SIMGENET

SMG50

TELEPROTECTION UNIT

User, Configuration and Operation Manual

Telekoruma Ünitesi
Kullanım, Konfigürasyon ve İşletme Kılavuzu



SIMGENET SMG50

SMG-SMG50
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Document information

ITEM	DESCRIPTION
Product / document code	SIMGENET SMG50 / SMG-SMG50-UM-001
Revision / issue date	Rev.00 / 05.11.2026
Scope	Panels, application examples, E1 and RS232 pinouts, web interface, operation and test report references.
Reference specification	TEİAŞ-MYD/2024-062.0

The screen captures in this manual show the web interface in Turkish. Where a Turkish on-screen label is referred to, it is given in quotation marks after the English term.

SECTION 1

1 OVERVIEW AND SAFE USE

The SMG50 is a teleprotection unit used for protection signalling communication. This manual describes the panel elements and explains how to use the web interface for monitoring, network and time settings, event log export and maintenance tools.

The front panel carries eight input and eight output indicators, a local display, control keys and service ports. The web interface shows the status of the RS232, Fiber and E1 channels and of the two power supplies.

Before you start

- Installation and electrical connection must be carried out by authorised personnel, in line with the approved site design and the connection drawings supplied with the unit.
- Before energising, verify the supply rating on the unit label, the terminal polarity and the site protection arrangement.
- Do not infer terminal numbers, contact load limits or communication connections from photographs; use the approved connection drawing.
- Record every network or communication setting change. Carry out restarts only in an approved maintenance window, after assessing the impact on operation.
- Change the web password in line with your organisation’s policy. Web access and Touch Panel access use separate passwords.

Interpreting screen values

Firmware, hostname, UID, MAC addresses, link status, time and record counts depend on the individual unit and the moment of viewing. The example values in the screen captures are not default settings for every unit. Default access credentials are given separately in Section 7.

Using the technical documents

Application examples are described in Section 4, and the RS232 and E1 pinouts in Sections 5–6. For electrical limits, transmission performance and acceptance conditions, the manufacturer’s approved technical documents apply. The TEİAŞ specification reference and the scope of the available test reports are given in Section 18.

SECTION 2

2 FRONT PANEL AND INDICATORS

The front panel combines the channel indicators, the local display, the control keys and the service connections. The photograph below shows the SMG50 front panel in horizontal view.



Figure 1. SMG50 front panel

PANEL SECTION	LABEL / ELEMENT	USE
Channel indicators	INPUT 1–8 OUTPUT 1–8	LED indicators of the input and output channels. Match each channel number to the site labelling.
Local display	LCD; ESC, OK, up and down keys	Local display and navigation controls. Confirm the menu behaviour against the unit software.
LED test	LED TEST	Marked on the panel as the LED test control.
Service ports	ETH SERVICE USB SERVICE	Service connection labels. For web access, check the Service Ethernet setting.
Status indicators	CPU, POWER-1, POWER-2, TIME, RS232, FIBER, E1	Indicators for the main unit, power supply, time and communication status.

Local display access

The Touch Panel access password is 340026. The “dokunmatik ekran (opsiyonel)” (touch screen, optional) option on the Settings page refers to a hardware option; confirm that this hardware is fitted to the unit. The web password is given separately in Section 7.

SECTION 3

3 REAR PANEL AND INTERFACES

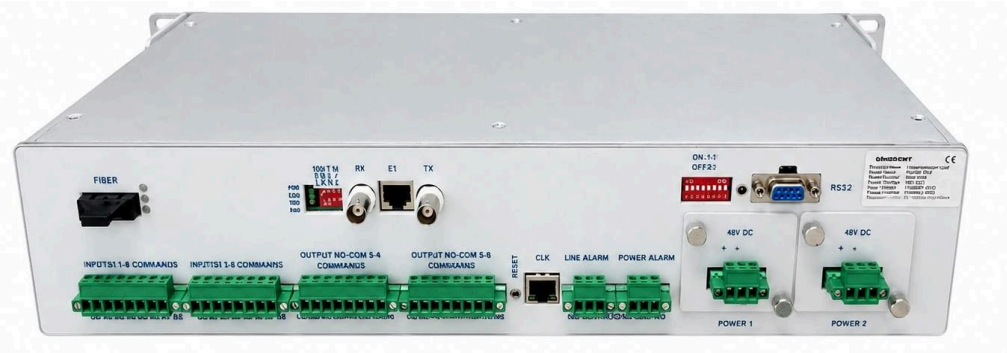


Figure 2. SMG50 rear panel

PANEL LABEL	CONNECTION GROUP	APPLICATION NOTE
FIBER	Fibre optic interface	Confirm the fibre type and optical link values from the manufacturer's documentation.
E1 RX / E1 / TX	E1 connection group	The RJ45 pinout and TX/RX connections are given in Section 6.
RS232	Serial communication port	The DB9 pinout and cable mapping are given in Section 5.
INPUTS 1–8 COMMANDS	Input terminal groups	Match the channel number, common terminal and signal values to the connection drawing.
OUTPUT NO-COM S-4 / S-8 COMMANDS	Output terminal groups	NO/COM markings are visible. Check the technical document for contact load limits.
RESET / CLK	Marked service interfaces	Determine the function and conditions of use according to the manufacturer's procedure.
LINE ALARM / POWER ALARM	Alarm terminal groups	Confirm the contact arrangement and normal state from the connection drawing.
POWER 1 / POWER 2	Two supply groups; 48 V DC label	Polarity and operating range are as stated on the unit label and the approved drawing.

This view introduces the terminal groups. For electrical connection, use the approved terminal diagram rather than the photograph.

SECTION 4

4 APPLICATION EXAMPLES

4.1 Direct fibre optic connection

The SMG50 units at the two stations communicate directly over a fibre optic link. The command inputs and outputs of the distance protection relay at each station are connected to the local SMG50, and commands are transferred between the two ends.

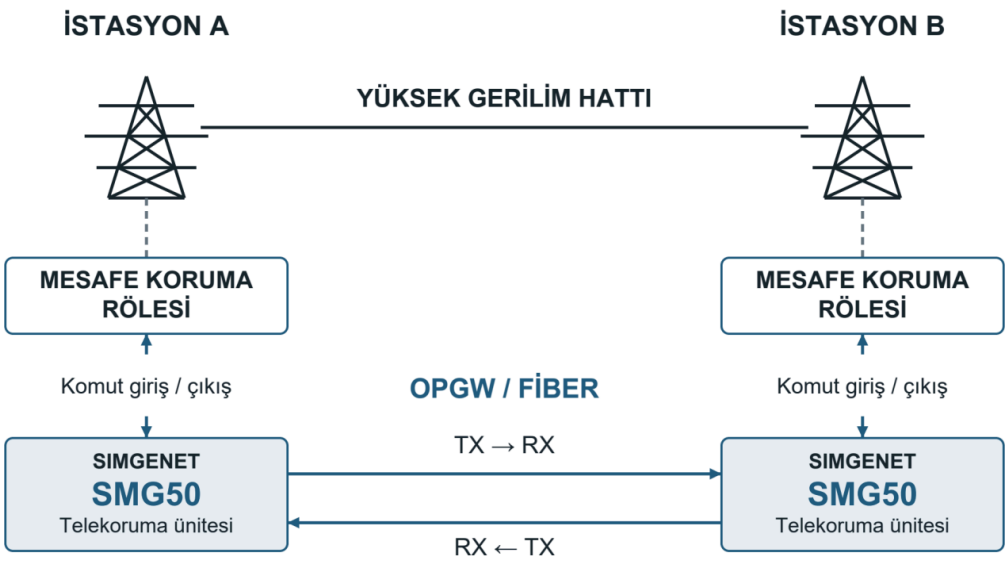


Figure 3. Direct fibre application between two SMG50 units

Connection and commissioning

1. Connect the optical TX output of end A to the RX input of end B, and the TX output of end B to the RX input of end A. Match the fibre type, connectors and optical link budget to the site design.
2. On both units, enable the Fiber channel enabled (“Fiber kanal açık”) option under Settings and save. Check the Fiber channel status on the Indicators (“Göstergeler”) screen.
3. Check the channel mapping between the protection relay and the SMG50. Following the approved commissioning procedure, test command transfer in both directions and compare the input, output and event records.

SECTION 4

4.2 Connection through an SDH or multiplexer network

Transport between the two stations can be provided over an SDH/MUX network. The SMG50 is connected to a suitable E1 or RS232 service interface of the local SDH/MUX equipment. At the remote station, the same service is delivered to the SMG50 at the far end.

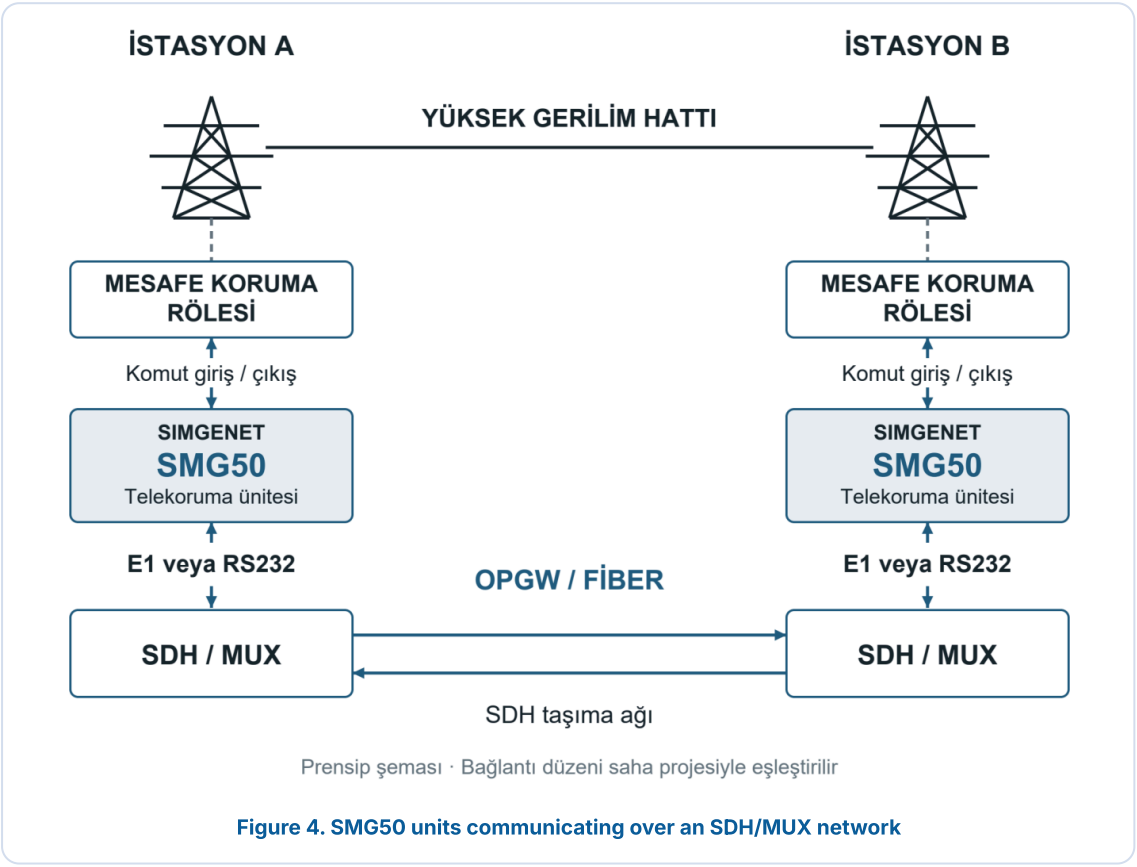


Figure 4. SMG50 units communicating over an SDH/MUX network

Service mapping

1. Select the E1 or RS232 interface according to the site design. Configure the service connection and port mapping between the two ends on the SDH/MUX.
2. For RS232, use the pins given in Section 5 and match the speed and parity settings with the far end. For E1, connect the TX/RX pairs given in Section 6 according to the SDH/MUX port's own pin table.
3. Enable and save the channel used on the SMG50. Check the status on both the SMG50 and the SDH/MUX, then test the protection command in both directions and record the results.

SDH/MUX service settings and the end-to-end delay assessment depend on the characteristics of the transport equipment used and on the acceptance criteria of the facility.

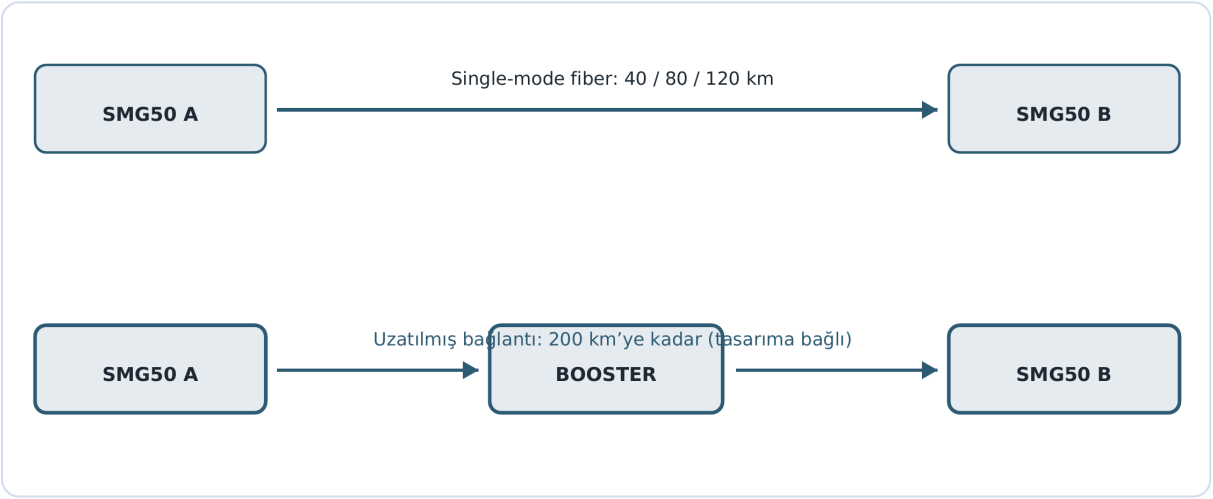
SECTION 4

4.3 FIBRE OPTIC MODULES AND DISTANCE OPTIONS

SMG50 fibre communication can be configured with single-mode optical module options for nominal 40 km, 80 km and 120 km links. With a compatible optical booster and an engineered link, the distance can be extended up to 200 km.

CONFIGURATION	NOMINAL DISTANCE	APPLICATION
Single-mode fibre module	40 km	Direct optical link
Single-mode fibre module	80 km	Direct optical link
Single-mode fibre module	120 km	Direct optical link
Fibre + optical booster	Up to 200 km	Engineered long-distance link

Example link arrangements



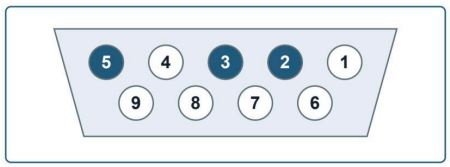
Engineering and acceptance notes

- The 40/80/120 km values are nominal module classes; they are not a reach guaranteed under every site condition.
- Actual reach depends on fibre attenuation, splice/connector losses, the optical power budget and the operating margin.
- The 200 km option requires a compatible booster, a verified topology and an optical budget; it is not a property of the module alone.
- Booster location, optical receive/transmit levels and end-to-end teleprotection performance must be verified during FAT/SAT or site commissioning.
- Module part number, wavelength, Tx/Rx optical levels and booster model must be confirmed against the approved product datasheets.

SECTION 5

5 RS232 CONNECTION AND PINOUT

The RS232 interface of the SMG50 is a female DB9 socket. The numbering below shows the socket on the unit viewed from the front. Viewed from the solder side of the cable, the layout is mirrored; always go by the pin numbers marked on the connector.



DB9 dişi soket · Cihaz üzerindeki sokete önden bakış

Figure 5. Front view of the RS232 socket

PIN	SIGNAL	FUNCTION
2	RX	Receive data input
3	TX	Transmit data output
5	GND	Signal ground

Far-end connection

The SMG50 TX line is connected to the far-end RX line, and the SMG50 RX line to the far-end TX line. Signal ground is connected between the GND terminals. The connection for two ports with the same pinout is shown below.



Aynı pin dizilimine sahip iki port için bağlantı eşleştirmesi

Figure 6. RS232 TX, RX and GND connection mapping

Communication settings

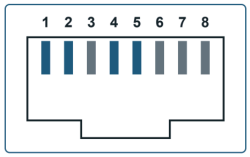
Under Settings > Communication, LED & Function (“Haberleşme, Led & Fonksiyon”), enable the RS232 channel enabled (“RS232 kanal açık”) option. Match the RS232 baud rate with the far end; the screen example shows 19200. The parity options are even and none. Save the settings with Save (“Kaydet”) and check them with Read (“Oku”).

With a different far-end device such as an SDH/MUX, the pin numbers may differ. Make the connection according to the TX, RX and GND functions of the far-end device; do not choose the cable only by the physical similarity of the connector.

SECTION 6

6 E1 CONNECTION AND PINOUT

The pinout of the E1 RJ45 interface is given below. The view shows the socket on the unit from the front, with the latch slot at the bottom. The E1 socket is a communication interface separate from the Ethernet and Service Ethernet connections.



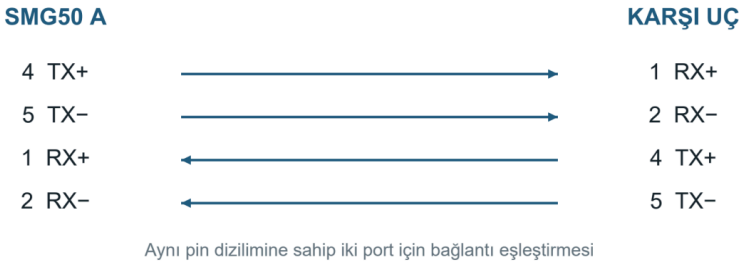
RJ45 soket · Önden bakış · Mandal boşluğu aşağıda

Figure 7. Front view of the E1 RJ45 socket

PIN	SIGNAL	FUNCTION
1	RX+	Positive leg of the receive pair
2	RX–	Negative leg of the receive pair
4	TX+	Positive leg of the transmit pair
5	TX–	Negative leg of the transmit pair

Far-end connection

The TX pair is connected to the RX pair at the far end, keeping the + and – legs in order. The mapping for two E1 ports with the same pinout is shown below. For an SDH/MUX connection, use the port pin table of the far-end equipment.



Aynı pin dizilimine sahip iki port için bağlantı eşleştirmesi

Figure 8. Mapping of the E1 transmit and receive pairs

Coaxial connection and channel selection

For a coaxial E1 connection, connect the TX output to the far-end RX input and the RX input to the far-end TX output. Match the cable and interface selection to the site design.

Enable and save the E1 channel enabled (“E1 kanal açık”) option under Settings. Check the E1 status on the Indicators screen, and verify command transfer in both directions using the approved commissioning procedure.

SECTION 7

7 WEB ACCESS AND NAVIGATION

ACCESS ITEM	DEFAULT VALUE
Web / Service Ethernet IP address	192.168.0.100
Web user name	Admin
Web password	Simgenet
Touch Panel password	340026

First connection

1. Connect the computer to the Service Ethernet network. Set the computer's IPv4 address in the same subnet as the unit, without creating an address conflict.
2. Open the unit's IP address in a browser. Enter Admin as the user name and Simgenet as the web password; both are case-sensitive.
3. Check the unit and system information on the Indicators page. At first commissioning, record the unit identity and the current network settings.
4. Change the web password on the Settings page in line with your organisation's policy. Confirm that you can log in again with the new password.

Menu structure

MENU	MAIN FUNCTION	MANUAL SECTION
Indicators ("Göstergeler")	Device status, recent records and system information	8–9
Network ("Ağ")	Ethernet, Service Ethernet, RTC and SNTP	10–11
Records ("Kayıtlar")	Reading, transferring and exporting records	12
Settings ("Ayarlar")	Labels, communication, LED/function and user	13–14
Tools ("Araçlar")	Main/Display restart and ping	15

> Note the current settings before changing a network address. If the session drops after saving, check the computer's network settings and connect to the unit's new address.

SECTION 8

8 DEVICE STATUS

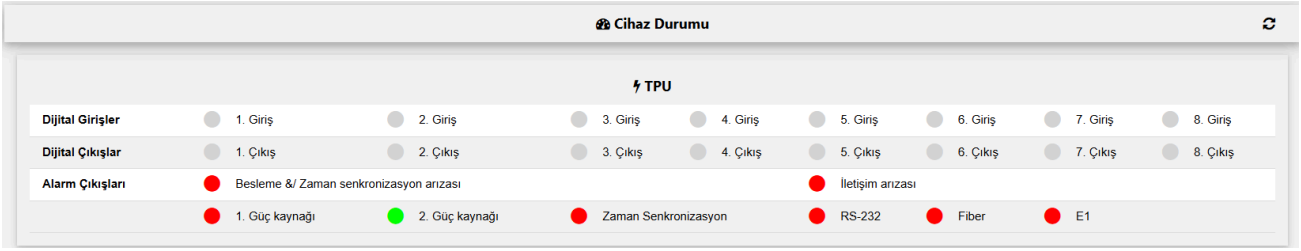


Figure 9. Device Status area on the Indicators screen

On the Indicators page, digital inputs and outputs 1–8 are monitored as separate channels. The Alarm Outputs (“Alarm Çıkışları”) row shows the power/time synchronisation fault and the communication fault headings.

INDICATOR GROUP	MONITORED FIELD
Digital Inputs / Digital Outputs	Channel 1–8 status indicators and channel names.
Alarm Outputs	Power and time synchronisation fault; communication fault.
Power and time	Power supply 1, power supply 2 and time synchronisation.
Communication	RS-232, Fiber and E1 channel status.

Reading with the recent records

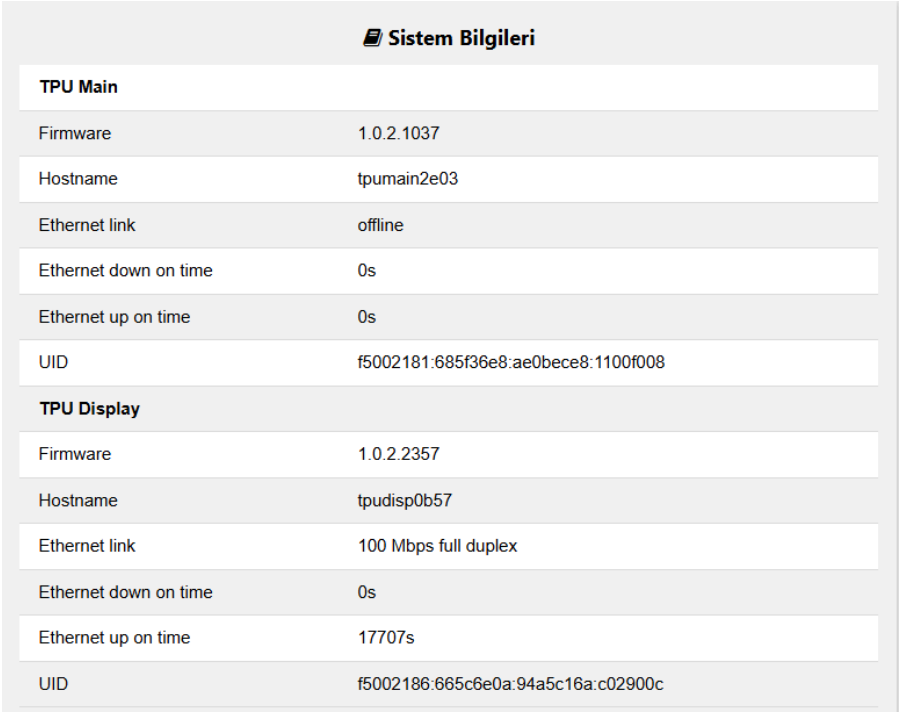


Figure 10. Detail from the Recent Records table

The Recent Records (“Son Kayıtlar”) table shows the sequence number, time, time difference, description and Healthy (“Sağlıklı”) columns. Read each event description together with the related panel and channel indicator. No single column or colour is, on its own, an overall acceptance result showing that every function of the unit is healthy.

SECTION 9

9 SYSTEM INFORMATION



Sistem Bilgileri

TPU Main	
Firmware	1.0.2.1037
Hostname	tpumain2e03
Ethernet link	offline
Ethernet down on time	0s
Ethernet up on time	0s
UID	f5002181:685f36e8:ae0bece8:1100f008
TPU Display	
Firmware	1.0.2.2357
Hostname	tpudisp0b57
Ethernet link	100 Mbps full duplex
Ethernet down on time	0s
Ethernet up on time	17707s
UID	f5002186:665c6e0a:94a5c16a:c02900c

Figure 11. TPU Main and TPU Display system information

FIELD	USE
Firmware / Hostname	Record the Main and Display versions and names separately.
Ethernet link	Check the link status and the speed/duplex shown on screen.
Ethernet up/down on time	Add the link time information to the fault record.
UID	For technical support and inventory, copy the identifier exactly as shown on the unit screen.
Time / File System	Monitor the date, time, time zone, uptime, free space and record capacity.

In the example screen, TPU Main firmware is shown as 1.0.2.1037 and TPU Display firmware as 1.0.2.2357. These are example versions of the unit from which the capture was taken. In the File System field, the capacity is shown as 42240 and the number of new records as 25.

SECTION 10

10 ETHERNET NETWORK SETTINGS

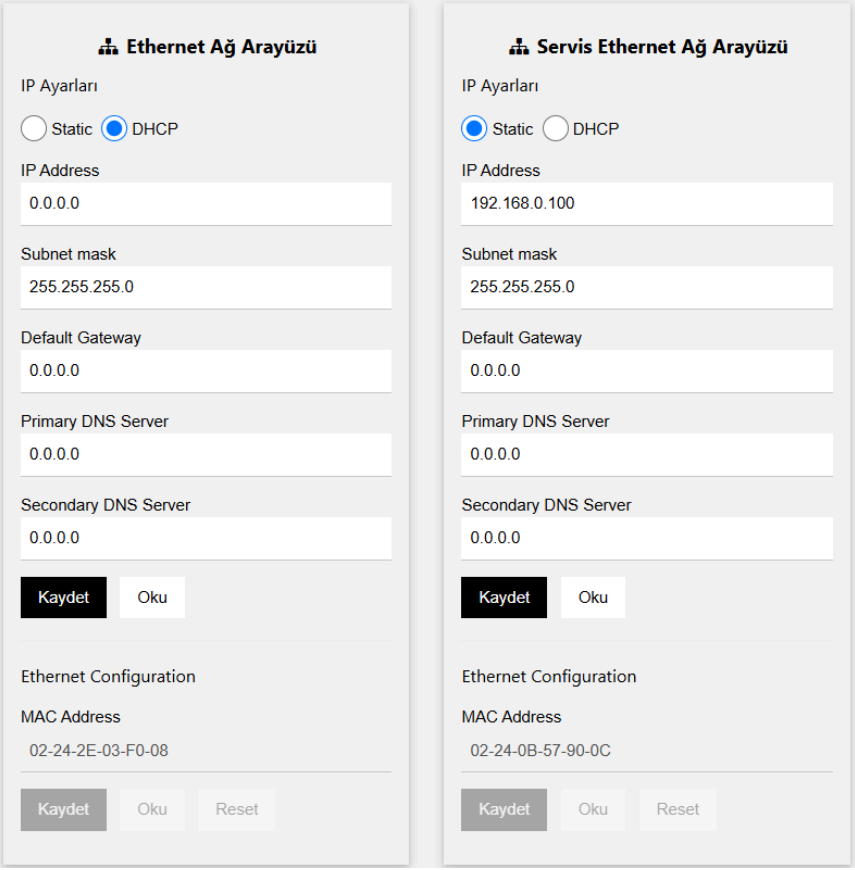


Figure 12. Ethernet and Service Ethernet settings

The Ethernet Network Interface and the Service Ethernet Network Interface have separate IP configurations. Each panel contains Static/DHCP, IP Address, Subnet mask, Default Gateway and DNS fields.

1. Identify the interface you will change and record its current settings.
2. Select static addressing or DHCP according to the network plan. For static use, enter the address, mask and, if required, the gateway/DNS values.
3. Use Save (“Kaydet”) on the relevant panel. Then check the settings with Read (“Oku”); if the connection drops, reconnect via the new address.

In the example screen, Service Ethernet is shown as static 192.168.0.100 / 255.255.255.0. DHCP is selected in the main Ethernet section. MAC addresses are shown separately for each interface.

SECTION 11

11 RTC AND SNTP TIME SETTINGS

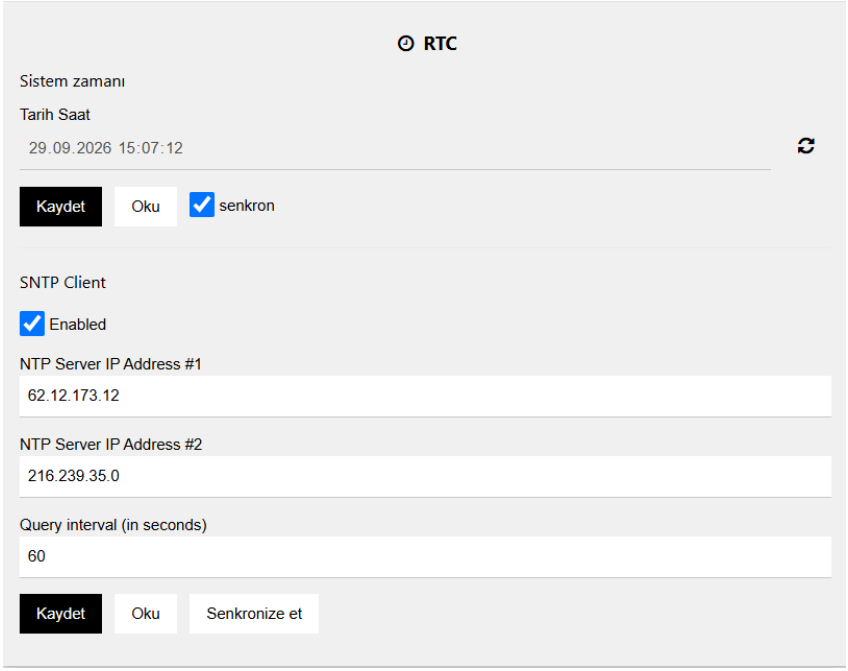


Figure 13. RTC and SNTP Client fields

The RTC area contains the system date/time, Save, Read and the sync (“senkron”) option. The SNTP Client section contains Enabled, two NTP Server IP Address fields, Query interval and the Synchronise (“Senkronize et”) control.

1. Determine the facility’s time zone and approved time source.
2. If SNTP is to be used, configure the Enabled option and the server addresses. Enter the Query interval in seconds.
3. Save the SNTP settings with Save. Use the Synchronise control if required.
4. Check the RTC time and the time stamps of new event records.

The server addresses and the 60-second query interval shown in the capture are an example configuration. In the field, the organisation’s time servers and network access rules apply.

SECTION 12

12 EVENT LOGS AND FILE EXPORT

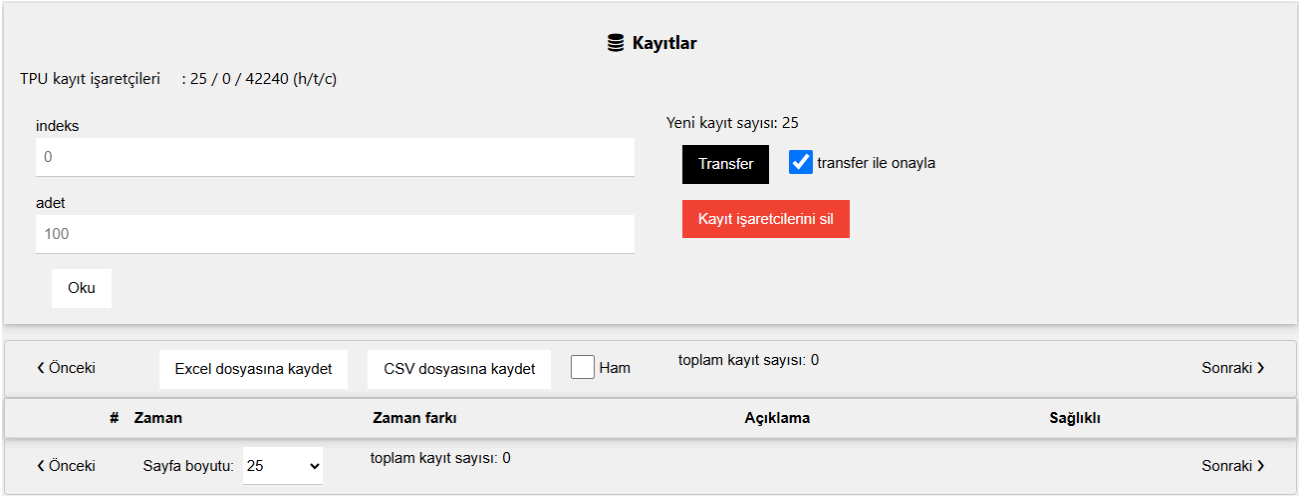


Figure 14. Record reading, transfer and export fields

The interface shows a record capacity of 42240. In the example, the TPU record pointers appear as “25 / 0 / 42240 (h/t/c)”. The “new record count”, the “total record count” shown in the table and the capacity are separate fields.

FIELD / CONTROL	OPERATING STEP
Index / count / Read	Set the range to be read and use the Read control.
Transfer / confirm with transfer (“transfer ile onayla”)	Before transfer, check the unit, the scope and the confirmation option.
Save to Excel file / Save to CSV file	Save the data read in the selected format; check the scope of the resulting file.
Raw (“Ham”)	Select the required view before exporting.
Previous / Next / page size	Navigation and display settings of the record table.
Delete record pointers (“Kayıt işaretçilerini sil”)	This operation affects the pointers. Confirm the conditions of use and recovery from the manufacturer’s procedure.

Recommended record retrieval sequence

1. Read the record range and check that the expected time interval is present in the table.
2. Save the CSV or Excel file. Include the unit identity and the date in the file name.
3. Open the file and check the record count and time stamps; then add it to the maintenance record.

For the functional detail of the h/t/c abbreviations in the record pointers and the effect of the confirm-with-transfer option, the manufacturer’s description of the relevant software applies.

SECTION 13

13 COMMUNICATION LED AND FUNCTION SETTINGS

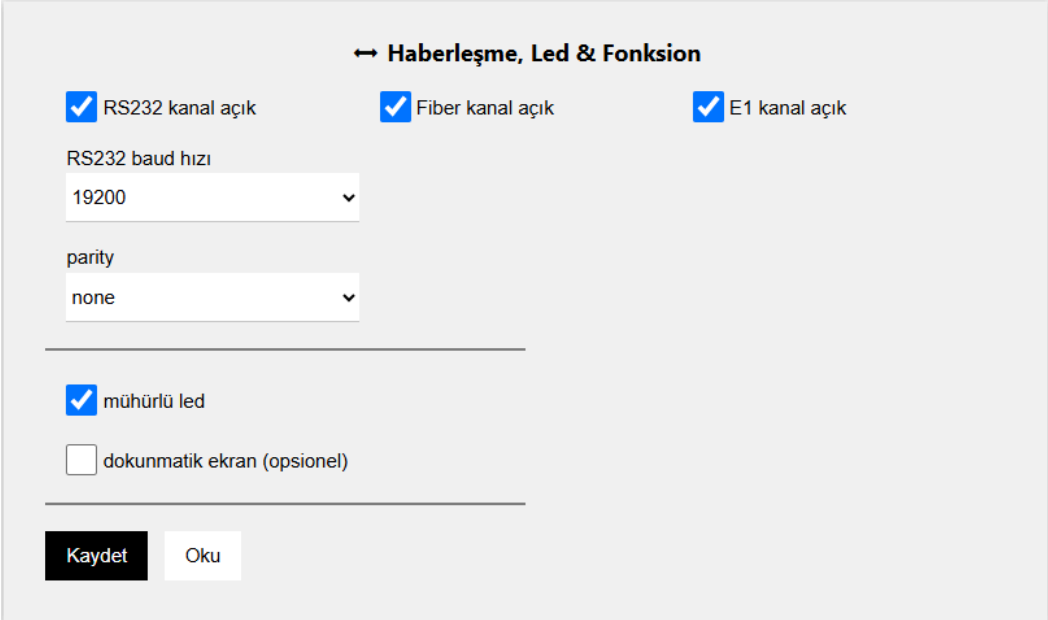


Figure 15. Communication, LED & Function section of the Settings screen

OPTION	VALUE / CHOICE	APPLICATION
RS232 channel enabled (“RS232 kanal açık”)	Checked	RS232 channel option; match it with the far end and the site plan.
RS232 baud rate (“RS232 baud hızı”)	19200	Select the same value as the far-end serial speed.
parity	even / none	Match the even or none selection with the far end.
Fiber channel enabled (“Fiber kanal açık”)	Checked	Option to enable the Fiber channel.
E1 channel enabled (“E1 kanal açık”)	Checked	Option to enable the E1 channel.
latched LED (“mühürlü led”)	Checked	LED function option. Confirm the behaviour and reset conditions from the manufacturer’s description.
touch screen, optional (“dokunmatik ekran (opsiyonel)”)	Unchecked	Configure to match the display hardware of the unit.

Save changes with the Save control of this section and check them with Read. The example selections are not recommended settings for every facility. An enabled channel does not mean that protection command transfer with the far end has been verified.

SECTION 14

14 LABELS AND USER CREDENTIALS

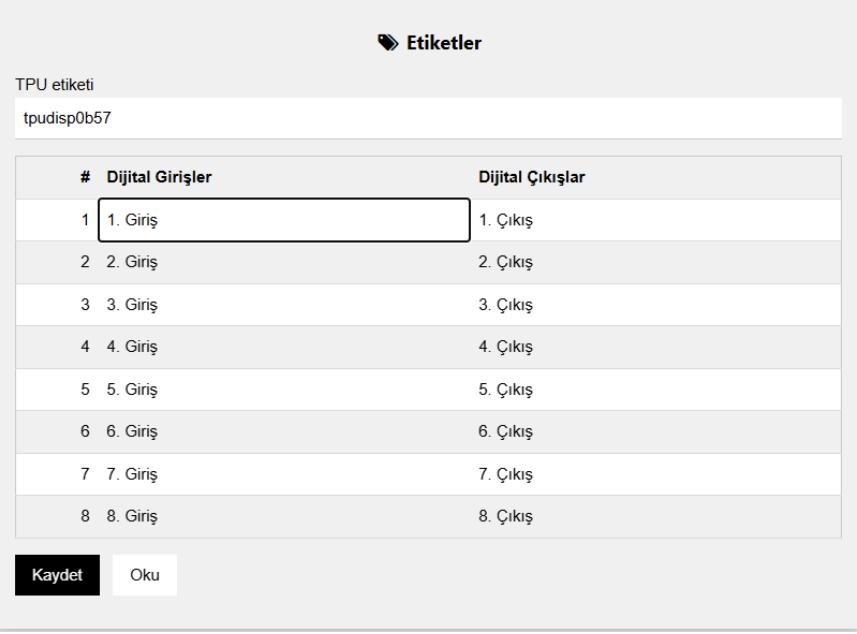


Figure 16. TPU label and input and output labels

The TPU label and the names of digital inputs and outputs 1–8 are edited on the Settings page. Match each channel number to the site label, enter the names and use Save in the relevant section.

Changing the web password

1. Check the user information in the Login Configuration (“Girişi Yapılandırması”) area.
2. Enter the current web password in the Current password (“Geçerli şifre”) field.
3. Enter the same new password in the New password and New password (repeat) fields; complete the operation in the interface.
4. Confirm that you can log in with the new password and store the access information according to your organisation’s procedure.

The default web user is Admin and the web password is Simgenet. The fact that the on-screen user name example reads “admin” does not change the default user information. Changing the web password in this section must not be taken to mean that the Touch Panel password has also changed.

SECTION 15

15 MAINTENANCE TOOLS

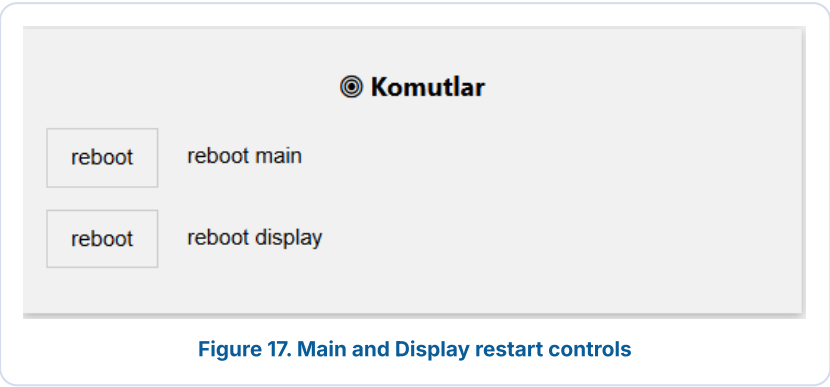


Figure 17. Main and Display restart controls

Restarting Main and Display

In the Commands (“Komutlar”) section, reboot main and reboot display are separate targets. Assess the impact on operation, obtain the required maintenance permission and restart only the component that needs it. The related function or web access may be interrupted during the operation.

1. Save the required records and the current status information.
2. Use the reboot control of the target component and wait for the unit to come back.
3. Check the link, alarm and uptime information on the Indicators and System Information screens.

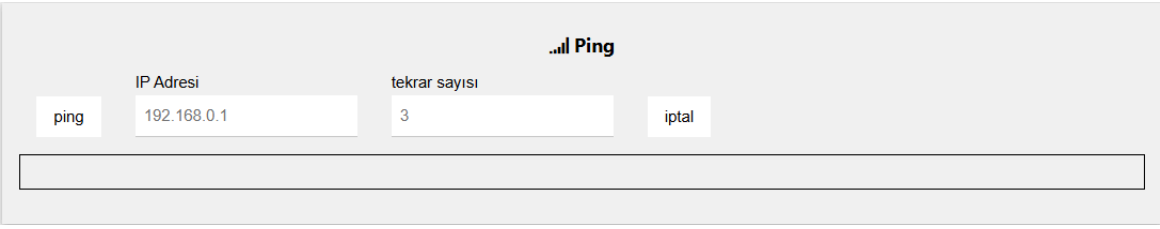


Figure 18. Ping tool

Reachability check with ping

Fill in the IP Address and repeat count fields; start the operation with ping and, if necessary, stop it with cancel. The repeat count in the capture is 3. A ping result is a supporting indicator of network reachability; on its own it does not show that the protection command has been verified end to end.

SECTION 16

16 COMMISSIONING

Carry out commissioning together with the facility's approved acceptance procedure. The sequence below helps to record the basic setting and operating checks.

STEP	CHECK / ACTION	INFORMATION TO RECORD
1	Match the model, supply label and connection drawing.	Unit and site identity
2	Establish web access via Service Ethernet.	IP, mask and interface
3	Read the Main and Display information.	Firmware, hostname, UID
4	Configure the facility network and time settings.	Ethernet, RTC, SNTP
5	Check the channel selections and serial settings.	RS232 speed/parity, Fiber, E1
6	Match the input/output labels to the site list.	Channel 1–8 names
7	Apply the approved function checks.	Acceptance procedure and result record
8	Check record reading and file export.	CSV/Excel file and time range
9	Securely record the web password and final settings.	Handover/maintenance record

Before handover to operation

- Review the active alarm descriptions; assess expected conditions and those to be cleared with the site supervisor.
- Check that the clock agrees with the facility reference and check the time stamps of the event records.
- State clearly in the acceptance record any point not verified by a connection or function test.
- After maintenance, keep the unit identity, version information, changed settings and exported records together.

SECTION 17

17 TROUBLESHOOTING

SYMPTOM	FIRST CHECK	NEXT STEP
No web access	Service Ethernet cable, computer IP and unit address.	If the address has changed, connect to the new IP; check the link status.
Ethernet link offline	Physical cable/port and the far-end network port.	Record the link up/down times and the interface MAC address.
Unexpected clock or record times	RTC, time zone, SNTP Enabled and network access.	Check the approved server addresses and the query interval.
No RS232 / Fiber / E1 communication	Channel enable status and far-end parameters.	Match the wiring to the connection drawing; compare the record descriptions and indicators.
Record file not created	Index/count, selected format and browser download permissions.	Check the target folder; retry with a specific record range.
Access not restored after reboot	Target component, link status and local panel indicators.	Wait for the unit to recover; if the problem persists, send the identity/version and recent records to technical support.

Technical support request

Include in the support request the unit identity, the TPU Main/Display versions, the interface used, the time of the problem, the last setting change made and the related event records. Do not write the Web or Touch Panel passwords in plain text in the support request.

Routine operating checks

According to the facility maintenance plan, review the alarm and link status, time synchronisation and record export. Compare the state before and after each operation, and record any unexplained change.

SECTION 18

18 TEST REPORTS AND SPECIFICATION REFERENCE

The cover information of the SMG50 test reports is summarised below.

REPORT	SCOPE STATED ON THE COVER	TEST DATE	REPORT LENGTH
LVD-26068	EN IEC 60255-27:2025	22.09.2026	14 pages
EMC-26379	Standards listed on the EMC report cover	02–11.09.2026	47 pages
EC-26009	EN 60068 series; detailed list of standards on page 6 of the report	15–16.09.2026	18 pages

EMC test standards

The EMC standards on the report cover, together with the additional IEC 61000-4-18 standard declared by the manufacturer, are listed below.

STANDARD	TEST / ASSESSMENT TITLE
EN IEC 61000-4-2:2025	Electrostatic discharge immunity
EN IEC 61000-4-3:2020	Radiated RF electromagnetic field immunity
EN 61000-4-4:2012	Electrical fast transient / burst immunity
EN 61000-4-5:2014	Surge immunity
EN IEC 61000-4-6:2023	Immunity to conducted disturbances induced by RF fields
EN 61000-4-8:2010	Power frequency magnetic field immunity
IEC 61000-4-18	Damped oscillatory wave immunity
EN IEC 61000-6-4:2019	Emission standard for industrial environments

The report lengths stated on the covers refer to the full reports. As the available copies do not contain the result tables, test levels, measured values and pass/fail decisions are not given in this manual. For a definitive assessment, the signed and stamped full reports apply.

TEİAŞ specification reference

Functional reference: TEİAŞ-MYD/2024-062.0 Protection Signalling Communication Device (Teleprotection) Technical Specification. Compliance with the specification and acceptance are assessed by reviewing the relevant clause, the approved product documentation and the test/acceptance records together.

Official source: www.teias.gov.tr/elektrik-malzemeleri-teknik-sartnameleri

SimgeNet Mühendislik

SIMGENET SMG50

TELEPROTECTION UNIT

User, Configuration and Operation Manual

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