

TDK-Lambda

Instruction Manual

SFL-ASY-KLN-LAN

LAN option for SFL

- Quality Assurance Provision -

This product passed our close product inspection.
When it did not satisfy an early purpose, specifications by trouble after the delivery in 2 years, we repair it gratis in the case of the responsibility in our production. Please report to agency or us.
We guarantee the measurement accuracy of the main unit for 2 years and 6 months for the ripple & noise option after delivery.
But I will repair it undermentioned for payment.

1. In the case of trouble / the damage that occurred by the handling against usage mentioned in the manual of this product and instructions.
2. When you remodeled it without our approval
3. In the case of trouble / the damage that occurred because the handling was not reasonable such as the bad transportation by the visitor, a fall at the time of the movement, a shock.
4. In the case of trouble / the damage by the natural accidents such as a fire / an earthquake / the flood.
5. In the case of trouble / the damage that occurred by the abnormal input voltage.
6. When we dispatched an engineer.

Copyrights

According to relevant laws, all the copyright of these manual contents belongs to TDK-Lambda. Copy of any part or a whole of this manual is prohibited without prior written consent by TDK-Lambda.

Read this manual before start using this product

Please read this manual carefully before using this product.
This manual should be kept in an accessible place.
Attach this manual to this product when you relocate them.

This manual is written based on the functions of LAN option SFL-ASY-KLN-LAN for SFL when shipped from TDK-Lambda.
The specifications are subject to change without any notice.

Registered trademark

Microsoft Windows, Microsoft Excel, ActiveX, Visual Basic, Visual C ++ are registered trademarks of Microsoft Corporation in USA and other countries

READ FIRST

Please Read this “For your Safety Usage” carefully to avoid misunderstanding or wrong operation of the SFL-ASY-KLN-LAN LAN option for SFL.

Chapter structure

The contents and chapters are as follow.
When using it for the first time, read from "Chapter 1 GENERAL".

Contents

Chapter 1 GENERAL: Describes the overview and features of this product.

Chapter 2 Ethernet (LAN) Interface:
Describes LAN communication specifications and how to check communication.

For your Safety Usage

For your safety reasons, you are requested to read this manual thoroughly first. TDK-Lambda shall not be responsible for any accidents which resulted from your improper use or something like that.

About safety symbols (marks)

The following symbols are used in this manual and products to ensure the safe and correct use of this device. Please understand the meaning of the symbols and always keep in mind the safety.



This symbol means Careful for Handling. It is suggested to read manual to know how to protect operator and product itself against risk of damages.



This term indicates the possibility of causing fatal damage to an operator.



This term indicates the possibility of causing serious damages to an operator.



This term indicates the possibility of causing low-level damages to an operator.

Note

This term indicates what you want to know of product performance or operation method.



This term indicates a prohibited act.



This symbol indicates that this product meets the requirements of the applicable EU Directive.

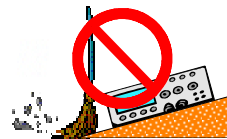
Installation environment



Do not use in environments where explosive and corrosive gases are in the surroundings. Avoid using it in strong electromagnetic environment. Under a strong electromagnetic field environment, the noise induced in the input cable is measured as an input signal due to the characteristics of the instrument, so the measured value may be affected.



Avoid locations that are hot or in direct sunlight. Use under the specified ambient conditions. In case of condensation, please do not use this product until completely dry. Avoid places with high humidity.



Avoid using it in a dusty or dusty place, or in a tilted or vibrating place. Avoid using it in a poorly ventilated place. For cooling, ensure sufficient space around the air intake and exhaust so that they are not blocked by objects. Be sure to level it. Please do not use it in a place with inclination and vibration. When installing large equipment, use caster locks or anchor bolts to prevent the equipment from moving or falling due to vibrations including earthquakes.

■ Disassembly



Inside this product, there are parts that risk danger to the body such as high voltage. Do not remove covers or panels. Use under the specified ambient conditions. In case of condensation, please do not use this product until completely dry. Avoid places with high humidity.

■ Input voltage



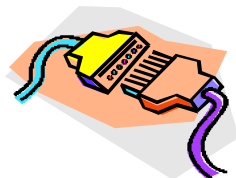
Be sure to use the input power supply voltage of this product within the rated range. Use Power Cable which is suitable for your own country's safety standard.

■ User



This product should be used only by a person who has enough knowledge of electronics. In case the operator does not have enough electronic knowledge, use it only under supervision of knowledgeable person.

■ Connection / removal



Before connecting cables and devices, be sure to turn off the power switch of each device.

■ Move



Turn off the power switch and remove all wiring cables. Attach the instruction manual when moving this product.

When transporting this product, be sure to use exclusive packing materials. When there is no exclusive packing material, please pack it after sufficiently protecting with cushioning material.

■ Maintenance and inspection



Always unplug the power cord to prevent electric shock accidents when performing maintenance and inspection.

Periodic maintenance, inspection and cleaning are recommended to maintain the safety of this product. Periodic calibration is recommended to maintain the performance of this product.

■ Overload



Do not apply voltages outside the specification range on the connector and input terminals of this product. Do not use the connector and input terminal of this product for purposes other than those described in this manual.

■ Calibration and repair



If calibration or repair is necessary, contact us or your dealer. Calibration and repair of this product is done by us.

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Chapter 1. GENERAL

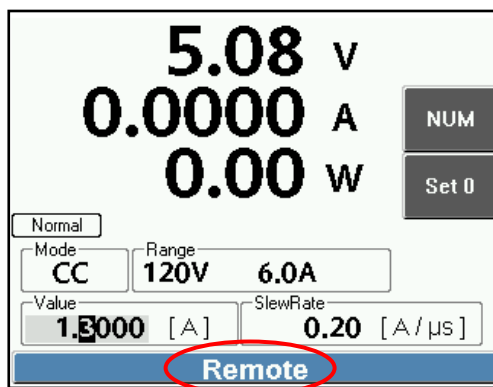
To use this option, the firmware of the SFL main unit must be 4.3.8 or higher.
 If the firmware is less than 4.3.8, a firmware update is required.
 Please contact us for details on compatible models.
 This option cannot be used in combination with SFL-ASY-IEEE (IEEE/DIDO option).

With this option, you can remotely control the SFL series electronic load, which is our product, from a PC or the like via LAN communication.

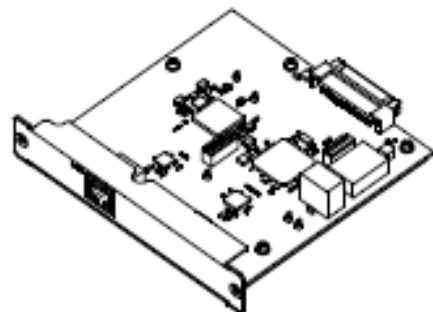
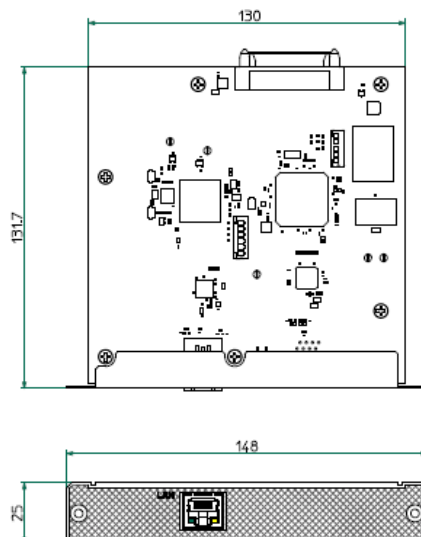
For the command to control the SFL series electronic load, refer to the SFL series electronic load instruction manual "Chapter 13 Remote control".

The command system is the same as the standard USB interface installed in the SFL series.

During remote control of this product, the following screen (Remote) is displayed on SFL.
 Switch to panel operation (local operation), press the CANCEL key.



External view



Chapter 2. Ethernet (LAN) Interface

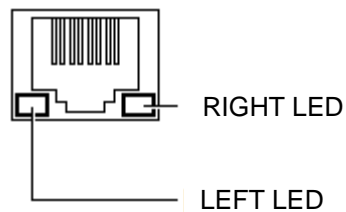
Ethernet (LAN) specification

This unit can communicate with the TCP/IP protocol.

LAN I/F specification

Specification	IEEE 802.3
LAN I/F connector	RJ45
Data rate	10Base-T 100Base-TX
Line feed code	LF

The communication status can be checked by the LEDs on the LAN I/F connector. The appearance of the LAN I/F connector and the meanings of the LEDs are described below.



Appearance of LAN I/F connector

LAN I/F Connector LED Definition

LED	LED State		Definition
LEFT LED	Green	Lit on	link up
		Lit off	link down
RIGHT LED	Yellow	Blinking	Sending / receiving data

The default IP address values are:

SFL-ASY-KLN-LAN default IP address and port number

Communication protocol	SFL-ASY-KLN-LAN default IP address	port number
TCP/IP	192.168.179.40	10001

*By default, the fixed address is set.

This unit supports only one-to-one multicast communication. One-to-many broadcast communication is not supported.

Setting LAN option

1. Starting Check

Turn on the power supply of the SFL main unit. Mounting status of Option is displayed at a particular place on the version checking screen at the time of startup. Check the LAN IF is displayed there. This can also be checked on version display of Menu/system.

If it is displayed, installation is complete.

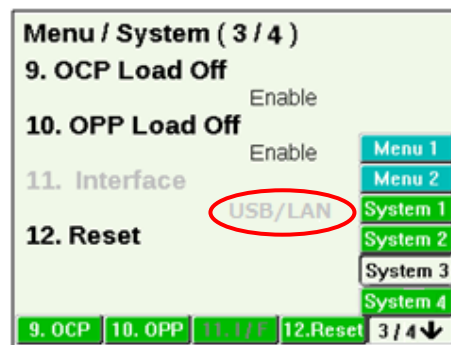
If it is not displayed, turn off the power supply of the SFL main unit and check that the option is mounted correctly.

If it does not work even after checking again, restore the factory settings with "Menu/System (3/4) 12.Reset" and check if the firmware version is 4.3.8 or later.



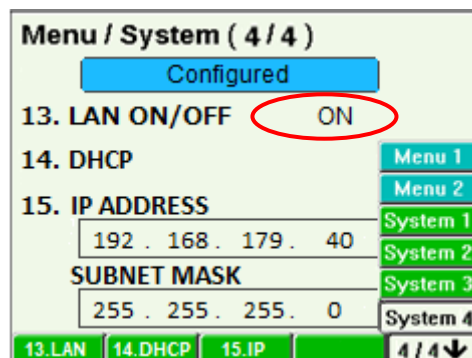
When the SFL-ASY-KLN-LAN is attached to the SFL main unit, the characters "USB/LAN" are displayed in Menu/System (3/4) 11.Interface. This display status means that you can use USB or LAN.

In addition, key operation is not possible for the display of 11.Interface.

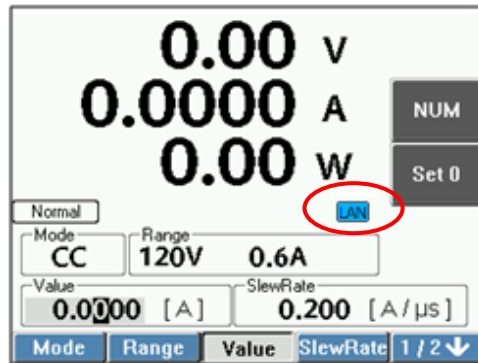


2. Enable LAN function

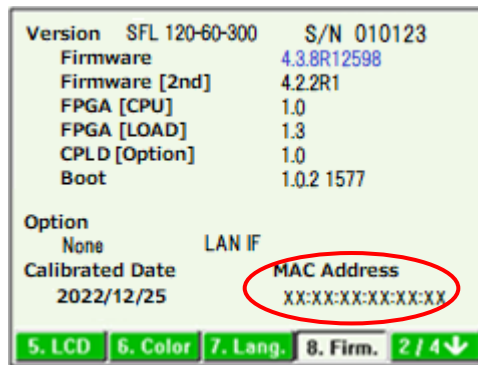
Even if the SFL-ASY-KLN-LAN is recognized by the SFL main unit, if LAN ON/OFF is set to "OFF", the LAN function is disabled. To turn "ON", open Menu/System (4/4), select 13. LAN, and set LAN ON/OFF to "ON".



When LAN ON is recognized, the characters "LAN" are displayed on the main screen.



MAC Address is displayed on the firmware version screen.



* MAC address is set in the SFL main unit.
Be sure to use the SFL main unit and SFL-ASY-KLN-LAN in the same combination as at the time of purchase.

How to change IP address (DHCP)

Enable DHCP by selecting "ON" in Menu/System (4/4) 14.DHCP.

DHCP Settings Screen

How to change IP address (fixed setting)

Menu/System (4/4) 15. IP allows you to change the IP address and SUBNETMASK. Open Menu/System (4/4).

Select 15. IP and change the IP address and SUBNETMASK.

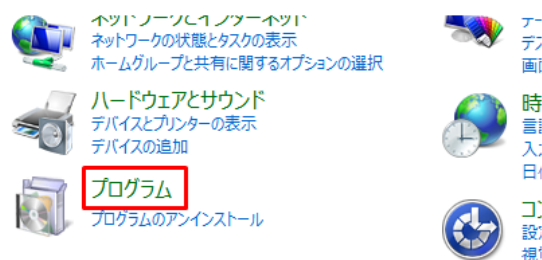
Ethernet (LAN) connection check

Using Telnet makes it relatively easy to check the operation of the LAN I/F. Telnet is the name of a general-purpose communication protocol used primarily in IP networks. The name of the terminal software that can run this protocol is also commonly called Telnet.

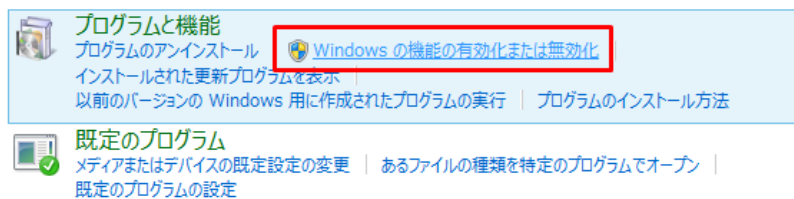
Telnet commands are not enabled by default in Windows 7 and later operating systems. It must be enabled in the OS settings.

Enable Telnet command

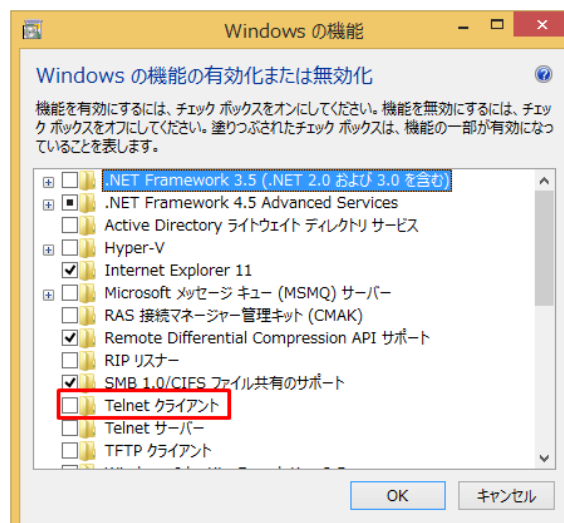
1. Click Control Panel → Programs.



2. Click Programs and Features → Enable or Disable Windows Features.



3. Check the "Telnet Client" checkbox and click OK.



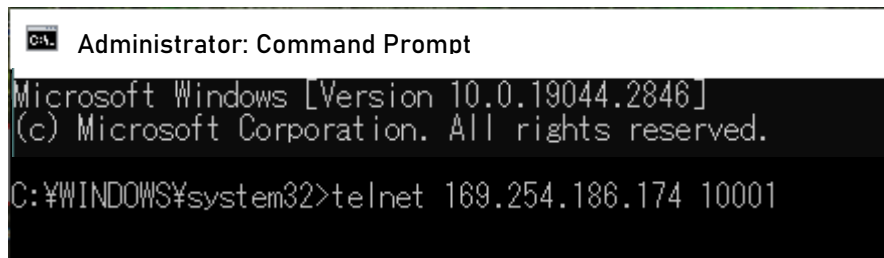
Telnet is now enabled.

Next, we will explain how to communicate with the instrument using Telnet commands.

Check communication by Telnet command

1. Start a command prompt with administrator privileges.
2. From the command prompt, enter the command as follows.

```
telnet "SFL series IP address" 10001
```



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19044.2846]
(c) Microsoft Corporation. All rights reserved.
C:\WINDOWS\system32>telnet 169.254.186.174 10001
```

※ In the above example, the IP address of the instrument is set to 169.254.186.174.

When you enter the command and press the enter key, it will be a screen where all the characters have disappeared.

3. Enter commands for the instrument.

As an example, execute the command to get version information.

With nothing displayed, type "V" and press the return key.

You can get the version information of this device as shown in the following screen.



```
SFL 120-60-300 FIRMWARE 4.3.8R1
```

This confirms that the LAN I/F is working properly.

When things go wrong

Cannot start communication

- Check if the LAN cable is disconnected or not.
- Check if the LAN cable is properly connected to the electronic load and the PC.
- Check if the IP address and subnet mask of the PC are set correctly.
- Check if the IP address of the electronic load is duplicated with that of other devices.

Specifications

Model		SFL-ASY-KLN-LAN
LAN	Standard	IEEE 802.3
	Network (communication speed)	100BASE-TX (100Mbps), 10BASE-T (10Mbps)
	Supported protocol	IPv4 TCP/IP
	Connector	RJ-45
	Terminator	LF when receiving, LF when sending
General		
Power supply	Input rating	Supplied from SFL main unit DV 12
Input power	At maximum load	1 VA or less
Weight	Main body only	Approx. 140 g
Dimension	Excluding protrusions	148 (W) x 25 (H) x 131.7 (D) mm
Environmental condition	Operating environment	Indoor use
	Operating temperature	0 °C ~ +40 °C
	Operating humidity	20 % ~ 85 % RH (non-condensing)
	Storage temperature	-20 °C ~ +60 °C
	Storage humidity	20 % ~ 85 % RH (non-condensing)
	Altitude	2000 m or less

Removing the LAN option

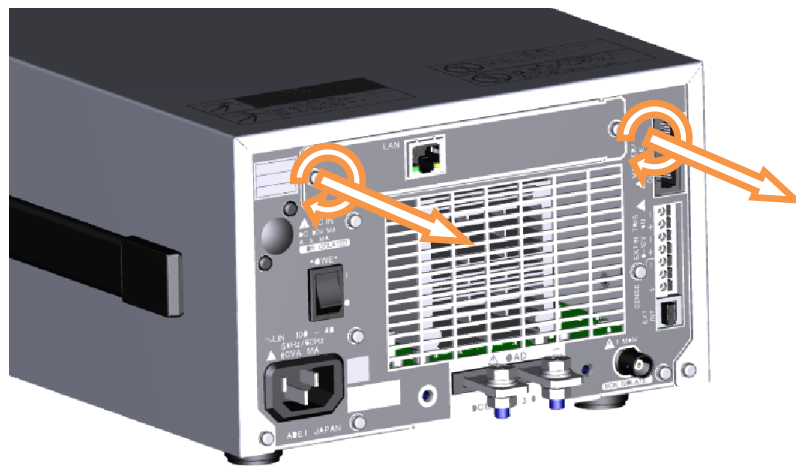
Caution Option and the unit may be damaged.

- ◆ Before starting the work, ensure to turn off the main power switch of the SFL main unit and remove the power cord set from the SFL main unit.
- ◆ Perform the work in environment where ESD protection have been taken.

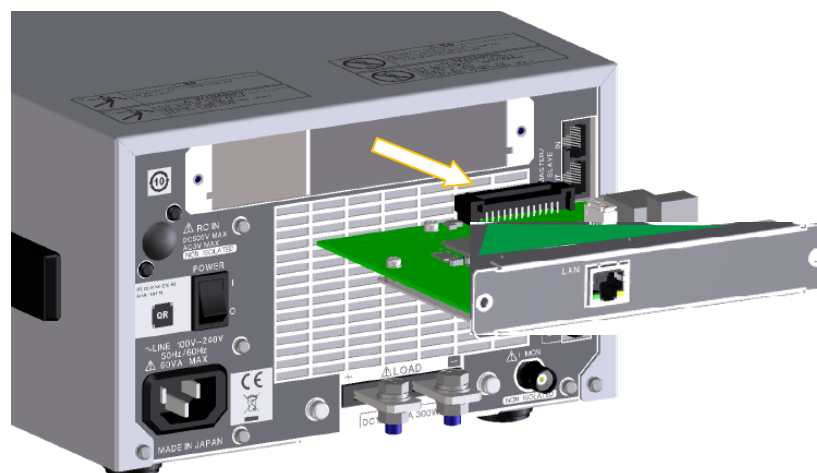
Removal when SFL-ASY-KLN-LAN is not needed (for repairs, replacement with SFL-ASY-IEEE, etc.)

1. Remove LAN option

Use a Phillips screwdriver to remove the two screws that secure the LAN option. The removed screws will be used to attach the blank panel, so do not lose them.



Pull out the LAN option.



2. Fastening the blank panel

Fasten the blank panel using the screws removed earlier.

※ The blank panel that was removed from the main unit when the SFL-ASY-KLN-LAN was shipped is included as an accessory.



Combination of SFL body and SFL-ASY-KLN-LAN

Please be sure to use the same combination as when you purchased it.

**SFL-ASY-KLN-LAN
LAN option for SFL
Instruction Manual**

**M-2621-02
Rev1.0**

TDK-Lambda Corporation

SFL-ASY-KLN-LAN
LAN option for SFL
Instruction Manual
M-2621-02 Rev1.0