

EUCHNER

Application



EKS2 - Setting Date and Time

EN

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1. About this document

1.1. Version

Version	Date	Change/addition	Chapter
01-05/25	05/2025	Prepared	All

1.2. Scope

The purpose of this document is to aid setting the time in the EKS2 using an acyclical command.

1.3. Target group

Design engineers and installation planners for safety devices on machines as well as setup and servicing staff possessing the following expertise:

- specialist knowledge in handling safety components
- expertise in the installation, setup, programming and diagnostics of programmable logic controllers (PLC) and bus systems
- knowledge about the applicable EMC regulations
- knowledge about the applicable regulations on operational safety and accident prevention

1.4. Supplementary documents

The overall documentation for this application consists of the following documents:

Document title (document number)	Contents	
Operating instructions (MAN20001715)	Transponder-coded Electronic-Key-System Electronic-Key-System EKS2	
Possibly enclosed data sheets	Item-specific information about deviations or additions	

1.5. Notice

This document is based on the operating instructions for the EKS2. Please refer to the operating instructions for technical details and other information.

2. Components/modules used

2.1. EUCHNER

Description	Order number / item
EKS2 evaluation unit/read unit	170904 / EKS2-E-PN-MH1-170904
	170915 / EKS2-R1A1-B1-170915
EKS2 Electronic-Key	168433 / EKS2-K-K-B-D2-BK-168433
	168434 / EKS2-K-K-B-D2-BU-168434
	168435 / EKS2-K-K-B-D2-GN-168435
	168438 / EKS2-K-K-B-D2-OG-168438
	168432 / EKS2-K-K-B-D2-RD-168432
	168437 / EKS2-K-K-B-D2-WH-168437
	168436 / EKS2-K-K-B-D2-YE-168436



TIP!

More information and downloads for the aforementioned EUCHNER products can be found at www.euchner.com. Simply enter the order number in the search box.

2.2. Others

Description	Order number / item
SIMATIC ET200SP, CPU 1512SP F-1 PN	6ES7 512-1SK01-0AB0
SIMATIC F-DI 8x24VDC HF	6ES7 136-6BA00-0CA0
SIMATIC HMI MTP1200 Unified Comfort	6AV2 128-3MB06-0AX1

2.3. Software

Description	Version
Totally Integrated Automation Portal	Version V19 Update 3
STEP 7 Professional	Version V19 Update 3
STEP 7 Safety	Version V19 Update 3
WinCC Unified	Version V19 Update 3

3. Functional description

3.1. General

In this application, the date and time are set via the function block provided in the EKS2 evaluation unit using an acyclical command.

With the date and time set, it is possible to:

- process the expiration date of an Electronic-Key in the EKS2
- view the log and the error log with the current time stamp

4. Setting date and time in the control system

A prerequisite for setting the current date and time in the EKS2 evaluation unit is that the current date and time are set in the control system. In this application, the date and time are set in the control system using *Set time in Online & Diagnose*.

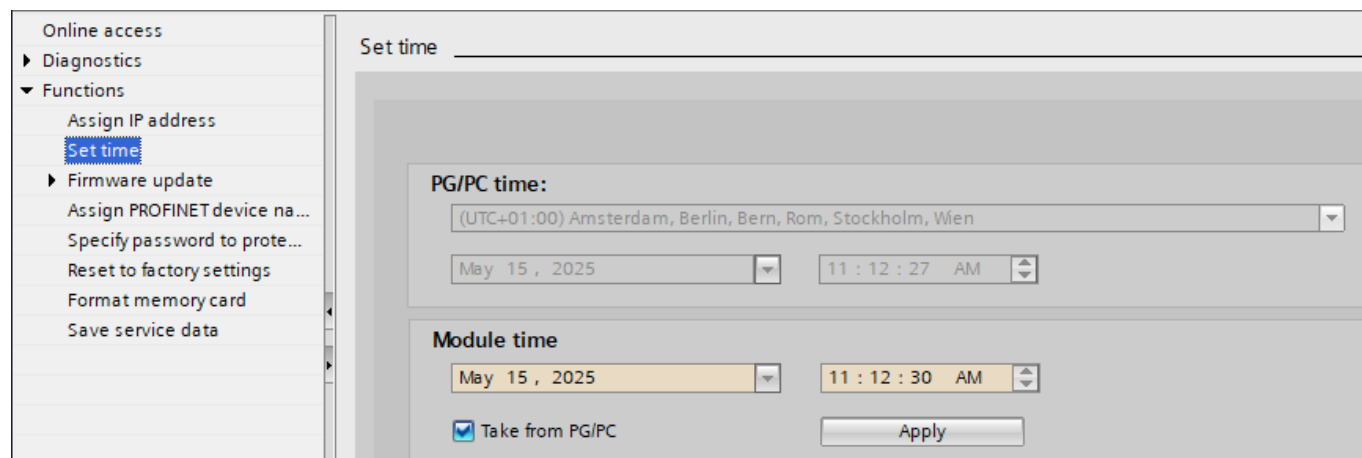


Fig. 1: Setting date and time in the control system

It is also necessary to set the time zone in the control system. For this purpose, open the general properties for the control system. Navigate to the *Time of day* property and select your local time zone.

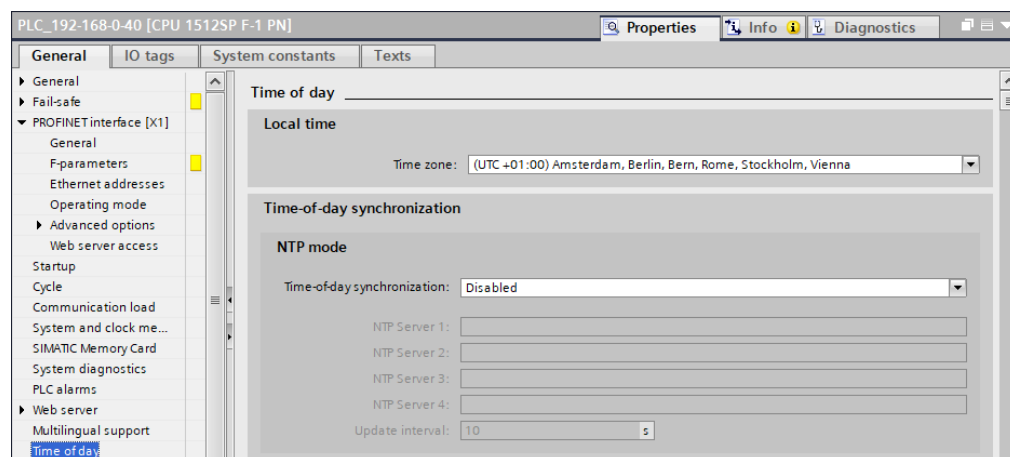


Fig. 2: Configuring time zone in the control system

5. Using the TIA Portal library (from TIA V19)

In the library you will find a template you can copy to help you during programming.

Open the page with EKS2 applications in the download area at www.euchner.com and download the library for the EKS2.

5.1. Retrieving the library

Change to the *Task Card* view (shortcut: Ctrl+3) and select Libraries. Then open the context menu with a right click on the *Global libraries* area and select *Open library...*

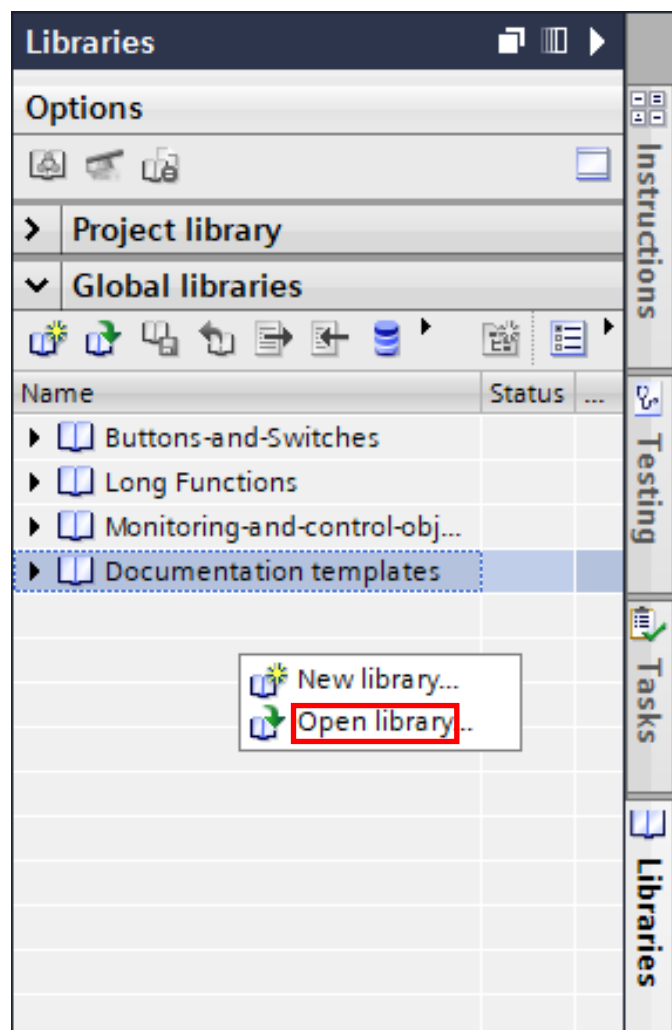


Fig. 3: Opening the library

Now select the *Compressed libraries...* file type and open the EKS2 library. The library is updated while retrieving the library using TIA Portal V20 or later because it was prepared using TIA Portal V19

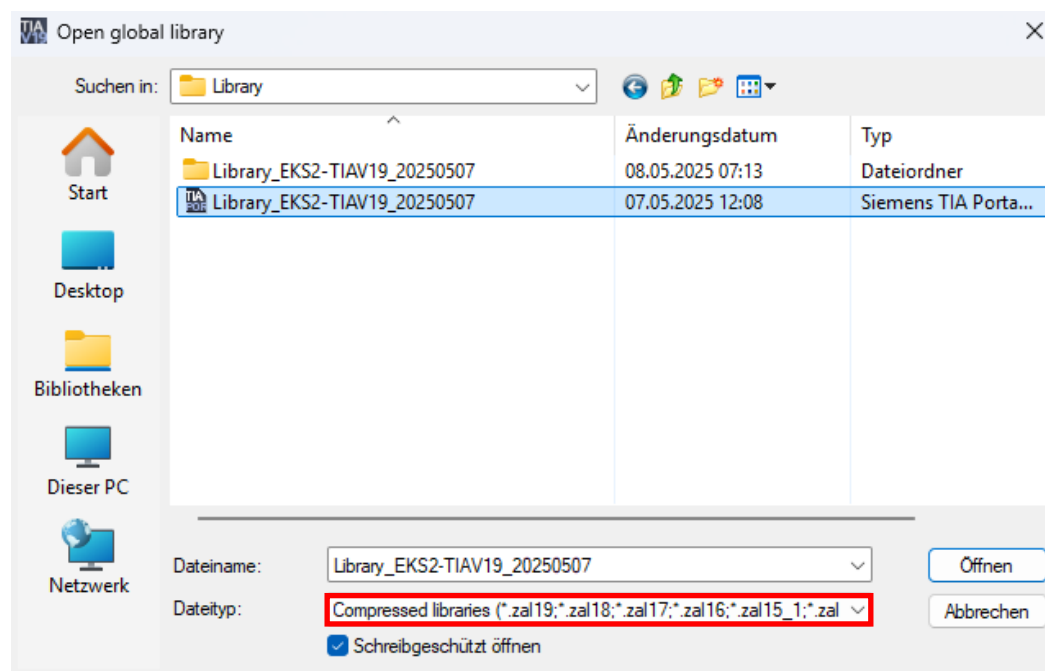


Fig. 4: Selecting the library

Using drag & drop, add the function block to *Program blocks* in the *Project tree*.

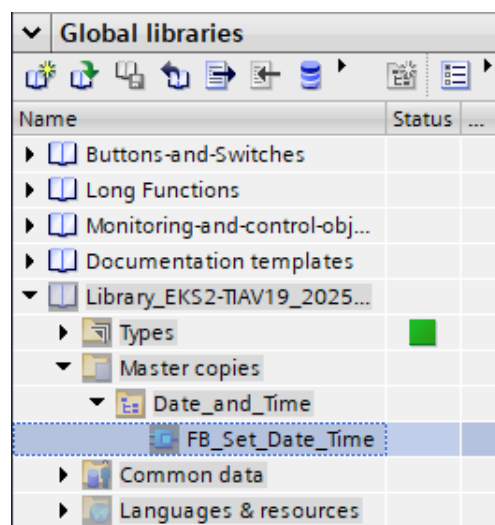


Fig. 5: Opened library

6. Setting date and time in the EKS2 evaluation unit

6.1. Parameters for the FB_Set_Date_Time block

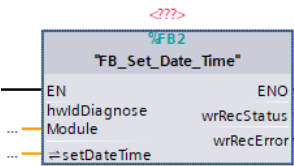
	Variable	Use	Data type	Description
	hwldDiagnoseModule	INPUT	HWIO	Hardware ID of the diagnostic module in the EKS2 evaluation unit.
	setDateTime	IN_OUT	Bool	Triggers the request to set the date and time. The variable is reset after successfully setting the date and time.
	wrRecStatus	OUTPUT	DWord	Status of the WRREC block used in the block.
	wrRecError	OUTPUT	Bool	Error bit for the WRREC block used in the block.

Table 1: Parameters for the block

6.2. Calling the FB_Set_Date_Time block

Call the *FB_Set_Date_Time* block and configure its parameters to suit your application.

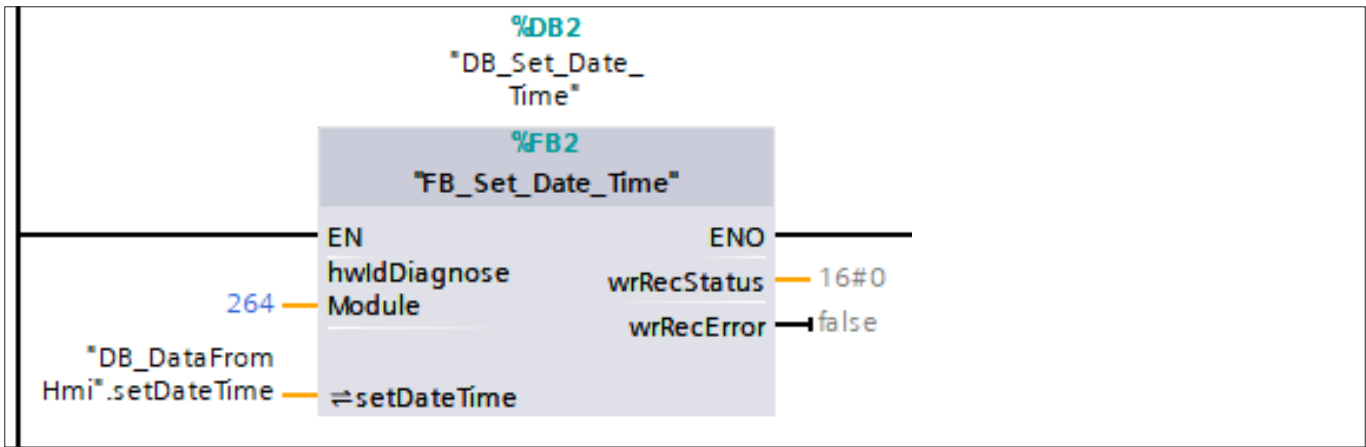


Fig. 6: Configured function block

	NOTICE The <i>setDateTime</i> input only reacts to a rising edge.
	NOTICE The date and time must be set again each time the EKS2 evaluation unit is restarted.

6.3. Checking the time set in the EKS2 evaluation unit

Open the EKS2 evaluation unit web browser via its IP address to check the time set. Go to the *LOG* menu item. The correct setting of the date and time is acknowledged using the log entry *DateTime 0x800*.

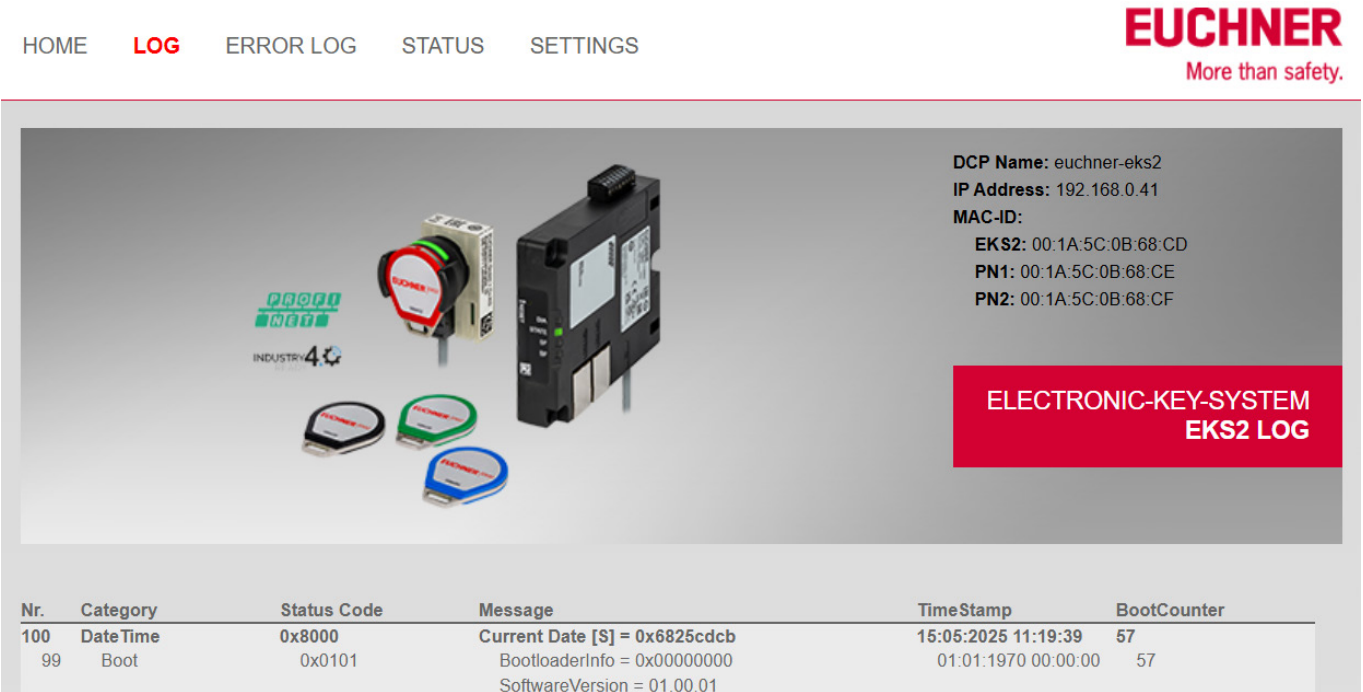


Fig. 7: EKS2 evaluation unit web browser (LOG)

You will find the current date and time in the EKS2 evaluation unit in the *STATUS* menu item.

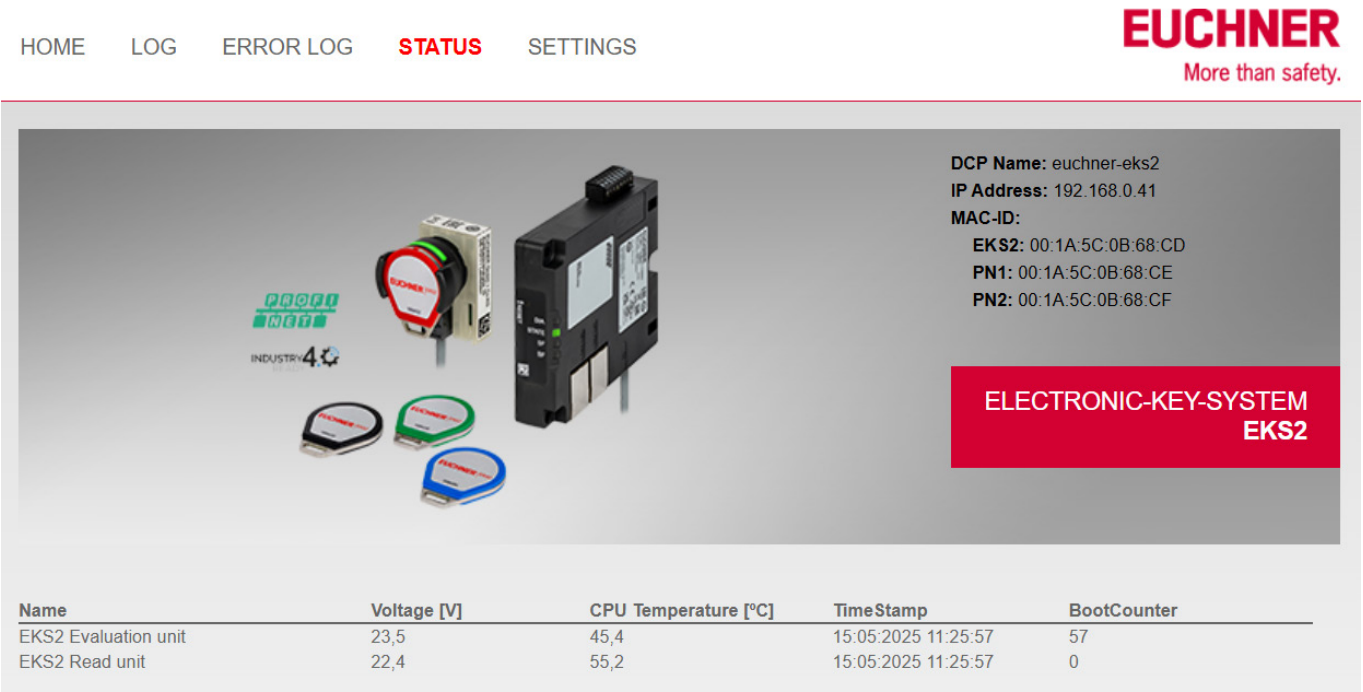


Fig. 8: EKS2 evaluation unit web browser (STATUS)

7. Important notice – please observe carefully!

This document is intended for a design engineer who possesses the requisite knowledge in safety engineering and knows the applicable standards, e.g. through training for qualification as a safety engineer. Only with the appropriate qualification is it possible to integrate the example provided into a complete safety chain.

The example represents only part of a complete safety chain and does not fulfill any safety function on its own. In order to fulfill a safety function, the energy switch-off function for the danger zone and the software must also be considered in the safety evaluation, for example.

The applications provided are only examples for solving certain safety tasks for protecting safety doors. The examples cannot be comprehensive due to the application-dependent and individual protection goals within a machine/installation.

If questions concerning this example remain open, please contact us directly.

According to the Machinery Directive 2006/42/EC, the design engineer of a machine or installation has the obligation to perform a risk assessment and take measures to reduce the risk. While doing this, the engineer must comply with the applicable national and international safety standards. Standards generally represent the current state-of-the-art. Therefore, the design engineer should continuously inform himself about changes in the standards and adapt his considerations to them. Relevant standards for functional safety include EN ISO 13849 and EN 62061. This application must be regarded only as assistance for the considerations about safety measures.

The design engineer of a machine/installation has the obligation to assess the safety engineering himself. The examples must not be used for an assessment, because only a small excerpt of a complete safety function was considered in terms of safety engineering here.

In order to be able to use the safety switch applications correctly on safety doors, it is indispensable to observe the standards EN ISO 13849-1, EN ISO 14119 and all relevant C-standards for the respective machine type. Under no circumstances does this document replace the engineer's own risk assessment, and it cannot serve as the basis for a fault assessment.

In particular in relation to a fault exclusion, it must be noted that a fault can be excluded only by the machine's or installation's design engineer and this action requires justification. A general fault exclusion is not possible. More information about fault exclusion can be found in EN ISO 13849-2.

Changes to products or within assemblies from third-party suppliers used in this example can lead to the function no longer being ensured or the safety assessment having to be adapted. In any event, the information in the operating instructions on the part of EUCHNER, as well as on the part of third-party suppliers, must be used as the basis before this application is integrated into an overall safety function. If contradictions should arise between the operating instructions and this document, please contact us directly.

Use of brand names and company names

All brand names and company names stated are the property of the related manufacturer. They are used only for the clear identification of compatible peripheral devices and operating environments in relation to our products.

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