



SEW
EURODRIVE

Revision



Decentralized Drive and Application Controller **MOVIPRO® ADC with PROFINET Interface**



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1 Revision

This revision applies to the manual "MOVIPRO® ADC with PROFINET interface", part number 19298412, edition 04/2012.

Replacements

- Chapter 1.6 "General safety notes for bus systems" is completely replaced by chapter 1.1 "Network security and access protection".
- Chapter 1.7 "Safety functions" is completely replaced by chapter 1.2 "Safety functions".
- Chapter 7.2.1 "Creating a new project" is completely replaced by chapter 1.3 "Creating a new project".
- Chapters 8.1 "Process data assignment – overview" and 8.2.1 "SEW controller module" are completely replaced by chapter 1.4 "MOVIPRO® ADC process image".
- Chapter 9.1 "Status and error messages" is completely replaced by chapter 1.5 "Status and error messages".
- Chapter 10.1 "Device replacement" is completely replaced by chapter 1.6 "Device replacement".

Supplements

Chapter 1.7 "Important notes" was added to chapter 9 "Operation".

1.1 Network security and access protection

A bus system makes it possible to adapt electronic drive technology components to the particulars of the machinery within wide limits. There is a risk that a change of parameters that cannot be detected externally may result in unexpected but not uncontrolled system behavior and may have a negative impact on operational safety, system availability, or data security.

Ensure that unauthorized access is prevented, especially with respect to Ethernet-based networked systems and engineering interfaces.

Use IT-specific safety standards to increase access protection to the ports. For a port overview, refer to the respective technical data of the device in use.

1.2 Safety functions

The may not perform any safety functions unless they are described and expressly approved.

For safety applications, ensure that the information in the following publication is observed:

- – Functional safety / PROFIsafe option S11B

In safety applications, use only components that were explicitly designed for this purpose by SEW-EURODRIVE.

1.3 Creating a new project

Proceed as follows to create a new project:

1. Start the SIMATIC Manager and create a new project.
Select your control type and add the required modules. The following modules in particular are useful:
 - **OB82 module:** This module makes sure that the controller does not trigger "STOP" in the event of so-called diagnostic alarms.
 - **OB86 module:** This module indicates the failure of a decentralized periphery.
 - **OB122 module:** This module is called if the controller cannot access data of a node of the decentralized periphery. This can occur when, for example, the MOVIPRO® unit is ready for operation later than the controller.
2. Start STEP 7 HW Config and select the PROFINET IO slot in the control rack.
3. Add a PROFINET IO system by clicking the context menu with your right mouse button.
4. Specify an IP address for the PROFINET IO controller when doing this.
5. Add a new PROFINET subsystem using the [Ethernet] button.
6. Open [PROFINET IO] / [Additional Field Devices] / [Drives] / [SEW] / [MOVIPRO] in the hardware catalog.

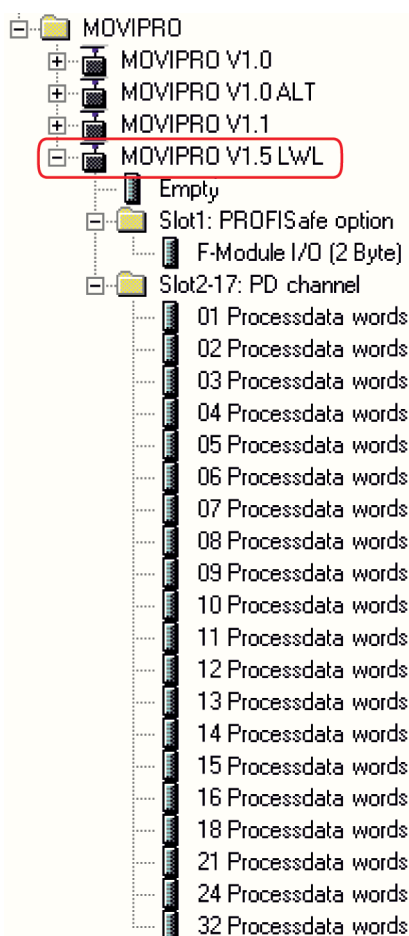
The following entries are available:

Entry	Devices
MOVIPRO V1.0	MOVIPRO® special designs (SD units)
MOVIPRO V1.0OLD	MOVIPRO® special designs (SD units) that do not support technology detection
MOVIPRO V1.1	MOVIPRO® SDC/ADC with fieldbus connection PROFINET copper (M12 or RJ45)
MOVIPRO V1.5 LWL	MOVIPRO® SDC/ADC with fieldbus connection PROFINET SCRJ (POF)

7. Move the entry matching your MOVIPRO® to the PROFINET IO system with the mouse and assign a PROFINET station name. This name must correspond to the PROFINET device name specified in the MOVIPRO® unit.

8. Enter the IO and periphery addresses in slot 2 and save the configuration.

The slot model is used for configuration with PROFINET. Each slot is assigned to a MOVIPRO® fieldbus interface. The following structure is used:



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9. Slot 1 is used for the PROFIsafe unit variant. Here, the F module is configured to switch the unit to the STO "Safe Torque Off" function via PROFIsafe. For detailed information, refer to the "MOVIPRO® ADC – Functional Safety / PROFIsafe option S11B" manual.

Slots 2 – 17 are assigned process data channels of the drive. Slot 2 is assigned 10 process data by default.

10. Add data exchange with the new devices to your user program. Process data transfer is consistent. SFC14 and SFC15 can be used to transfer process data.

1.4 MOVIPRO® ADC process sequence

The process data interface is open in MOVIPRO® ADC. As a result, you have the following options:

- Parameterize MOVIPRO® ADC with CCU application modules

The CCU application modules are commissioned and configured with the controller software Application Configurator.

- Freely program MOVIPRO® ADC with MOVI-PLC®

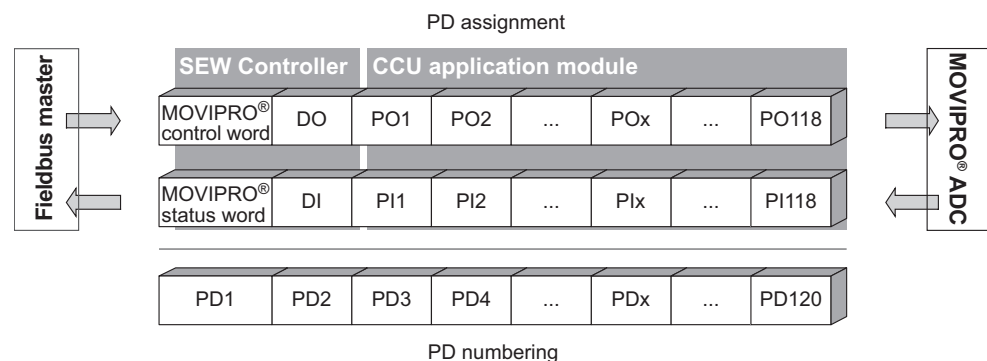
A programmer performs the programming and parameterization of the process data interface.

- In MOVIPRO® ADC, integrate all IPOS^{PLUS}® application modules that run directly on the power section "PFA-...".

A maximum of 120 process data words is permitted to be exchanged between fieldbus master and MOVIPRO® ADC. The process data assignment depends on the IEC program that is loaded, on IPOS^{PLUS}® application module, or on the configuration that is set in the Application Configurator controller software.

The process sequence of MOVIPRO® ADC is essentially divided into the following parts:

- SEW Controller (fixed):
 - MOVIPRO® control word/MOVIPRO® status word
 - Digital inputs/digital outputs (DI/DO)
- CCU application module:
 - CCU control word/CCU status word
 - CCU setpoints/CCU actual values
 - CCU application data, such as position, speed, etc.



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- IPOS^{PLUS}® application module:

In MOVIPRO® ADC, the IPOS^{PLUS}® application modules can only be used if a simple gateway program is installed (delivery state) in the communication and control unit "PFH-...", or the "Transparent 6PD" CCU application module is parameterized.

For further information, refer to chapter Process image of drive functions of the power section "PFA-...".

1.4.1 MOVIPRO® ADC control word

The MOVIPRO® ADC control word is defined as follows:

MOVIPRO® ADC control word (2 bytes)		
Bit	Meaning	Coding and function
0	Download dataset	The data on the SD memory card is downloaded to MOVIPRO® ADC. NOTE Data can only be downloaded when the power section "PFA..." (controller inhibit or activated safety function STO) is inhibited.
1	Upload dataset	The data is uploaded from MOVIPRO® ADC to the SD memory card and is saved.
2	Upload data set and auto-re-store	<ul style="list-style-type: none"> The data is uploaded from MOVIPRO® ADC to the SD memory card and is saved. In case of a device replacement, the data on the SD memory card is automatically transferred to the replacement MOVIPRO® ADC.
3 – 5	–	Reserved = 0
6	System restart	Irrespective of an error or the status of the communication and control unit "PFH-...", a 0-1-0 changeover of this bit causes a system restart.
7 – 15	–	Reserved = 0

1.4.2 MOVIPRO® ADC status word

The status word of the device contains diagnostics information of the MOVIFIT® unit that is set up for evaluation in the application of the PLC. The process data is transferred to the PLC via parameters or via the process data channel.

The MOVIPRO® ADC status word is defined as follows:

MOVIPRO® ADC status word (2 bytes)		
Bit	Meaning	Coding and function
0	Maintenance switch (mains OFF)	1 = maintenance switch has been actuated. Supply system is switched off. 0 = maintenance switch has not been actuated.
1	Toggle	The toggle bit changes between "0" and "1". The default value is 100 ms. ⚠ WARNING! Unpredictable behavior of the system in case of failure of the toggle bit (failure of edge change to materialize). The toggle bit shows the correct function of the internal communication and control unit "PFH-...". May result in death, severe injuries or damage to property. Deactivate the connected drive by disconnecting the drive controller from the supply system or activating the safety function STO on the device.
2 – 3	–	Reserved = 0
4	Dataset available	The data of the power section on the SD memory card is identical with the data on MOVIPRO® ADC.
5	Auto-restore configured	Automatic unit replacement is configured. In case of a device replacement, the data on the SD memory card is automatically transferred to the replacement MOVIPRO® ADC. For further information, refer to chapter "Device replacement" (→ 23).
6	Warning	1 = Warning present. 0 = No warning.
7	Error	1 = Error present. 0 = No error.
8 – 15	Device status/warning/error number	Bits 8 – 15 are assigned depending on the value of bits 6 and 7 (see the following table).

Bits 8 – 15 of the MOVIPRO® ADC status word are assigned as follows:

Bits 8 – 15 of the MOVIPRO® ADC status word			
Bit 6	Bit 7	Meaning	Coding and function
0	0	Unit status	0 = System start-up
			1 = Ready
			9 = Data management using the MOVITOOLS® MotionStudio engineering software User-controlled data management via MOVITOOLS® MotionStudio is active.
			10 = Data management via process data (field-bus) The data set is uploaded user-controlled from the device to the SD memory card using process data.
			11 = Data management via process data (field-bus) The data set upload from the device to the SD memory card is complete. If the request is revoked the device status is reset to the value before the request.
			12 = Data management via process data (field-bus) The data set is downloaded user-controlled from the SD memory card to the device using process data.
			13 = Data management via process data (field-bus) Data set download from SD memory card to device is complete.
			14 = Data management via process data (field-bus) Data management via process data has been requested. As the function is not enabled in MOVITOOLS® MotionStudio (plug-in "data management") the data set is not uploaded from the device to the SD memory card. If the request is revoked the device status is reset to the value before the request.
			15 = Data management "auto reload" The auto reload function is executed. After a device is replaced, the data set from the SD memory card is automatically downloaded to the device.

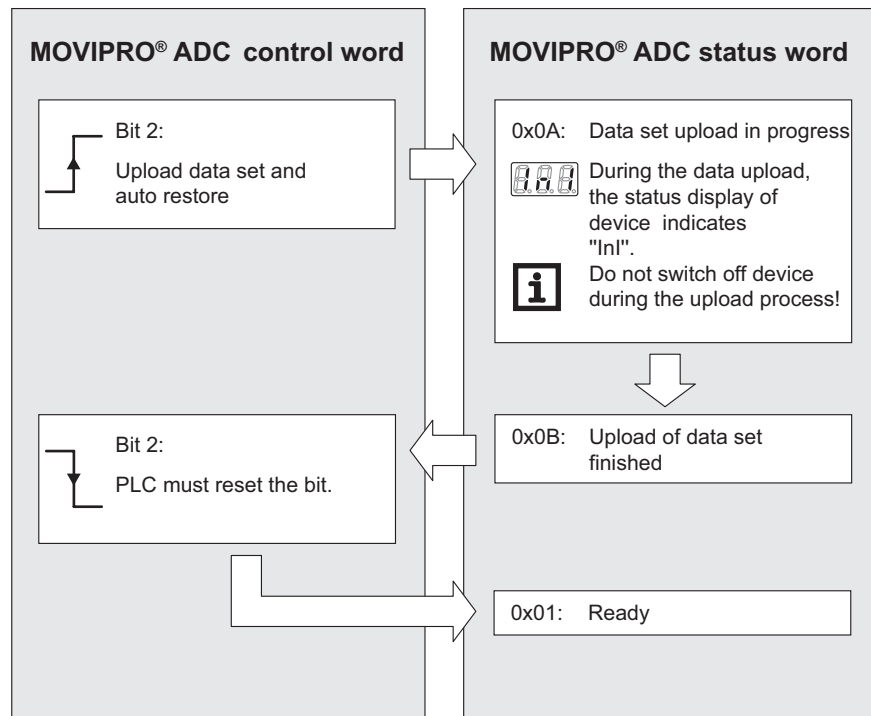
Bits 8 – 15 of the MOVIPRO® ADC status word			
Bit 6	Bit 7	Meaning	Coding and function
1	0	Warning Note: The warning is displayed but the device can still be used.	20 = SF20 warning data management Possible cause: The SD memory card was removed during ongoing operation and plugged back in. The data set upload from the device to the SD memory card failed. No new data backup has been created on the SD memory card.
			21 = SF21 warning data management Possible cause: Write protection on the SD memory card is activated. The data set upload from the device to the SD memory card failed. No new data backup has been created on the SD memory card.
			22 = SF22 warning data management Data set download from SD memory card to device has failed.
			23 = SF23 warning data management Data set download from SD memory card to device has failed.

Bits 8 – 15 of the MOVIPRO® ADC status word			
Bit 6	Bit 7	Meaning	Coding and function
0	1	Error number Note: The error is displayed and the drive is inhibited.	1 = SF1 configuration No connection to power section "PFA-...".
			2 = SF2 error external I/O
			3 = SF3 configuration No IPOS ^{PLUS} ® application module available, or IPOS ^{PLUS} ® application module not enabled.
			4 = SF4 process data stopped to lower-level devices (gateway).
			10 = SF10 configuration No configuration available.
			11 = SF11 configuration Unable to establish connection with configured devices.
			20 = Data backup Upload failed.
			21 = Data backup Upload failed because SD memory card is write-protected.
			22 = Data backup Download failed.
			23 = Data backup STO safety function required.
			99 = Internal system error
			110 = SF110 overload actuator voltage DO00
			120 = SF120 overload sensor voltage group 1
			121 = SF121 overload sensor voltage group 2

1.4.3 Data backup via PLC process data specification

The backup of device data can be controlled by the PLC via process data. Prerequisite for this is that you have enabled the data management functions in the data management tool of the engineering software MOVITOOLS® MotionStudio.

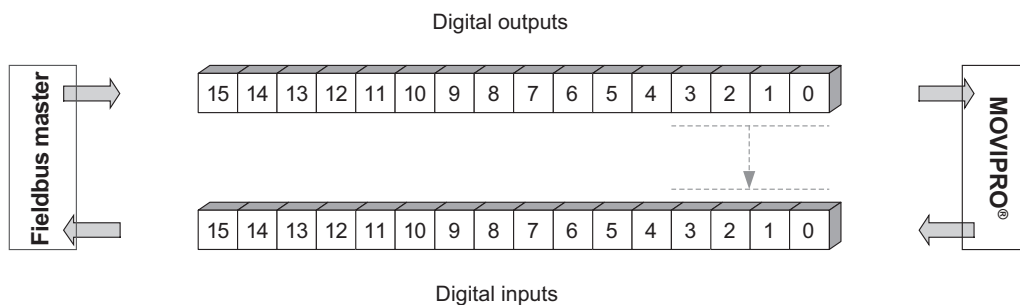
The following figure shows the process of data backup via a PLC process data specification:



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1.4.4 Digital inputs and outputs

The input/output bytes of the device for 12DI/4DIO (digital inputs/digital outputs) are defined as follows:



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Digital inputs (DI)

Digital inputs (2 bytes)	
Bit	Meaning
0	Digital input DI00 / status digital output DO00
1	Digital input DI01 / status digital output DO01
2	Digital input DI02 / status digital output DO02
3	Digital input DI03 / status digital output DO03
4	Digital input DI04
5	Digital input DI05
6	Digital input DI06
7	Digital input DI07
8	Digital input DI08
9	Digital input DI09
10	Digital input DI10
11	Digital input DI11
12	Digital input DI12
13	Digital input DI13
14	Digital input DI14
15	Digital input DI15

Digital outputs (DO)

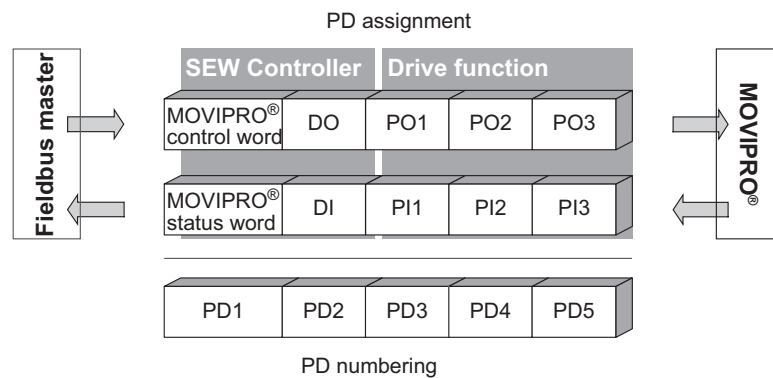
Digital outputs (1 byte)	
Bit	Meaning
0	Digital output DO 00
1	Digital output DO 01
2	Digital output DO 02
3	Digital output DO 03
4 – 15	Reserved = 0

1.4.5 Example: Delivery status

A simple gateway program which supports 6 process data for the power section "PFA-..." is already preinstalled (delivery state) in the communication and control unit "PFH-..." of MOVIPRO® ADC. This allows the drive function of the power section to be used quickly and easily without additional parameterizations having to be made with the controller software Application Configurator.

The functionality of MOVIPRO® ADC is comparable with a MOVIPRO® SDC in this case. You only have to parameterize the drive functions of the power section to match your requirements. For further information, refer to chapter Process image of drive functions of the power section "PFA-..."

In the delivery state, or if no IPOS^{PLUS}® application module is loaded, the device contains the process data words of the speed-controlled drive. In the case of the speed-controlled drive, the device is addressed with 3 process data words.



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1.5 Status and error messages

The status display on the device cover shows the current device status. In case of repeated malfunctions, contact the SEW-EURODRIVE Service.

If several statuses or faults are active at the same time, the status display shows the status or fault with the highest priority.

The device status display takes priority over the display of the internal "PFA-..." power section. If the maintenance switch is switched off or a fieldbus fault occurs, no power section status is displayed.

1.5.1 Display examples

The following examples show how the device usually displays status and fault messages.

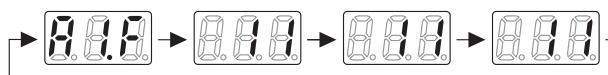
Example 1: "Enable" of power section 1



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Example 2: "Overtemperature" fault of power section 1

If the display shows "A[Power section number].F", a power section fault occurred. The display switches between the number of the power section and the fault code.



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Refer to chapter List of power section faults for an overview of power section faults.

1.5.2 Status messages

If the transition function of the status display is disabled using the processing unit, the bus is no longer monitored. If an error occurs in this case, the status display may still display the last status before occurrence of the error. This is why you should only switch off the monitoring function in exceptional cases, and inform the respective personnel accordingly.

If you use a parameterizable device, the following status messages are possible.

Code	Meaning	Measure
A1.0	DC 24 V operation, frequency inverter not ready	
A1.1	Controller inhibit active	
A1.2	No enable	
A1.3	Standstill current	
A1.4	Approval	
A1.5	n-control (speed control)	
A1.6	M-control (torque control)	
A1.7	Hold control	
A1.8	Factory setting	

Code	Meaning	Measure
A1.9	Limit switch hit	
A1.A	Technology option	
A1.c	Reference travel IPOS ^{plus} ®	
A1.D	Flying start	
A1.E	Encoder calibration	
A1.F	Error info	
A1.U	<p>"Safe Torque Off" active</p> <p>⚠ WARNING!</p> <p>Risk of injury due to incorrectly interpreted display U = "Safe Torque Off" active – Severe or fatal injuries. The display U = "Safe Torque Off" active is not safety-related. Thus it must not be used safety-related.</p>	
Flashing dot	Application module of the "PFA-..." power section is running.	
888 S2: Flashing green S3: Off	<ul style="list-style-type: none"> No application module loaded 	<ul style="list-style-type: none"> Create a configuration with the Application Configurator and load the application into the device.
BUS ERR	<p>Fault</p> <ul style="list-style-type: none"> Fault in fieldbus parameters or fieldbus stations incorrectly set 	<ul style="list-style-type: none"> Check the fieldbus wiring to the higher-level controller. Check the fieldbus parameter setting of the device and the higher-level controller.
INI	<p>Status</p> <ul style="list-style-type: none"> Initialization: A connection is established to all internal components. <p>This can take several minutes after a device replacement.</p>	<ul style="list-style-type: none"> Wait several minutes.
OFF	<p>Status</p> <ul style="list-style-type: none"> The maintenance switch is switched off. 	<ul style="list-style-type: none"> Switch on the maintenance switch. <p>Devices without power interface:</p> <p>Check the DC 24 V cabling and the cabling of the switch feedback.</p>

Code	Meaning	Measure
OFL	Status <ul style="list-style-type: none"> Internal communication error 	While backing up data or restoring a data backup: Wait a few minutes until the display changes. In normal operation: <ul style="list-style-type: none"> Disconnect the device from the AC 400 V supply and the DC 24 V supply voltage for at least 30 s. Restart the device.
RUN	Status <ul style="list-style-type: none"> Connection was successfully established. After 3 seconds, the component or application status is shown. 	
SF1	Fault Communication error with the power section, caused by e.g.: <ul style="list-style-type: none"> Parameter channel 2 not activated (<i>P889</i>) Manual operation not finished Parameter lock power section activated (<i>P803</i>) Configuration in the Application Configurator not completed or not completely loaded 	<ul style="list-style-type: none"> Activate parameter channel 2. Activate manual operation. Deactivate it afterwards. Deactivate the parameter lock. Create a configuration with the Application Configurator and load the application into the device. Other possible measures: <ul style="list-style-type: none"> Disconnect the device from the AC 400 V supply and the DC 24 V supply voltage for at least 30 s. Restart the device.
SF2	Fault <ul style="list-style-type: none"> Error in external periphery 	<ul style="list-style-type: none"> Check the cabling of the digital inputs and outputs as well as the connections of the communication package.
SF3	Fault <ul style="list-style-type: none"> Non-enabled application module loaded 	<ul style="list-style-type: none"> Load an enabled application module into the "PFA-..." power section If you do not use an application module, set parameter P802 "Factory setting" of the "PFA-..." power section to "Delivery state". NOTICE! The device has to be started up again.

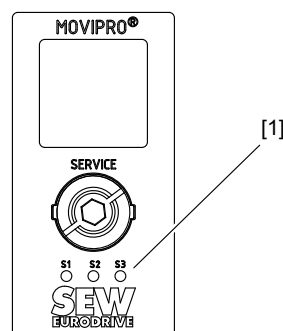
Code	Meaning	Measure
SF10	Fault <ul style="list-style-type: none"> Configuration with Application Configurator not completed. 	<ul style="list-style-type: none"> Complete the configuration with the Application Configurator. Load it into the device.
SF20	Warning <ul style="list-style-type: none"> Error during data management, data backup on SD memory card failed 	<ul style="list-style-type: none"> Start the data management again.
SF21	Warning <ul style="list-style-type: none"> Error during data management, data backup on SD memory card failed, SD memory card may be write protected. 	<ul style="list-style-type: none"> Switch off the device. Remove write protection from SD memory card. Switch on the device again.
SF22	Warning <ul style="list-style-type: none"> Error during data management, data recovery to device failed 	<ul style="list-style-type: none"> Start the data management again.
SF23	Warning <ul style="list-style-type: none"> Error during data recovery to device, controller inhibit not set 	Set the device to one of the following states: <ul style="list-style-type: none"> Controller inhibit (A1.1) Safe Torque Off (A1.U)
SF24	Fault <ul style="list-style-type: none"> Corrupt data backup detected 	<ul style="list-style-type: none"> Perform the data backup again.
SF25	Fault <ul style="list-style-type: none"> Corrupt data backup detected 	<ul style="list-style-type: none"> Perform the data backup again.
SF99	<ul style="list-style-type: none"> Internal system error 	
SF110	Fault <ul style="list-style-type: none"> Actuator voltage overload error 	<ul style="list-style-type: none"> Check the cabling of the digital inputs and outputs.
SF120	Fault <ul style="list-style-type: none"> Error due to overload in sensor voltage of group 1 	<ul style="list-style-type: none"> Check the cabling of the digital inputs and outputs.
SF121	Fault <ul style="list-style-type: none"> Error due to overload in sensor voltage of group 2 	<ul style="list-style-type: none"> Check the cabling of the digital inputs and outputs.
SF130	Fault <ul style="list-style-type: none"> SNI fuse tripped 	<ul style="list-style-type: none"> Check the SNI fuse.
SF 881	<ul style="list-style-type: none"> The SD memory card is not inserted. The data system of the SD memory card is corrupt. Boot process has failed. 	<ul style="list-style-type: none"> Switch the device off and back on again. If the system fault is displayed repeatedly, contact SEW-EURODRIVE Service.

Code	Meaning	Measure
SF 888	<ul style="list-style-type: none"> The device cannot boot after switch-on. The communication and control unit has a serious error. 	<ul style="list-style-type: none"> Please contact the SEW-EURODRIVE service.
NO_ → CNF S2 : Flashing green S3 : Lights up green	<ul style="list-style-type: none"> No application module is loaded. 	<ul style="list-style-type: none"> Load your application module into the device.
SEW	<ul style="list-style-type: none"> DC 24 V voltage supply is present. The user program starts. This process can take up to 30 seconds. No user program has been loaded or started. 	<ul style="list-style-type: none"> If the status message is shown for more than 30 s, load the user program into the device.
BtL	<ul style="list-style-type: none"> The bootloader update is being executed. 	<ul style="list-style-type: none"> Do not switch off the device. Wait until the bootloader update has been completed. If the device does not respond as expected after 5 minutes, proceed as described in chapter "SD memory card as spare part" (→ 25). If the error occurs again, replace the device or contact SEW-EURODRIVE Service.
DAT	<p>Status</p> <p>Data management active, triggered by e.g.:</p> <ul style="list-style-type: none"> Data is loaded to the SD memory card or into the device. Previous device replacement Automatic upload of the power section data Data management started via fieldbus Data management started via MOVITOOLS® MotionStudio 	<ul style="list-style-type: none"> Wait until data backup and restore has been completed.
Data	<ul style="list-style-type: none"> Data backup is created. Data is restored from a data backup. 	<ul style="list-style-type: none"> Wait until data backup and restore has been completed.

Code	Meaning	Measure
.....	<ul style="list-style-type: none"> The user program has not updated the values of the status display within 3 s. An error has occurred in the user program, the device or the internal system bus. 	<ul style="list-style-type: none"> Restart the device. Check whether the device starts correctly. If the device does not start, reload the user program into the device. If the status message is displayed repeatedly, contact SEW-EURODRIVE Service.

Status LEDs

The status LEDs are located on the service unit. They show the fieldbus and device status.



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[1] Status LEDs S1, S2, S3

Status LED S1 PROFINET IO

Status LED	Possible cause	Measure
Off	<ul style="list-style-type: none"> PROFINET IO device is currently exchanging data with the PROFINET IO controller (Data Exchange). 	-
Flashing green Flashing green/red	<ul style="list-style-type: none"> The flashing function in the PROFINET IO controller configuration is activated to visually locate the stations. 	-
Lights up red	<ul style="list-style-type: none"> Connection to the PROFINET IO controller has failed. PROFINET IO device does not detect a link. Bus interruption PROFINET IO controller is not in operation. 	<ul style="list-style-type: none"> Check the PROFINET connection of the device. Check the PROFINET IO controller. Check the cabling of your PROFINET network.
Flashing yellow Lights up yellow	<ul style="list-style-type: none"> The STEP 7 hardware configuration contains a module that is not permitted. 	<ul style="list-style-type: none"> Set the STEP 7 hardware configuration to ONLINE. Analyze the component status of the slots in the PROFINET IO device.

Status LED S2

Status LED	Possible cause	Measure
Flashing green	The firmware of the communication and control unit is running correctly.	–
Flashing green/orange	Data backup is created/restored.	–
Lights up orange	Boot is active.	–
Flashing orange	<ul style="list-style-type: none"> Firmware is being updated or Bootloader update required. 	–
Flashes red	<ul style="list-style-type: none"> SD memory card is not inserted. File system on the SD memory card is corrupt. Boot process has failed. 	Switch the device off and back on again. Contact SEW-EURODRIVE service if the error reoccurs.

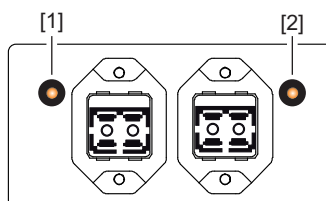
Status LED S3

Status LED	Possible cause	Measure
Lit green	User program is running.	–
Flashing green	<ul style="list-style-type: none"> Program sequence has stopped. Bootloader update required. 	Start the user program.
Off	No program is loaded.	Load an user program into the communication and control unit.

Status LEDs FO1 and FO2 Ethernet connection push-pull SCRJ

The two LEDs "FO1" and "FO2" indicate the signal quality of the respective optical transmission path.

The LEDs are on the left and the right of both Ethernet fieldbus ports push-pull SCRJ:



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- [1] FO1
[2] FO2

Status LED	Possible cause	Measure
Off	The signal level is 2 dB or more. The signal quality is good.	–

Status LED	Possible cause	Measure
Lights up red	<p>The optical signal level has fallen below 2 dB.</p> <p>This can have the following reasons:</p> <ul style="list-style-type: none">• Aging effect of the polymer fiber• The plug connector is not properly connected.• The externally connected cable is faulty or damaged.	<ul style="list-style-type: none">• Check whether the plug connector is inserted correctly.• Check the damping of the externally connected cable.

1.6 Device replacement

The device allows for a quick device replacement. It is equipped with a replaceable SD memory card on which all device data is stored. If the device has to be replaced, the plant can be started up again quickly by simply exchanging the SD memory card.

1.6.1 Prerequisites for successful device replacement

Observe the following:

- The devices that you want to exchange must be identical. If the devices have different configurations, a successful device replacement cannot be guaranteed.
- You must save the data of the device to be replaced on the SD memory card **before** you replace the device. SEW-EURODRIVE recommends to always backup the data right after starting up a device.
- Insert or remove the SD memory card only when the device is switched off.
- With programmable devices, note that the status display depends on programming. The module for the data backup function (data management) must be integrated in the program.

1.6.2 Replacing the device

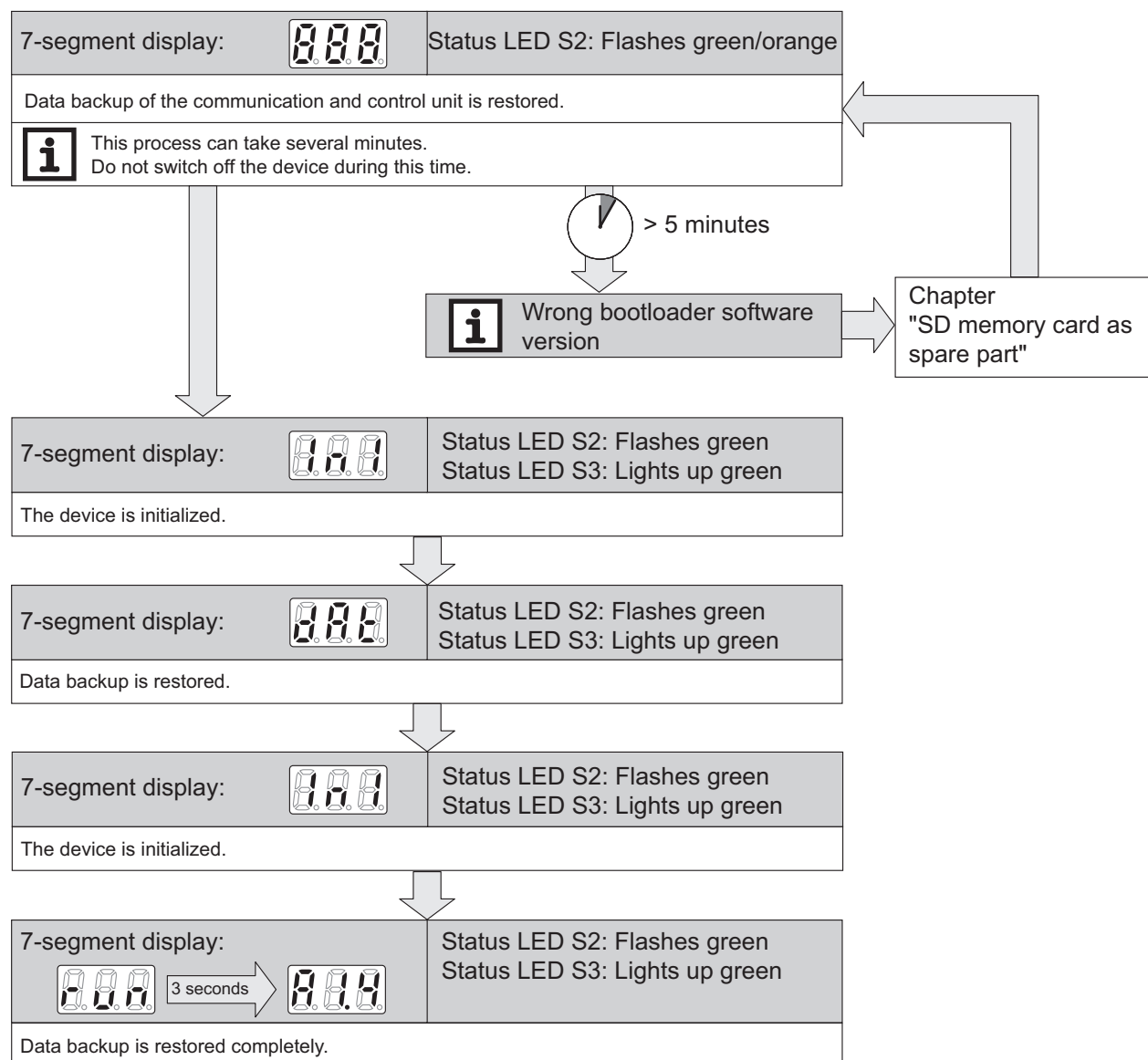
Proceed as follows:

1. Perform a data backup via MOVITOOLS® MotionStudio if you are not certain whether the current device parameterization is stored on the SD memory card.
2. Disconnect the device from the supply system.
3. Remove it from the system.
4. Remove the memory card cover from the housing cover.
5. To do so, remove the SD memory card from the device to be replaced.
6. Insert the SD memory card into the new device.
7. Install the new device in the plant. Connect it to the supply system.
8. Switch on the new device.

INFORMATION



The device performs several initialization steps. Do not switch off the device during this time.



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- The parameters saved on the SD memory card are now available again. If a different parameter set is needed for the new device, change the parameter set now. Back up the changed data on the SD memory card again after startup.
- For applications with encoders, observe the chapter Reference travel after device or encoder replacement.

1.6.3 SD memory card as spare part

If you have ordered an SD card as spare part, it is possible that the versions of the bootloader software are different for the SD memory card and your device.

In this case, the device remains in the following state **for more than 5 minutes**:

7-segment display	Status LED S2
8.8.8 flashing	Flashing green/orange

Proceed as follows:

1. Disconnect the device from the supply system.
2. Unscrew the memory card cover.
3. Remove the SD memory card.
4. Connect an SD card reader to your PC.
5. Insert the SD memory card in the SD card reader. On your PC, go to [Computer] > [SD] > [System] > "BootConfig.cfg".
6. Open the file "BootConfig.cfg" with a text editor.
7. Search the file for the following expression:

```
<!-- Confirm bootloader update with reset button? -->  
<ConfirmBlUpdateWithResetBtn>true</ConfirmBlUpdateWithReset-  
Btn>
```
8. Change the value "true" to the value "false" for the parameter.
The expression must now be:

```
<ConfirmBlUpdateWithResetBtn>>false</ConfirmBlUpdateWithReset-  
Btn>
```
9. Save the file.
10. In the status bar, click [Safely remove hardware]. As soon as the PC confirms this, you can remove the SD memory card from the SD card reader.
11. Insert the SD memory card into the slot of the device and screw the memory card cover back on.
12. Connect the device to the supply system.
13. Observe the instructions in chapter Device replacement from step 8 onwards.

1.7 Important Information



⚠ WARNING

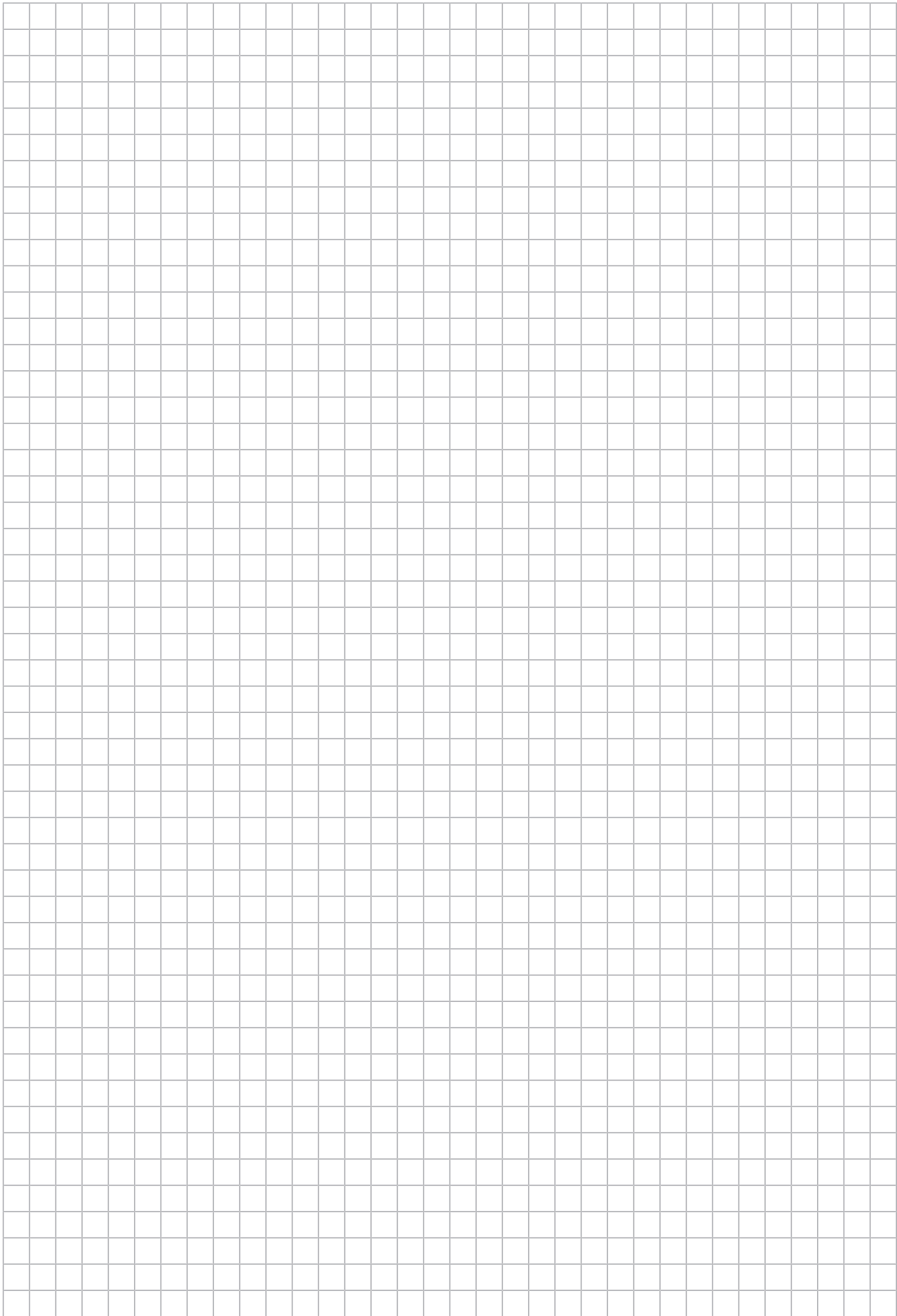
Risk of crushing if the drive keeps running unintentionally.

The internal bus timeout mechanism of the power section has been implemented on telegram level. All telegram types cause a restart of the timeout mechanism. This includes, for example, read or write parameter adjustment services that are used by the following devices/applications:

- MOVITOOLS® MotionStudio
 - Visualization software
 - Control and diagnostics devices
 - Control and diagnostics software
 - In MOVITOOLS® MotionStudio in the parameter tree "Program execution = stop"
 - In the PLC Editor [Online] > [Stop]
 - STO safety function
 - Controller inhibit
 - No enable
-













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SEW
EURODRIVE

SEW-EURODRIVE GmbH & Co KG
Ernst-Blickle-Str. 42
76646 BRUCHSAL
GERMANY
Tel. +49 7251 75-0
Fax +49 7251 75-1970
sew@sew-eurodrive.com
→ www.sew-eurodrive.com