Death or severe injury caused by high voltages possible.</p> <ul style="list-style-type: none"> ► Use a power supply unit that complies with the SELV standard if product safety according to IEC 61010-1 and IEC 60255-27 is required. The plug-in power supply unit supplied on delivery complies with the SELV standard. </div> </div> <div style="background-color: #0056b3; color: white; padding: 5px; margin-top: 10px;">NOTICE</div> <div style="background-color: #f0f0f0; padding: 10px; margin-top: 5px;"> <p>Equipment damage caused by overvoltage possible.</p> <p>This DC power input socket does not fulfill the surge requirements of IEC 60255-27.</p> <ul style="list-style-type: none"> ► Use the DC power input socket on the front side if IEC 60255-27 compliance is required. </div> <div style="background-color: #0056b3; color: white; padding: 5px; margin-top: 10px;">NOTICE</div> <div style="background-color: #f0f0f0; padding: 10px; margin-top: 5px;"> <p>Equipment damage possible.</p> <p>The DC power inputs of <i>TICRO 100</i> are protected against polarity reversal if only one input is used at a time.</p> <ul style="list-style-type: none"> ► When using both DC power inputs, make sure to observe the correct polarity for both inputs. Reversed polarity on one of the DC power inputs would make the reverse polarity protection ineffective and could damage <i>TICRO 100</i>. </div>

3 Mounting

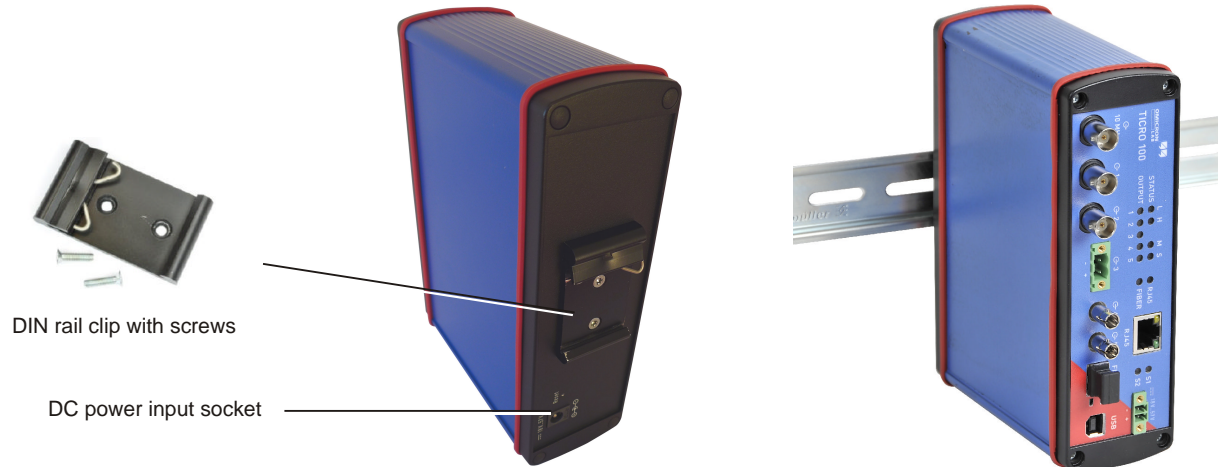
3.1 DIN rail mounting

Proceed as follows to mount *TICRO 100* to a 35 mm DIN rail (acc. to EN 50022):

1. Place the DIN rail clip supplied on delivery to the rear side of *TICRO 100* as shown in the figure below and align it with the mounting holes. The spring side of the DIN rail clip must point towards the DC power input socket!
2. Use the two M3x12 screws to fasten the DIN rail clip to *TICRO 100* (TX10 screwdriver required). Do not use other screws than delivered with the DIN rail clip!
3. Hook the spring side of the DIN rail clip to the top side of the DIN rail.
4. Press the device downwards and then towards the DIN rail until the clip audibly snaps onto the DIN rail.

Proceed as follows to remove *TICRO 100* from the DIN rail:

1. Compress the spring of the DIN rail clip by pressing *TICRO 100* downwards.
2. Release the bottom side of the clip from the DIN rail and withdraw *TICRO 100* upwards.

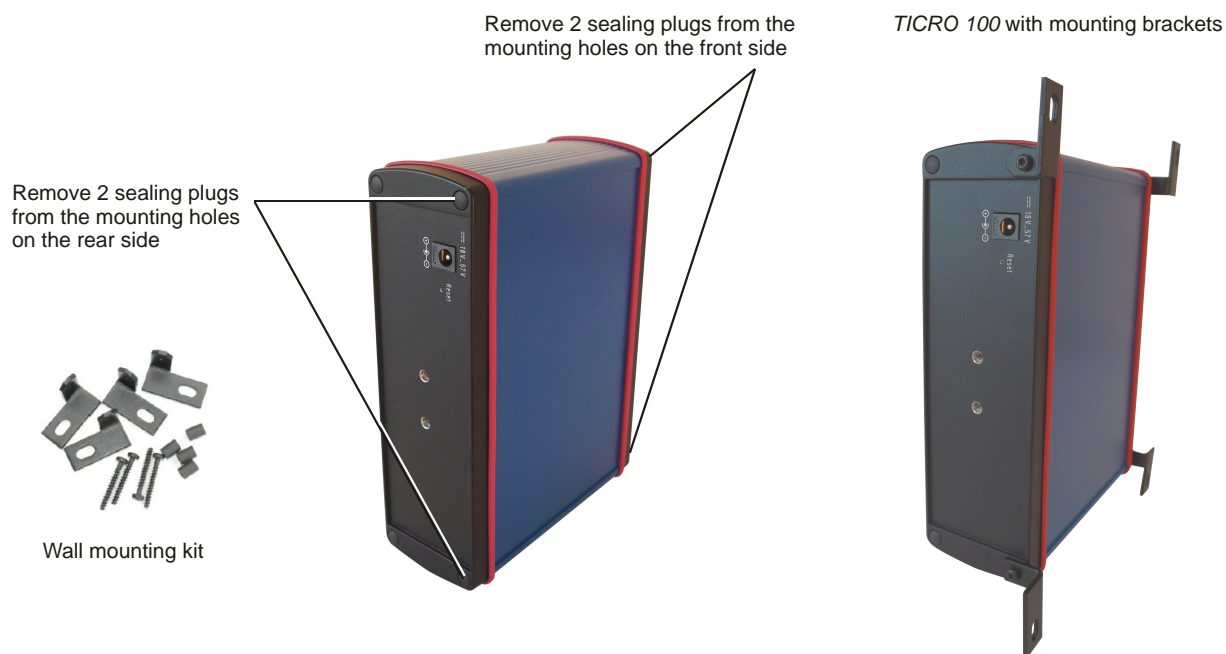


3.2 Wall mounting

A wall mounting kit with four mounting brackets is provided on delivery for mounting *TICRO 100* on flat surfaces, for example on a wall.

Please observe the instructions included in the wall mounting kit for attaching the mounting brackets to *TICRO 100*. Proceed as follows:

1. At the desired mounting positions for the mounting brackets, remove two sealing plugs on the rear side and two sealing plugs on the front side of *TICRO 100*.
2. Unscrew the four uncovered screws from *TICRO 100*.
3. Insert the four sealing rings included in the mounting kit to the mounting holes of *TICRO 100*.
4. Fasten the mounting brackets using the delivered 22 mm long screws as shown below.
5. Mount *TICRO 100* to the wall.



4 Power supply

TICRO 100 does not provide an ON/OFF switch! The device automatically powers up after supply voltage is applied.

There are three possibilities to supply *TICRO 100* with power:

1. Power supply via Power over Ethernet (PoE).
2. Power supply via the plug-in power supply unit provided on delivery.
3. Power supply via any suitable external DC supply voltage.

You can supply *TICRO 100* using only one of these power supply options or using a combination of two or all three options to provide power supply redundancy. When supplied by two external power supplies (options 2. and 3. above), *TICRO 100* automatically switches to the other source without any interruption if one power source fails. If supplied via PoE and an external power supply (option 1. and 2. or option 1. and 3.), *TICRO 100* will reboot after switching from the external power supply (option 2. or 3.) to PoE power supply (option 1.).

NOTICE

Equipment damage possible.

The DC power inputs of *TICRO 100* are protected against polarity reversal if only one input is used at a time.

- ▶ When using both DC power inputs, make sure to observe the correct polarity for both inputs. Reversed polarity on one of the DC power inputs would make the reverse polarity protection ineffective and could damage *TICRO 100*.



If powered via the delivered plug-in power supply unit or by an external DC supply voltage, *TICRO 100* is able to operate as a power sourcing equipment (PSE) for class 1 devices according to IEEE 802.3af.

4.1 Power supply via Power over Ethernet

The easiest method for supplying *TICRO 100* with power is via Power over Ethernet (PoE) according to IEEE 802.3af. Power supply via PoE does not require any additional cabling since it uses the same cable (RJ45 port) for Ethernet communication and power supply.

Power supply via PoE is not possible if you are using an optical fiber Ethernet network.

The Ethernet network port used to supply *TICRO 100* (i.e., the network port *TICRO 100* is connected to) must be able to supply a class 3 powered device (power consumption < 13 W).

If no suitable PoE source (e.g., an Ethernet switch) is available, it is also possible to insert a suitable PoE injector between the Ethernet port on the network side and the Ethernet port of *TICRO 100*. A PoE injector is not included in the scope of delivery.

4.2 Power supply via the delivered plug-in power supply unit

Connect the plug-in power supply unit provided on delivery to the DC power input socket (standard DC barrel connector) on the rear side of *TICRO 100*.

When connecting another power supply unit than the delivered one to this DC power input socket, please observe the correct polarity (center pin is positive). The used power supply unit must deliver a voltage of 18 ... 57 VDC with an output power of at least 13 W.



WARNING

Death or severe injury caused by high voltages possible.

- Use a power supply unit that complies with the SELV standard if product safety according to IEC 61010-1 and IEC 60255-27 is required. The plug-in power supply unit supplied on delivery complies with the SELV standard.

NOTICE

Equipment damage caused by overvoltage possible.

The DC power input socket on the rear side does not fulfill the surge requirements of IEC 60255-27.

- Use the DC power input socket on the front side if IEC 60255-27 compliance is required.

4.3 Power supply via an external DC supply voltage

TICRO 100 can also be supplied by an external DC supply voltage using the DC power input socket on the front side. A corresponding two-pin connector (MC 1.5/2-STF-3.81) is provided on delivery. The correct polarity is printed on the front plate.

The DC supply voltage must be in a range of 18 ... 57 V and deliver a power of at least 13 W.



WARNING

Death or severe injury caused by high voltages possible.

- Use a power supply unit that complies with the SELV standard if product safety according to IEC 61010-1 and IEC 60255-27 is required. The plug-in power supply unit supplied on delivery complies with the SELV standard.

4.4 Using TICRO 100 as a PoE power source according to IEEE 802.3af

If powered via the delivered plug-in power supply unit or by an external DC supply voltage as described in the sections above, *TICRO 100* is able to operate as a power sourcing equipment (PSE) according to IEEE 802.3af. The device is then able to power a class 1 device via its 100BaseTX Ethernet port. This becomes especially handy if you operate *TICRO 100* with the antenna-integrated PTP grandmaster clock *OTMC 100* from OMICRON Lab.

5 Accessing the Web Interface

TICRO 100 automatically powers up after supply voltage is applied. The green LED S1 lights up and the red LED S2 is off when the device is ready for operation.

TICRO 100 can be configured and controlled completely via the Web Interface using a computer. Under normal circumstances, no manual intervention at the device itself will be required.

5.1 System requirements

Your computer must fulfill the following requirements to access the *TICRO 100* Web Interface:

- OMICRON *Device Link* installed (see chapter "OMICRON Device Link" of the *TICRO 100* User Manual).



OMICRON *Device Link* is always required for the initial access to *TICRO 100*. If a static IP address is assigned to *TICRO 100*, the device can be accessed any time and from any computer using this IP address.

- Web browser installed (Microsoft Edge, Mozilla Firefox 20 or higher, or Google Chrome version 31 or higher).
- For access via Ethernet network only:
Network port configured for operation in the network *TICRO 100* is connected to.
- For access via USB only:
USB 2.0 port available. While accessing *TICRO 100* via USB, the computer must not be connected to the same Ethernet network *TICRO 100* is connected to!



If you are accessing *TICRO 100* from a Mac or Linux operating system supporting zeroconf, you can access the Web Interface of *TICRO 100* by entering **http://<hostname>.local** to the address bar of your web browser. The default hostname is the device serial number. The serial number is available on the type plate on the bottom side of *TICRO 100* (labeled "SerNo").

5.2 Accessing the TICRO 100 Web Interface

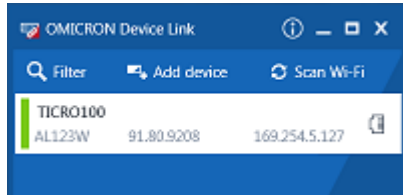


OMICRON *Device Link* is required for initial access to *TICRO 100*. If you know the IP address of *TICRO 100*, it is alternatively also possible to access the device from a web browser using its IP address (without using OMICRON *Device Link*).

Proceed as follows to access the *TICRO 100* Web Interface using OMICRON *Device Link*:

1. Connect your computer to the network or to the USB port of *TICRO 100*.
(Please note: Access via the USB port may possibly be disabled in the *TICRO 100* configuration (see **Access Restrictions** tab in section "Security configuration page" of the *TICRO 100* User Manual)).
2. Supply your *TICRO 100* with power (see [Power supply](#) on page 16).

3. If your computer is not connected via the USB port of *TICRO 100*: Connect your *TICRO 100* to the network your computer is connected to.
4. If necessary, install *OMICRON Device Link* on your computer. See chapter "OMICRON Device Link" of the *TICRO 100* User Manual.
5. Launch *OMICRON Device Link*.
6. *OMICRON Device Link* will automatically find and display your *TICRO 100*.

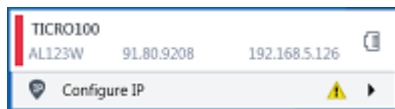


The vertical bar on the left displays the device status:

- Green bar: The device is online and ready for operation.
- Gray bar: The device is offline. Supply your *TICRO 100* with power.
- Red bar: The device is online but not accessible due to incorrect IP configuration.

TICRO 100 is usually configured to obtain the IP address automatically. However, it is also possible to assign a static IP address to *TICRO 100*. In this case, the following behavior applies: When accessing *TICRO 100* via Ethernet, *OMICRON Device Link* will find the *TICRO 100*, but display a red bar to indicate that the device cannot be accessed.

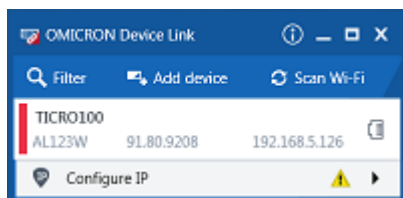
- Click the *TICRO 100* entry and select **Configure IP**.



OMICRON Device Link will then display an IP configuration page. In this page, select **Use the following IP address** and enter the IP address of your *TICRO 100*, or enter an IP address of your choice to assign a new IP address to your *TICRO 100*. Click the **Subnet mask** field to automatically fill a subnet mask and then click **Apply** to connect to *TICRO 100*.

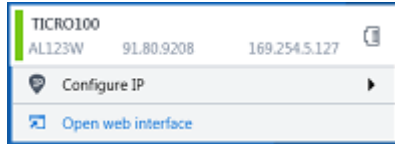
Or

- Click the **Add device** button and enter the IP address assigned to *TICRO 100*.

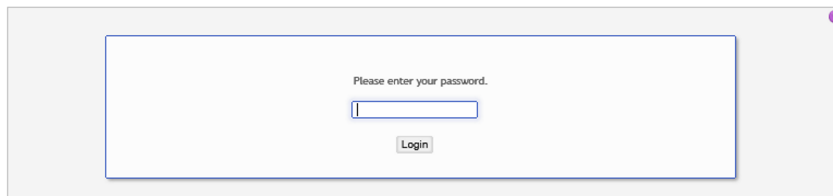


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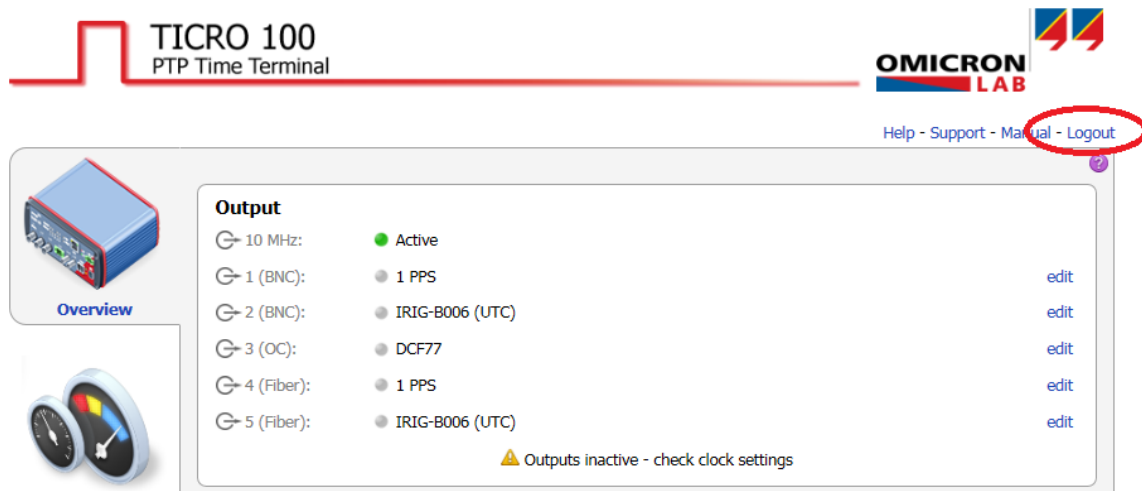
7. A green vertical bar indicates that OMICRON *Device Link* successfully connected to your *TICRO 100*. Click the *TICRO 100* entry and select **Open Web Interface**.



8. The Web Interface is opened in a web browser. Password protection is disabled by default. If password protection is configured for *TICRO 100*, a login dialog is displayed. Enter your password and click **Login**. The default password is *timeterminal*.



9. The start page of the *TICRO 100* Web Interface is displayed. You can now access all pages of the Web Interface.
- ▶ Proceed with section "Next steps to set up TICRO 100" of the TICRO 100 User Manual to configure *TICRO 100* according to your needs.
 - ▶ Use the **Logout** link in the top right corner to exit the *TICRO 100* Web Interface (only available if password protection is enabled).



6 Troubleshooting

TICRO 100 automatically powers up after supply voltage is provided via one of the DC power inputs or via Ethernet (PoE). The green LED S1 lights up and the red LED S2 is off when the device is ready for operation. In case of operational problems with *TICRO 100*, please use the following table to solve the problem.

The *TICRO 100* User Manual contains detailed descriptions of the operating procedures possible for *TICRO 100* directly on the device and via its Web Interface.



6.1 Troubleshooting procedures

Problem / LED Indication	Description / Possible Cause / Remedy
Green LED S1 is on Red LED S2 is off	<i>TICRO 100</i> is ready for operation.
LEDs S1 and S2 are continuously off	<p><i>TICRO 100</i> is not supplied with power. <i>TICRO 100</i> may be supplied using the following power supply options. See section Power Supply on page 16 for more detailed information.</p> <ol style="list-style-type: none"> 1. Power supply via Power over Ethernet (PoE). 2. Power supply via the plug-in power supply unit provided on delivery. 3. Power supply via any suitable external DC supply voltage.
Green LED S1 flashes Red LED S2 is off	<i>TICRO 100</i> is in the recovery mode, waiting for new software. Refer to chapter "Operating the <i>TICRO 100</i> " of the <i>TICRO 100</i> User Manual.

Problem / LED Indication	Description / Possible Cause / Remedy
No output signal available on outputs 1 to 5. The green status LED of the output is off.	<p>Possible causes:</p> <ol style="list-style-type: none"> 1. All outputs are inactive. <i>TICRO 100</i> deactivated the outputs automatically because the "Outputs active" parameter is set to "Only when locked" or "When locked or in hold over" in the Web Interface and <i>TICRO 100</i> is not in one of these device states. Refer to subsection "Clock settings pane" of the "Output Configuration Page" section of the <i>TICRO 100</i> User Manual. 2. One or more outputs are muted. The "Output muting" check box is selected for the respective output(s) in the output configuration page of the Web Interface. Refer to subsection "Output tabs 1 (BNC), 2 (BNC), 3 (OC), 4 (Fiber) and 5 (Fiber)" of the "Output Configuration Page" section in the <i>TICRO 100</i> User Manual.
No Ethernet connection to <i>TICRO 100</i> possible. The device cannot be found/accessed using <i>OMICRON Device Link</i> .	<p>Proceed as follows:</p> <ol style="list-style-type: none"> 1. Use the RJ45 and FIBER LEDs to check which Ethernet port is currently active: RJ45 for 10/100Base-TX (twisted-pair copper line) or FIBER for 100Base-FX (optical fiber). If the currently active Ethernet port is not the port actually used, change the network interface configuration in the <i>TICRO 100</i> Web Interface: <ul style="list-style-type: none"> • Disconnect the Ethernet network connector (RJ45 or optical fiber) from <i>TICRO 100</i>. • Connect your computer to <i>TICRO 100</i> via USB. • Access the <i>TICRO 100</i> Web Interface and select the correct network interface in the network configuration page (see section "Network configuration page" of the <i>TICRO 100</i> User Manual). • Logout from the Web Interface and disconnect your computer from the USB port of <i>TICRO 100</i>. • Connect the configured network interface of <i>TICRO 100</i> to the Ethernet network and check the Ethernet connection status using the LEDs on the Ethernet connector of <i>TICRO 100</i>. 2. If this does not solve the problem or if the currently active Ethernet port is already configured correctly, perform a factory reset of <i>TICRO 100</i>. Refer to section "Performing a factory reset (reset to factory defaults)" below.
The password dialog is displayed when accessing the Web Interface of <i>TICRO 100</i> . You do not know the password.	Perform a factory reset of <i>TICRO 100</i> . Refer to section "Performing a factory reset (reset to factory defaults)" below.

6.2 Performing a factory reset (reset to factory defaults)



A factory reset can also be performed via the Web Interface (see section "Performing a factory reset" of the *TICRO 100* User Manual).



Performing a factory reset may possibly result in an IP address change of *TICRO 100* due to automatic IP address assignment by a DHCP server.



The reset pushbutton can be accessed through the hole in the rear panel using a thin pointed object like the wire of a resistor with a diameter < 0.9 mm, for example.

Resetting the device to the factory defaults may be necessary if you forgot your password or if you cannot access the *TICRO 100* Web Interface anymore because you selected the wrong Ethernet network port by mistake before.

1. Press the reset pushbutton and keep it pressed.
2. The green LED S1 goes off.
3. After approx. 5 s, the red LED S2 lights up together with the green LED S1. Keep the button pressed and wait until the green LED S1 goes off (the red LED S2 is still on).
4. Release the reset pushbutton.
5. After approx. 15 s, the red LED S2 goes off and the green LED S1 lights up.
6. The device rebooted successfully and has now the factory default configuration settings.

Support

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