



SEW
EURODRIVE



MOVIFIT[®] SC/FC with SBus Slave

Edition 12/2007

11708611 / EN

Addendum to the Operating Instructions







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1 General Information

1.1 Structure of the safety notes

The safety notes in these operating instructions are structured as follows:

| Symbol |  SIGNAL WORD |
|---|--|
|  | <p>Nature and source of hazard.</p> <p>Possible consequence(s) if disregarded.</p> <ul style="list-style-type: none"> • Measure(s) to avoid the hazard. |

| Symbol | Signal word | Meaning | Consequences if disregarded |
|--|---|---|---|
| Example: |  HAZARD! | Imminent hazard | Severe or fatal injuries |
|  General hazard |  WARNING | Possible hazardous situation | Severe or fatal injuries |
|  Specific hazard, e.g. electric shock |  CAUTION! | Possible hazardous situation | Minor injuries |
|  | STOP! | Possible damage to property | Damage to the drive system or its environment |
|  | NOTE | Useful information or tip Simplifies drive system handling | |

1.2 Rights to claim under limited warranty

Adhering to the operating instructions is a prerequisite for fault-free operation and the fulfillment of any right to claim under warranty. Read the operating instructions before you start working with the unit.

Make sure that the operating instructions are legible and available to persons responsible for the plant and its operation, as well as to persons who work independently on the unit.

1.3 Exclusion of liability

You must comply with the information contained in these operating instructions to ensure safe operation of MOVIFIT® SC or FC and to achieve the specified product and performance features. SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of these operating instructions. In such cases, any liability for defects is excluded.



1.4 Other applicable documentation

- This information does not replace the detailed operating instructions!
- Only electrical specialists are allowed to perform installation and startup observing the applicable accident prevention regulations and the MOVIFIT® SC or FC operating instructions and the MOVIFIT® Function Level "Technology" manual.



Unit Design

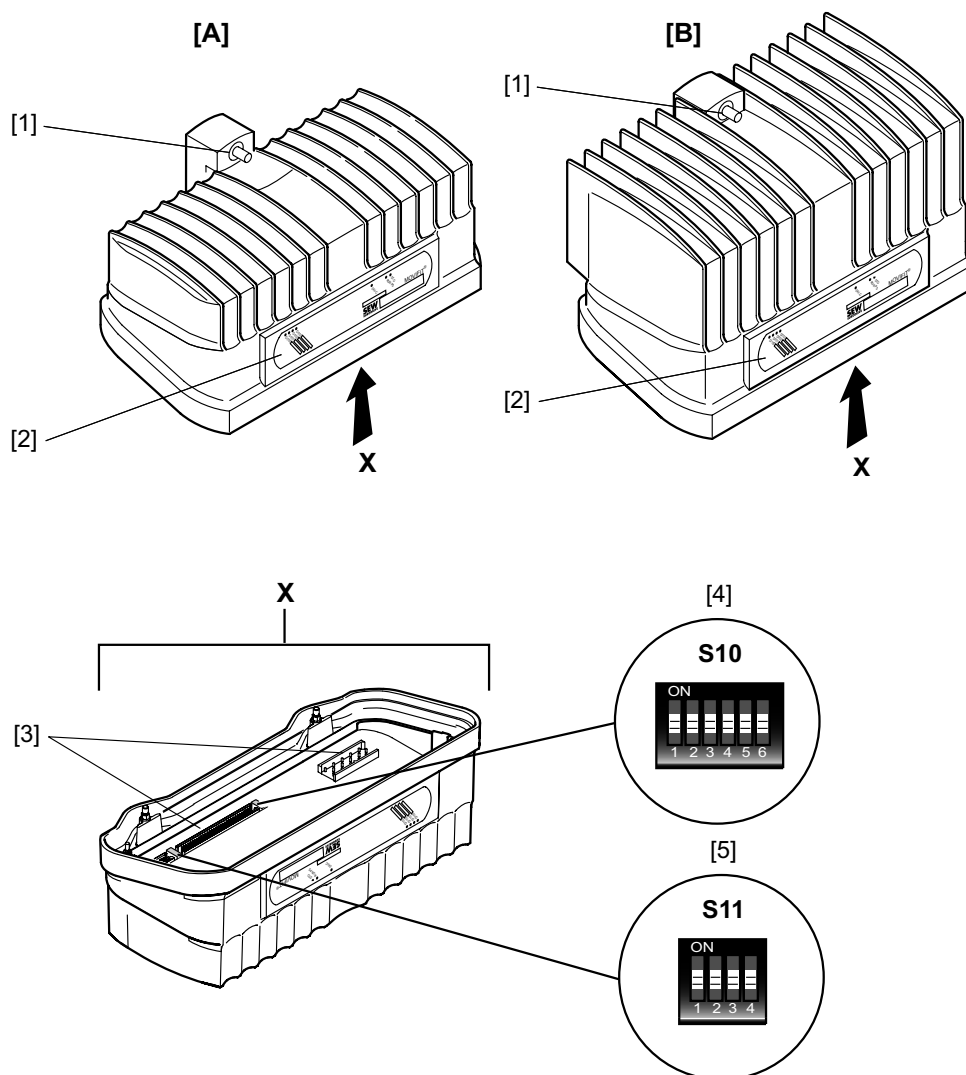
EBOX (active electronics unit) as "SBus Slave" version

2 Unit Design

2.1 EBOX (active electronics unit) as "SBus Slave" version

The MOVIFIT® SC/FC EBOX as SBus slave version is a closed electronics unit with 4 digital inputs and integrated motor switch or frequency inverter **without** fieldbus interface:

EBOX "MTF...-...-Z10A-00" / "MTS...-...-Z10A-00" (SBus-Slave)



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- [A] Size 1: MOVIFIT® SC and MOVIFIT® FC 0.37 to 1.5 kW
- [B] Size 2: MOVIFIT® FC 2.2 to 4 kW
- [1] Central opening/closing mechanism
- [2] Operation LEDs for digital inputs (can be labeled) and unit status
- [3] Connection to connection box
- [4] DIP switch S10 for unit functions
- [5] DIP switch S11 for SBus slave address



2.2 Unit designation

Example EBOX-nameplate

MT F 11 A 015- 50 3 - Z1 0 A - 00

EBOX version
MOVIFIT® SC (MTS)

00 = Series

A = Version

Function level

0 = without

Communication

Z1 = SBus slave

Connection type

3 = 3-phase

Supply voltage

50 = AC 380...500 V

Unit power
MOVIFIT® SC (MTS)

015 = 1.5 kW
040 = 4.0 kW

Version A

Series

11 = Standard
12 = Hygienic^{plus}

Unit type

S = MOVIFIT® SC (motor starter)
F = MOVIFIT® FC (frequency inverter)

MT = MOVIFIT® series

EBOX version
MOVIFIT® FC (MTF)

00 = DT/DV motors
+ DZ motors

01 = DT/DV motors
+ DAS motors

Unit power
MOVIFIT® FC (MTF)

003 = 0.37 kW
005 = 0.55 kW
007 = 0.75 kW
011 = 1.1 kW
015 = 1.5 kW
022 = 2.2 kW
030 = 3.0 kW
040 = 4.0 kW



3 Electrical Installation



NOTE

This section describes the connection assignment of MOVIFIT® SC or FC in conjunction with the "SBus slave" version.

It is essential that you observe the MOVIFIT® SC or FC operating instructions, in particular the safety and warning notes.

3.1 ABOX with terminals and cable glands "MTA...-S02.-...-00"

3.1.1 Mains terminal X1

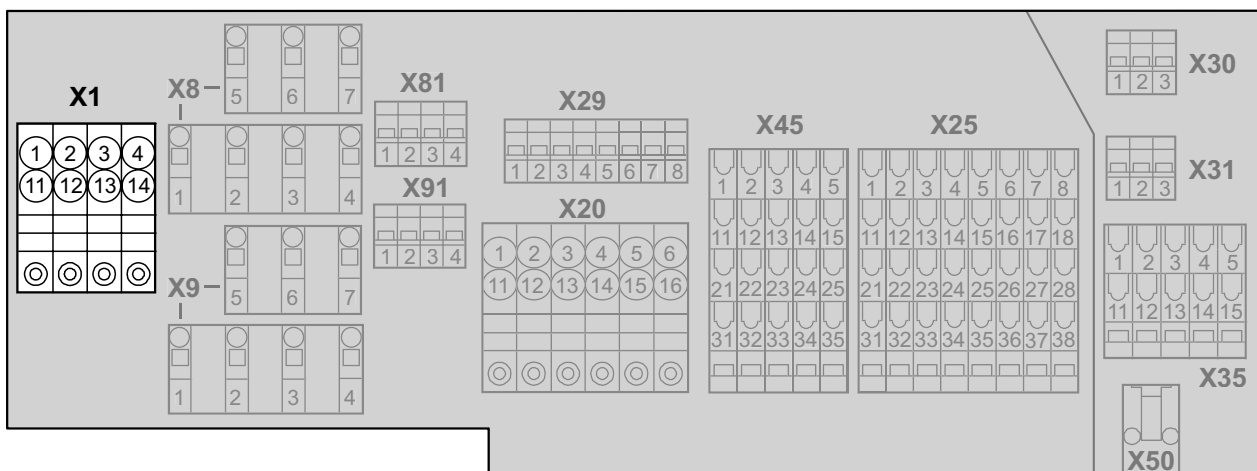


HAZARD!

The maintenance switch only disconnects the integrated frequency inverter/motor switch from the mains. Voltage is still present on the terminals of the MOVIFIT® unit.

Severe or fatal injuries from electric shock.

- Switch off the power to the MOVIFIT® using a suitable external disconnecting device, and wait at least 1 minute before opening the wiring space.

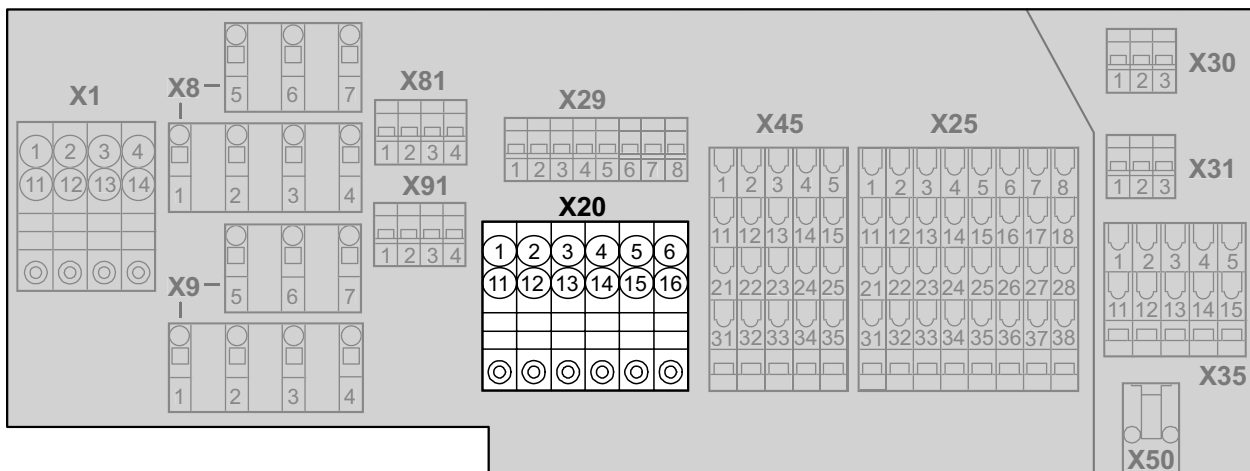


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| Mains terminal (power bus) | | | |
|----------------------------|----|------|--|
| No. | | Name | Function |
| X1 | 1 | PE | Power supply connection PE (IN) |
| | 2 | L1 | Power supply connection phase L1 (IN) |
| | 3 | L2 | Power supply connection phase L2 (IN) |
| | 4 | L3 | Power supply connection phase L3 (IN) |
| | 11 | PE | Power supply connection PE (OUT) |
| | 12 | L1 | Power supply connection phase L1 (OUT) |
| | 13 | L2 | Power supply connection phase L2 (OUT) |
| | 14 | L3 | Power supply connection phase L3 (OUT) |



3.1.2 24 V supply terminal



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| 24 V supply terminal (24 V power bus) | | | |
|---------------------------------------|----|----------|---|
| No. | | Name | Function |
| X20 | 1 | FE | Functional ground (IN) |
| | 2 | +24V_C | +24V continuous voltage supply (IN) |
| | 3 | 0V24_C | 0V24 reference potential – continuous voltage (IN) |
| | 4 | reserved | reserved |
| | 5 | reserved | reserved |
| | 6 | reserved | reserved |
| | 11 | FE | Functional ground (OUT) |
| | 12 | +24V_C | +24V continuous voltage supply (OUT) |
| | 13 | 0V24_C | 0V24 reference potential – continuous voltage (OUT) |
| | 14 | reserved | reserved |
| | 15 | reserved | reserved |
| | 16 | reserved | reserved |



NOTE

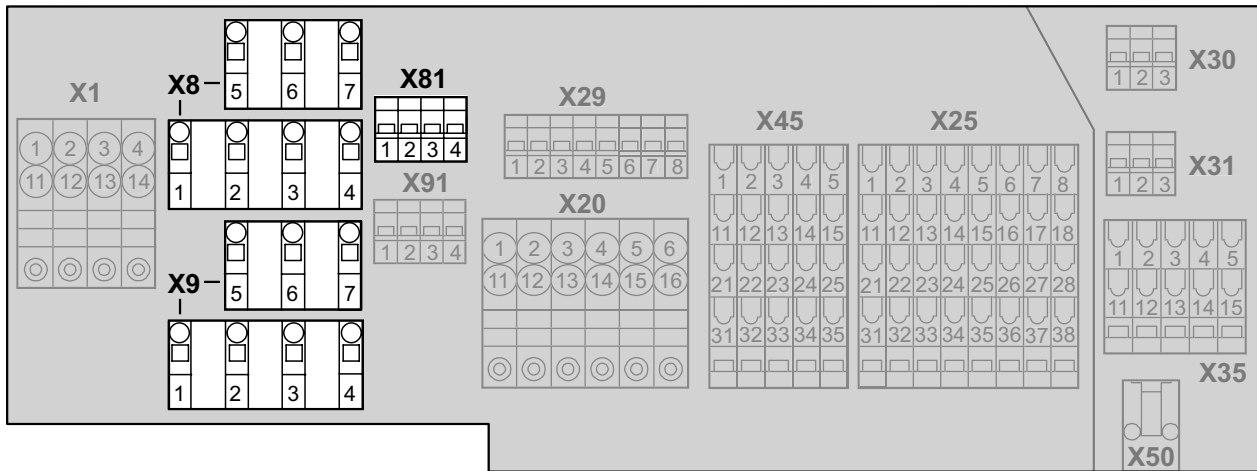
With the "SBus slave" version, the continuous voltage 24V_C can alternatively be connected to X20 or X35 and can be looped.
However it may not be fed at X20 and looped from X35 or vice versa.



Electrical Installation

ABOX with terminals and cable glands "MTA...-S02.-...-00"

3.1.3 Motor connection terminal in conjunction with MOVIFIT® FC



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| Motor connection terminal (connection via hybrid cable) | | | |
|---|---|--------|--|
| No. | | Name | Function |
| X8 | 1 | PE | PE connection motor |
| | 2 | U | Motor phase U output |
| | 3 | V | Motor phase V output |
| | 4 | W | Motor phase W output |
| | 5 | 15 | Connection for SEW brake terminal 15 (blue) |
| | 6 | 14 | Connection for SEW brake terminal 14 (white) |
| | 7 | 13 | Connection for SEW brake terminal 13 (red) |
| X81 | 1 | TF+ | Connection for temperature sensor TF/TH (+) motor |
| | 2 | TF- | Connection for temperature sensor TF/TH (-) motor |
| | 3 | DB00 | Binary output "Brake released" = factory setting (control signal 24 V) |
| | 4 | 0V24_C | 0V24 reference potential for brake output |
| X9 | 1 | PE | PE connection |
| | 2 | – | reserved |
| | 3 | – | reserved |
| | 4 | – | reserved |
| | 5 | -R | Braking resistor connection "-R" |
| | 6 | – | reserved |
| | 7 | +R | Braking resistor connection "+R" |
| X91 | 1 | – | reserved |
| | 2 | – | reserved |
| | 3 | – | reserved |
| | 4 | – | reserved |



HAZARD!

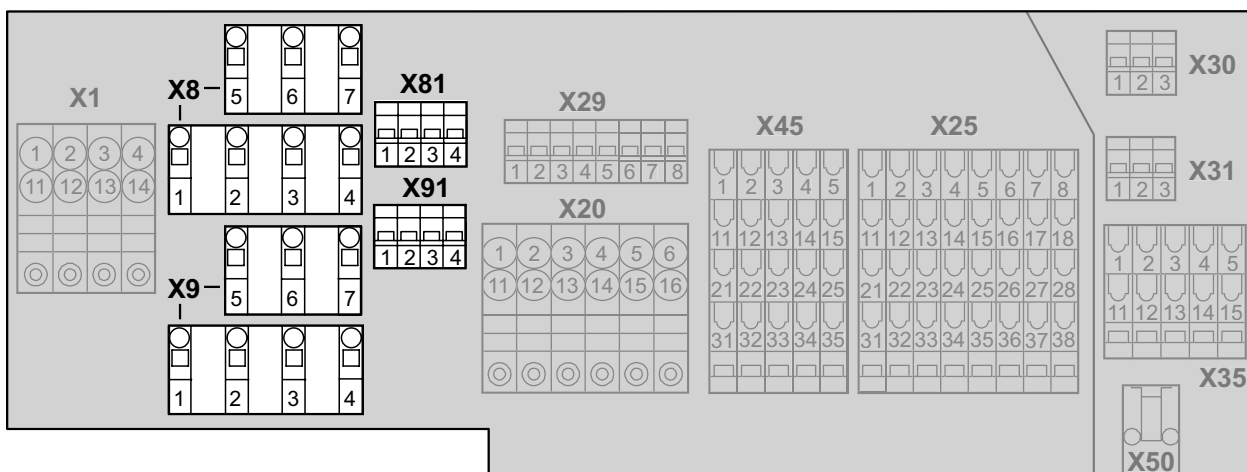
If binary output DB00 is used to control the brake, do not change the parameters of the binary output functions.

Severe or fatal injuries.

- Before using the binary output for controlling the brake, check the parameter settings.



3.1.4 Motor connection terminal in conjunction with MOVIFIT® SC



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| Motor connection terminal (connection via hybrid cable) | | | | |
|---|---|--------|--|-------|
| No. | | Name | Function | Motor |
| X8 | 1 | PE | Motor 1 PE connection | 1 |
| | 2 | U_M1 | Output motor 1 phase U | |
| | 3 | V_M1 | Output motor 1 phase V | |
| | 4 | W_M1 | Output motor 1 phase W | |
| | 5 | 15_M1 | Connection for SEW brake motor 1 terminal 15 (blue) | |
| | 6 | 14_M1 | Connection for SEW brake motor 1 terminal 14 (white) | |
| | 7 | 13_M1 | Connection for SEW brake motor 1 terminal 13 (red) | |
| X81 | 1 | TF+_M1 | Connection for temperature sensor TF/TH (+) motor 1 | |
| | 2 | TF-_M1 | Connection for temperature sensor TF/TH (-) motor 1 | |
| | 3 | DB00 | Binary output "Brake released" motor 1 (switching signal 24 V) | |
| | 4 | 0V24_C | 0V24 reference potential for brake output for motor 1 | |
| Important: For operation with one motor, use terminals X8 and X81. In this case, do not connect terminals X9 and X91. | | | | |
| X9 | 1 | PE | Motor 2 PE connection | 2 |
| | 2 | U_M2 | Output motor 2 phase U | |
| | 3 | V_M2 | Output motor 2 phase V | |
| | 4 | W_M2 | Output motor 2 phase W | |
| | 5 | 15_M2 | Connection for SEW brake motor 2 terminal 15 (blue) | |
| | 6 | 14_M2 | Connection for SEW brake motor 2 terminal 14 (white) | |
| | 7 | 13_M2 | Connection for SEW brake motor 2 terminal 13 (red) | |
| X91 | 1 | TF+_M2 | Connection for temperature sensor TF/TH (+) motor 2 | |
| | 2 | TF-_M2 | Connection for temperature sensor TF/TH (-) motor 2 | |
| | 3 | DB01 | Binary output "Brake released" motor 2 (switching signal 24 V) | |
| | 4 | 0V24_C | 0V24 reference potential for brake output for motor 2 | |



HAZARD!

If binary outputs DB00 or DB01 are used to control the brake, do not change the parameters of the functions of the binary outputs.

Severe or fatal injuries.

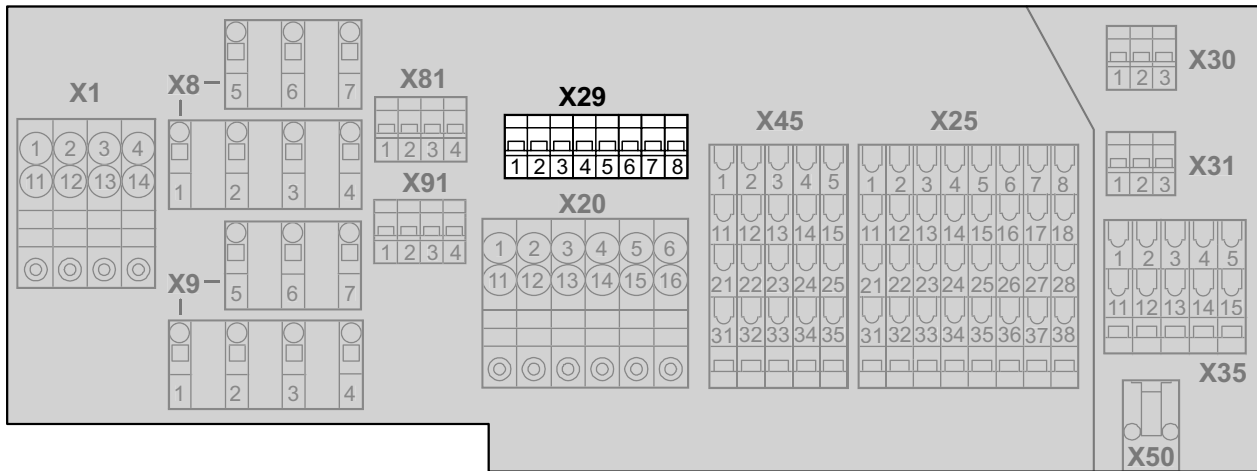
- Before using the binary output for controlling the brake, check the parameter settings.



Electrical Installation

ABOX with terminals and cable glands "MTA...-S02.-...-00"

3.1.5 24 V supply terminal (24 V power bus)

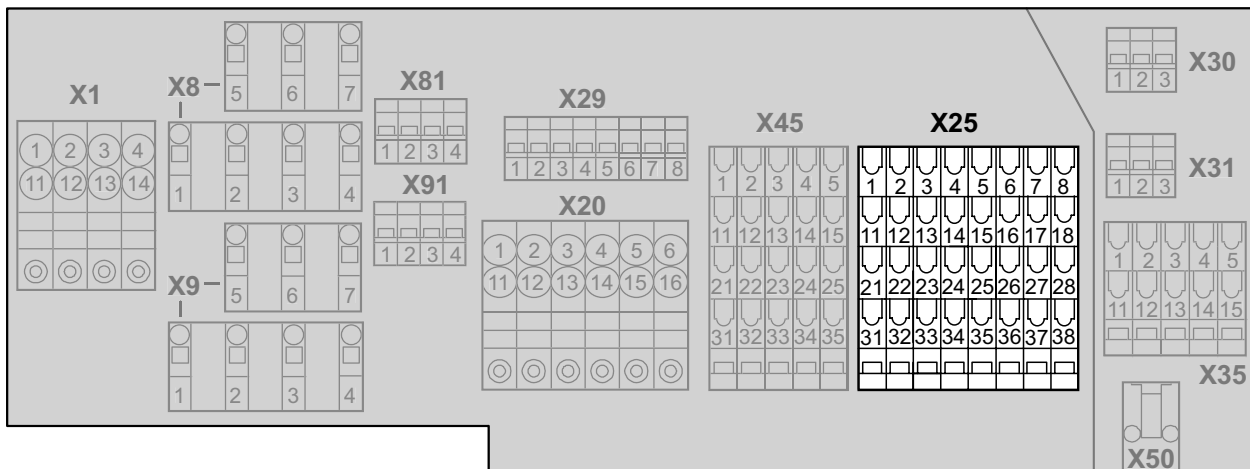


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| 24 V supply terminal (24 V power bus) | | | |
|---------------------------------------|------|-----------------------|--|
| No. | Name | Function | |
| X29 | 1 | +24V_C | +24 V supply – Continuous voltage (jumped with X20/2) |
| | 2 | 0V24_C | Reference potential 0V24 – Continuous voltage (jumped with X20/3) |
| | 3 | reserved | reserved |
| | 4 | reserved | reserved |
| | 5 | MOVIFIT® FC: +24V_P | MOVIFIT® FC: +24V supply for integrated frequency inverter, infeed |
| | | MOVIFIT® SC: reserved | MOVIFIT® SC: reserved |
| | 6 | MOVIFIT® FC: 0V24_P | MOVIFIT® FC: 0V24 Reference potential for integrated frequency inverter, incoming supply |
| | | MOVIFIT® SC: reserved | MOVIFIT® SC: reserved |
| | 7 | reserved | reserved |
| | 8 | reserved | reserved |



3.1.6 I/O terminal (connection of sensors)



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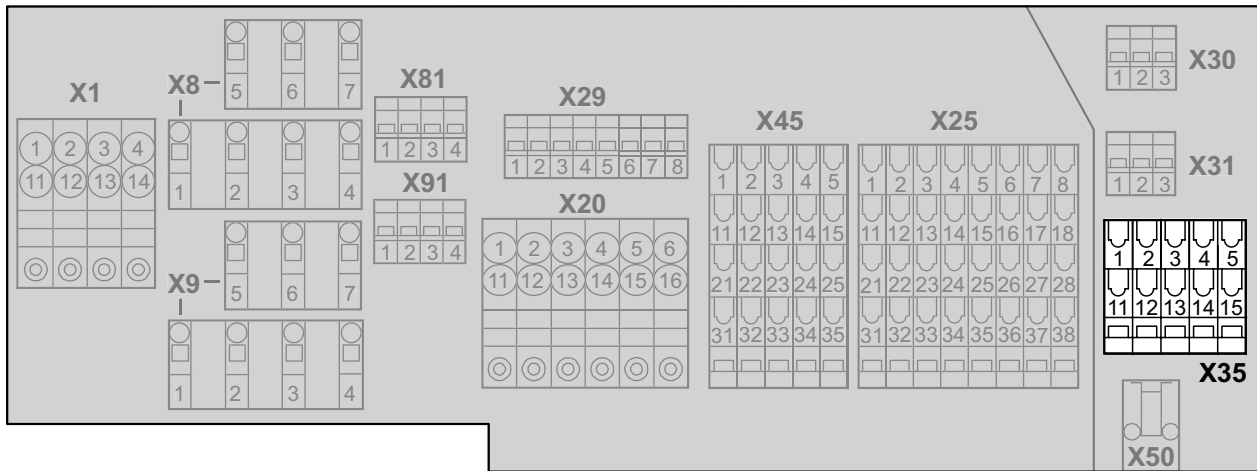
| I/O terminal (connection of sensors) | | | |
|--------------------------------------|-------|----------|---------------------------------------|
| No. | Name | Function | |
| X25 | 1 | DI100 | Binary input DI100 (switching signal) |
| | 2 | DI102 | Binary input DI102 (switching signal) |
| | 3-8 | reserved | reserved |
| | 11 | DI101 | Binary input DI101 (switching signal) |
| | 12 | DI103 | Binary input DI103 (switching signal) |
| | 13-18 | reserved | reserved |
| | 21 | VO24 | +24 V sensor supply, from +24V_C |
| | 22 | VO24 | +24 V sensor supply, from +24V_C |
| | 23-28 | reserved | reserved |
| | 31 | 0V24_C | 0V24 reference potential for sensors |
| | 32 | 0V24_C | 0V24 reference potential for sensors |
| | 33-38 | reserved | reserved |



Electrical Installation

ABOX with terminals and cable glands "MTA...-S02.-...-00"

3.1.7 SBus terminal (CAN)



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| SBus terminal (CAN) | | | |
|---------------------|----|---------|---|
| No. | | Name | Function |
| X35 | 1 | CAN_GND | 0V reference potential for SBus (CAN) |
| | 2 | CAN_H | SBus CAN_H - incoming |
| | 3 | CAN_L | SBus CAN_L - incoming |
| | 4 | +24V_C | +24 V continuous voltage supply |
| | 5 | 0V24_C | Reference potential 0V24 – continuous voltage |
| | 11 | CAN_GND | 0V reference potential for SBus (CAN) |
| | 12 | CAN_H | SBus CAN_H - outgoing |
| | 13 | CAN_L | SBus CAN_L - outgoing |
| | 14 | +24V_C | +24 V continuous voltage supply |
| | 15 | 0V24_C | Reference potential 0V24 – continuous voltage |



NOTE

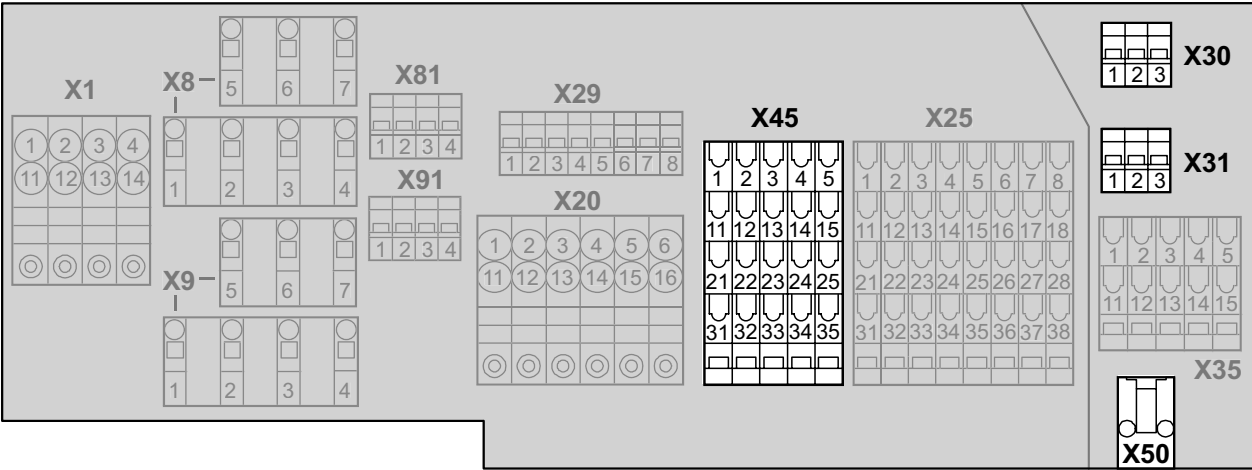
With the "SBus slave" version, the continuous voltage 24V_C can alternatively be connected to X20 or X35 and can be looped through.

However it may not be fed at X20 and looped from X35 or vice versa.



3.1.8 Reserved terminals

In conjunction with the "SBus slave" version, terminals X45, X30, X31 as well as the X50 plug connector are reserved.




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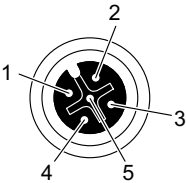
| Reserved terminal/plug connector | | | |
|----------------------------------|------|----------|----------|
| No. | | Name | Function |
| X45 | 1-35 | reserved | reserved |
| X30 | 1-3 | reserved | reserved |
| X31 | 1-3 | reserved | reserved |
| X50 | 1-4 | reserved | reserved |



3.2 Hybrid BOX "MTA...-S42.-...-00", "MTA...-S52.-...-00" , "MTA...-S62.-...-00"

| | NOTE |
|---|--|
|  | <ul style="list-style-type: none"> • The hybrid ABOX is based on the ABOX with terminals and cable glands. Therefore, only the plug connectors in addition to the standard ABOX are described in the following. • For a description of the terminals, refer to the ABOX with terminals and cable glands "MTA...-S02.-...-00" section. • Customers cannot use terminal strip X25 because the described plug connectors are assigned to it. |

3.2.1 I/O assignment (connection of sensors)

| M12 plug connector, standard coding, female | Pin | X21 | X22 | X23 - X28 |
|--|-----|--------|--------|-----------|
|  | 1 | VO24 | VO24 | reserved |
| | 2 | DI101 | DI103 | reserved |
| | 3 | 0V24_C | 0V24_C | reserved |
| | 4 | DI100 | DI102 | reserved |
| | 5 | n.c. | n.c. | reserved |

3.2.2 Reserved plug connectors

Plug connectors X50 and X11/X12 (only "MTA...-S52.-...-00" , "MTA...-S62.-...-00") of the hybrid ABOX are generally reserved in conjunction with the "SBus slave" version.



3.3 Connection example

3.3.1 SBus connection



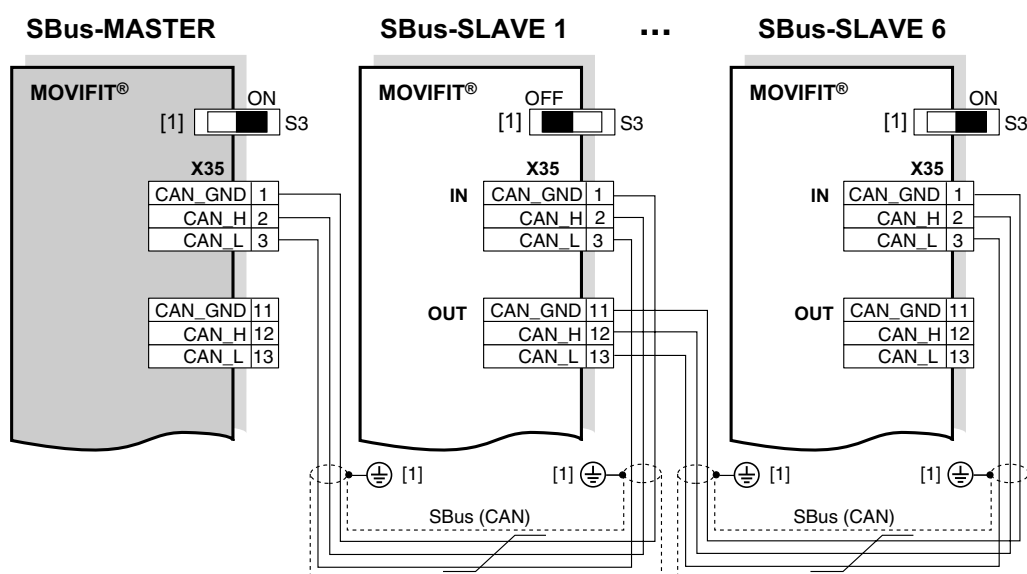
NOTES

The example applies for the following connection box:

- Standard ABOX "MTA...-S02.-...-00"
- Hybrid ABOX "MTA...-S42.-...-00"
- Hybrid ABOX "MTA...-S52.-...-00"
- Hybrid ABOX "MTA...-S62.-...-00"

The following figure shows the SBus connection:

- If MOVIFIT® is located at the end of an SBus segment, it is only connected via the incoming SBus cable (CAN).
- To prevent malfunctions in the bus system due to reflections, etc., the SBus segment must be terminated using bus terminating resistors at the first and last physical stations.
- The bus terminating resistors are already installed in the MOVIFIT® ABOX and can be activated using switch S3.



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- [1] DIP switch S3 for bus termination
[2] EMC cable gland



4 Startup



NOTE

This section describes how to startup MOVIFIT® as "SBus slave".

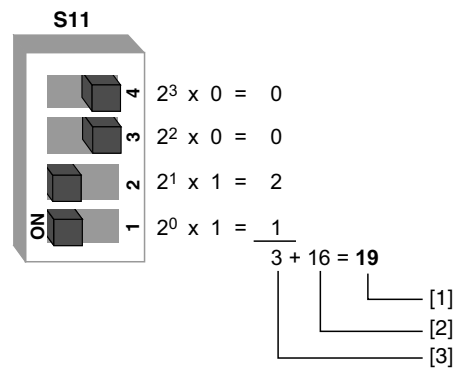
It is essential that you observe the MOVIFIT® SC or FC operating instructions and the function level "Technology" manual, in particular the safety and warning notes.

4.1 Startup in conjunction with SBus

1. Check that MOVIFIT® is connected correctly.
2. Set the SBus slave address using DIP switches S11/1 to S11/4 (→ page 6) on the MOVIFIT® ABOX.

The SBus slave address is calculated from the significance of the DIP switches and a fixed offset of 16.

The following figure shows an example of setting SBus slave address 19:



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[1] Example SBus slave address 19

[2] Window offset 16

[3] Significance of DIP switches

Valid addresses 16 to 21

3. Connect MOVIFIT® bus terminating resistors at first and last SBus station.
 - If MOVIFIT® is located at the end of an SBus segment, it is only connected to the incoming SBus via the incoming CAN cable.
 - To prevent malfunctions in the bus system due to reflections, etc., the SBus segment must be terminated using bus terminating resistors at the first and last physical stations.



NOTE

The SBus (CAN) is not interrupted when removing the EBOX (electronics unit) from the ABOX (connection unit).

4. For starting up the MOVIFIT® frequency inverter or motor starter, refer to the MOVIFIT® SC or MOVIFIT® FC operating instructions.
5. Mount MOVIFIT® EBOX on the ABOX and connect.
6. Switch on 24V-C. The associated control LED should now light up green.



4.1.1 Bus termination

The bus terminating resistors are already installed in the MOVIFIT® ABOX (only with standard ABOX "MTA...-S02.-...-00" or hybrid ABOX "MTA...-S42.-...-00", "MTA...-S52.-...-00" , "MTA...-S62.-...-00") and can be activated using switch S3:

| Bus termination ON = on | Bus termination OFF = off (factory setting) |
|-------------------------|--|
| <p>S3</p> | <p>S3</p> |

The following table shows the operating principle of the bus termination switch:

| Bus termination switch S3 | |
|---------------------------|---------------------------|
| Bus termination ON = on | Bus termination OFF = off |
| | |



4.2 Application example transparent mode MOVIFIT® FC with 6 FC slave units



NOTE

The following section completes the section "PROFIBUS" in the MOVIFIT® function level "Technology" manual by an application example in transparent mode for controlling MOVIFIT® slave units.

The transparent mode offers the following functionality for MOVIFIT® FC:

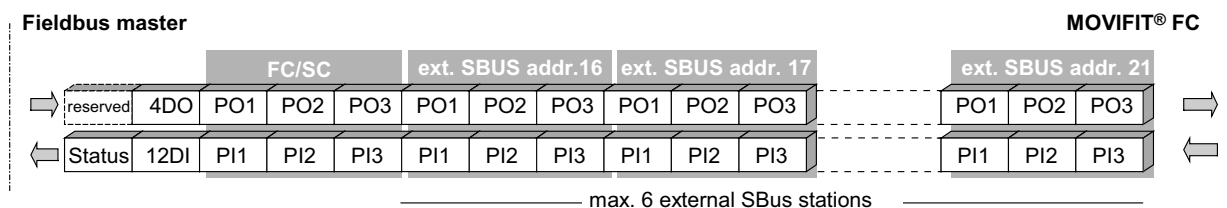
- Control of the integrated frequency inverter via three process data words. This means that the ramp times for acceleration and deceleration must be specified cyclically by the higher-level controller.
- Control of 6 other externally connected FC slave units via three process data words each.
- 12/16 digital inputs and 0/4 digital outputs can be used by MOVIFIT® FC to evaluate external sensors and address actuators. The PLC program switches the combined inputs/outputs. "1 signals" at the digital outputs DO0..3 set a terminal automatically to a digital output.
- Cyclical diagnosis of the sensor/actuator channels and the maintenance switch via special status information "MOVIFIT® status".

The following table shows the configuration example for this MOVIFIT® FC application with six slave units:

| Slot | Assignment (DP-ID) | Plug-in module | Comment |
|------|---------------------|--------------------|--|
| 1 | "PROFIsafe option" | "Slot not used" | |
| 2 | "Parameter channel" | "Slot not used" | |
| 3 | "PD channel" | "5 PD (5 words)" | Internal FC |
| 4 | "PD channel" | "15 PD (15 words)" | 5 external FC slave units (SBus addresses 16 through 20) |
| 5 | "PD channel" | "3 PD (3 words)" | 1 external FC slave unit (SBus address 21) |

The following figure shows which process data is transferred via the bus system. Five words each are transferred between the fieldbus master and MOVIFIT® FC as input and output data.

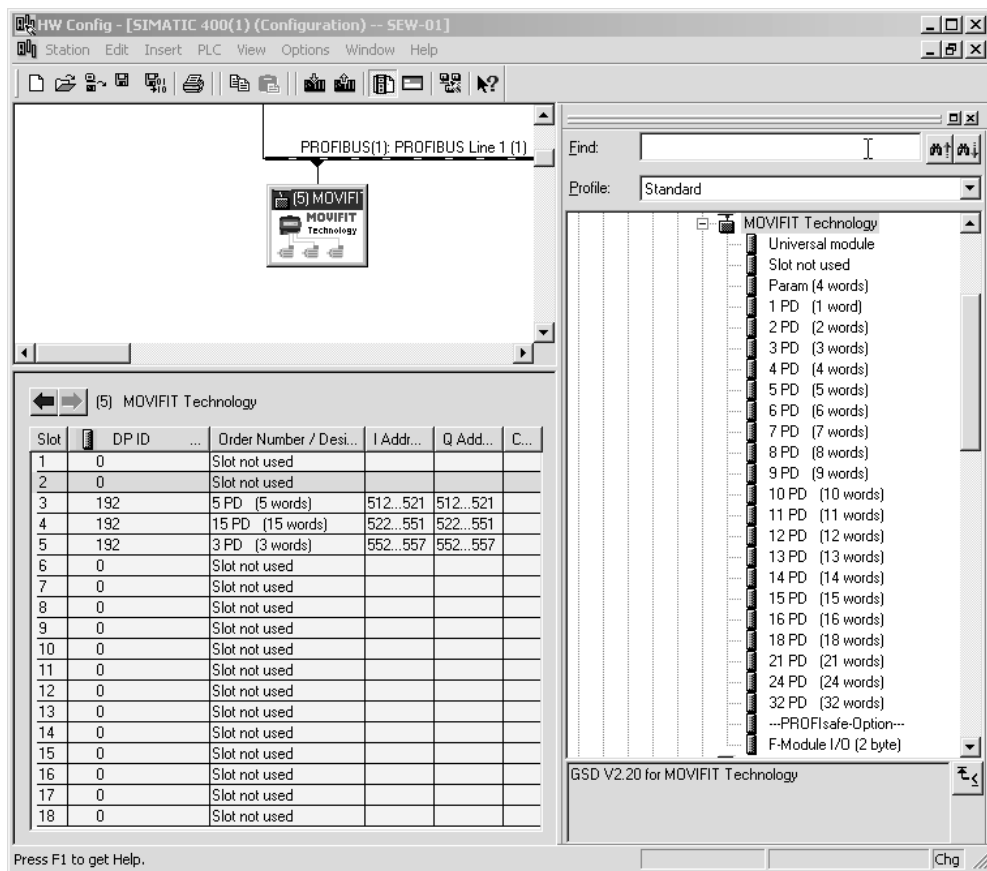
The other external FC slave units are defined in slots 4 and 5. This example was chosen because many PLC systems only allow a consistency of max. 16 words. As six FC slave units occupy 18 process data words, they were divided in 5+1, which means the sixth external FC slave unit is configured via slot 5.



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The following figure shows a STEP7 configuration example for transparent mode MOVIFIT® FC with 6 FC slave units:



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NOTE

Each slave unit can be configured in a separate slot from MOVIFIT® Technology firmware .11 and higher. This means each individual drive can be freely assigned in the peripheral address range of the controller. Firmware V.10 supports a maximum of 6 process data channels (slots 3 to 8).



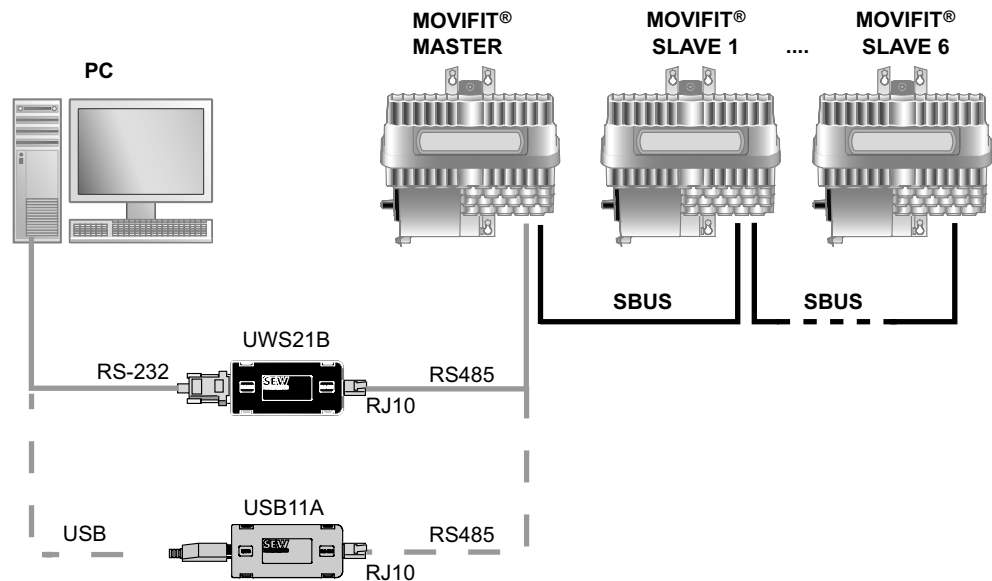
4.3 Including slave units in MOVITOOLS® MotionStudio

4.3.1 Connection between MOVIFIT® as "SBus slave" version and PC

The connection between MOVIFIT® as "SBus slave" version and PC for diagnostics or parameter setting is generally implemented via the corresponding master MOVIFIT®.

The diagnostic interface of the master MOVIFIT® can be connected to a PC using one of the following options:

- UWS21B with serial interface RS-232, part number 1 820 456 2
- USB11A with USB interface, part number 0 824 831 1



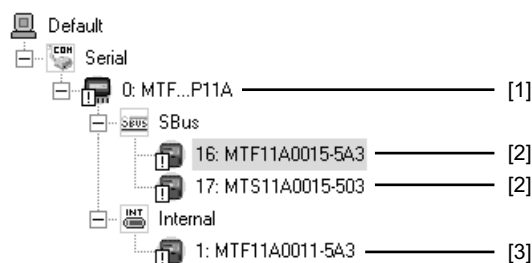
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Scope of delivery:

- Interface adapter
- Cable with RJ10 plug connector
- Interface cable RS-232 (UWS21B) or USB (USB11A)

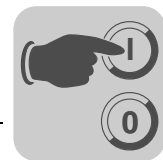
4.3.2 Display of slave units

The slaves are displayed in MOVITOOLS® MotionStudio under the corresponding master MOVIFIT®:



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- [1] Communication units MOVIFIT® master
 [2] Power sections MOVIFIT® SBus slave
 [3] Power section MOVIFIT® master

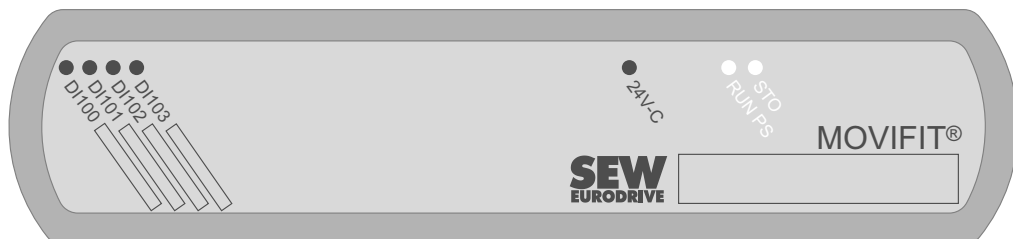


5 Operation

5.1 Operating indicators MOVIFIT® as SBus slave version

5.1.1 General LEDs

The following figure shows the LEDs for the digital inputs and 24 V continuous voltage:



62804AXX

States of the LEDs "DI.."

The following table shows the states of the "DI.." LEDs:

| LED | State | Meaning |
|---------------------|---------|---|
| DI100 through DI103 | YEL-LOW | Input signal present at binary input DI.. |
| | OFF | Input signal at binary input DI.. open or "0" |

States of the "24V-C" LEDs

The following table shows the states of the "24V-C" LEDs:

| LED | State | Meaning | Remedy |
|-------|-------|--|-----------------------------|
| 24V-C | Green | 24V-C continuous voltage is present. | - |
| | Off | 24V-C continuous voltage is not present. | Check 24V-C voltage supply. |

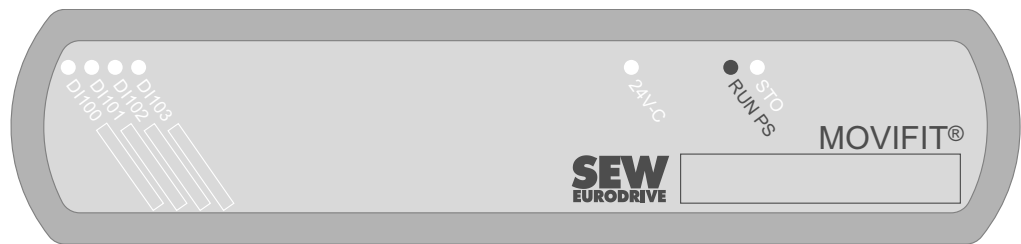


Operation

Operating indicators MOVIFIT® as SBus slave version

5.1.2 States of the "RUN PS" LED in conjunction with MOVIFIT® FC

The following figures shows the "RUN PS" LED (frequency inverter status LED):



62805AXX

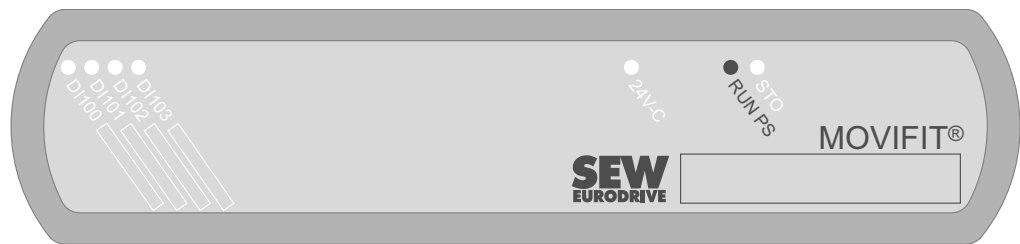
| LED color | LED status | Operating state | Description |
|----------------|----------------------------------|---|---|
| – | Off | Not ready for operation | No 24 V power supply |
| Yellow | Flashes steadily | Not ready for operation | Self-test phase active or 24 V power supply present but supply voltage not OK. |
| Yellow | Flashing evenly, fast | Ready for operation | Brake release without drive enable active. |
| Yellow | Steady light | Ready, but unit inhibited | 24 V power supply and supply voltage OK, but no enable signal. |
| Green / yellow | Flashing with alternating colors | Ready, but timeout | Faulty communication with cyclical data exchange |
| Green | Steady light | Unit enabled | Motor in operation. |
| Green | Flashing evenly, fast | Current limit active | Drive operating at current limit. |
| Green | Flashes steadily | Ready for operation | Standstill current function active. |
| Red | Steady light | Not ready for operation | Check DC 24 V supply. Make sure that there is a smoothed DC voltage with low ripple (residual ripple max. 13%) present. |
| Red | 2x flashing, break | Error 07 | DC link voltage too high. |
| Red | Flashing slowly | Error 08 | Speed monitoring error |
| | | Error 90 | Motor – inverter assignment incorrect |
| | | Error 15 | 24 V supply voltage too low |
| | | Errors 17 to 24, 37 | CPU error |
| | | Errors 25, 94 | EEPROM error |
| Red | 3x flashing, break | Error 01 | Overcurrent in output stage |
| | | Error 11 | Overtemperature in output stage |
| Red | 4x flashing, break | Error 84 | Overload in motor |
| | | Error 31 | TF has triggered |
| Red | 5x flashing, break | Error 89 | Overtemperature in brake |
| | | Motor – frequency inverter assignment incorrect | |
| | | Error 4 | Overcurrent in brake chopper |
| Red | 6x flashing, break | Error 06 | Mains phase failure |
| | | Error 81 | Start condition ¹⁾ |
| | | Error 82 | Open output |

1) only for hoist operation mode



5.1.3 States of the "RUN PS" LED in conjunction with MOVIFIT® SC

The following figure shows the "RUN PS" LED (motor starter status LED):



62805AXX

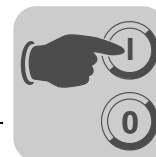
| Unit status LED | | |
|-----------------|---|--|
| LED color | LED status | Operating state MOVIFIT® motor starter power section |
| – | Off | No 24 V electronics power supply |
| Red | Steady light | 24 V electronics power supply available: • Damages on motor starter PCB |
| Yellow | Steady light | Normal operation "No enable": • Motor starter ready for operation (24 V electronics power supply and supply voltage present) • Motor starter power section not enabled |
| Green | Steady light | Normal operation "enable" for single-motor operation: • Motor starter ready for operation (24 V electronics power supply and supply voltage present) • Motor enabled Normal operation "enable" for dual-motor operation: • Motor starter ready for operation (24 V electronics power supply and supply voltage present) • Both drives enabled |
| Green | 1 x flashing, break | Normal operation "enable" for dual-motor operation: • Motor starter ready for operation (24 V electronics power supply and supply voltage present) • Drive 1 enabled |
| Green | 2 x flashing, break | Normal operation "enable" for dual-motor operation: • Motor starter ready for operation (24 V electronics power supply and supply voltage present) • Drive 2 enabled |
| Yellow | Flashes steadily | 24 V electronics power supply for motor starter power section present: • No supply voltage • Motor starter power section not ready • No fault |
| Yellow | Flashing evenly, fast | Operating state "Release brake of drive 1 and/or drive 2 without enable" |
| Green /yellow | Flashing evenly with alternating colors | Motor starter power section ready, communication timeout with cyclic data transfer |
| Green | Flashing evenly, fast | Operating at the current limit |
| Red | Flashing evenly, slowly | Internal CPU error, EEPROM error, output open, watchdog |
| Red | 3 x flashing, break | Error 1 (Overcurrent in the motor) Error 11 (Overtemperature in the output stage) Error 44 (Ixt utilization) |
| Red | 4 x flashing, break | Error 31 (Motor temperature sensor) In dual-motor operation, triggering the temperature sensor in drive 1 and/or drive 2 can cause the fault. Error 84 Error 84 (cyclical monitoring of drive 1 or drive 2) (UL Protective functions for motor 1 or motor 2) (Motor temperature simulation motor 1 or motor 2) |



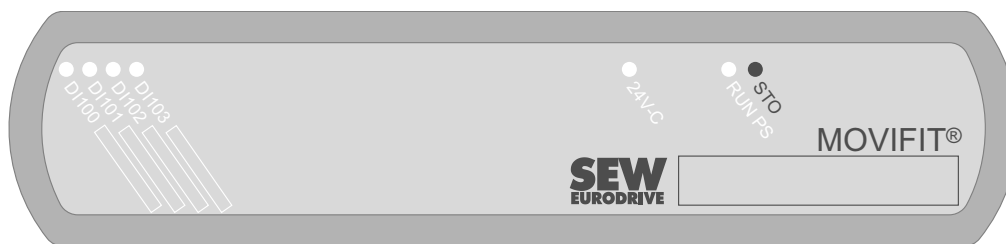
Operation

Operating indicators MOVIFIT® as SBus slave version

| Unit status LED | | |
|-----------------|---------------------|--|
| LED color | LED status | Operating state MOVIFIT® motor starter power section |
| Red | 5 x flashing, break | Error 89 (brake cyclical monitoring of drive 1 or drive 2) |
| Red | 6 x flashing, break | Error 6 (mains phase failure) |



5.1.4 States of the "STO" LED (only in conjunction with MOVIFIT® FC)



62806AXX

| LED | State | Meaning |
|-----|--------|--|
| STO | Yellow | • Drive has stopped safely ("STO active"). |
| | Off | • Drive has not stopped safely ("STO inactive"). |




! WARNING

Safety-relevant continued operation of the LED indication "STO" by the user.
Severe or fatal injuries.

- The LEDs are not safety-oriented and may not be used as a safety device.



6 Technical Data

| | NOTE |
|---|---|
|  | <p>This section describes the electronics data, digital inputs and SBus interface of MOVIFIT® SC or FC "SBus slave" versions.</p> <p>For other technical data, refer to the MOVIFIT® SC or FC operating instructions.</p> |

6.1 General electronics data

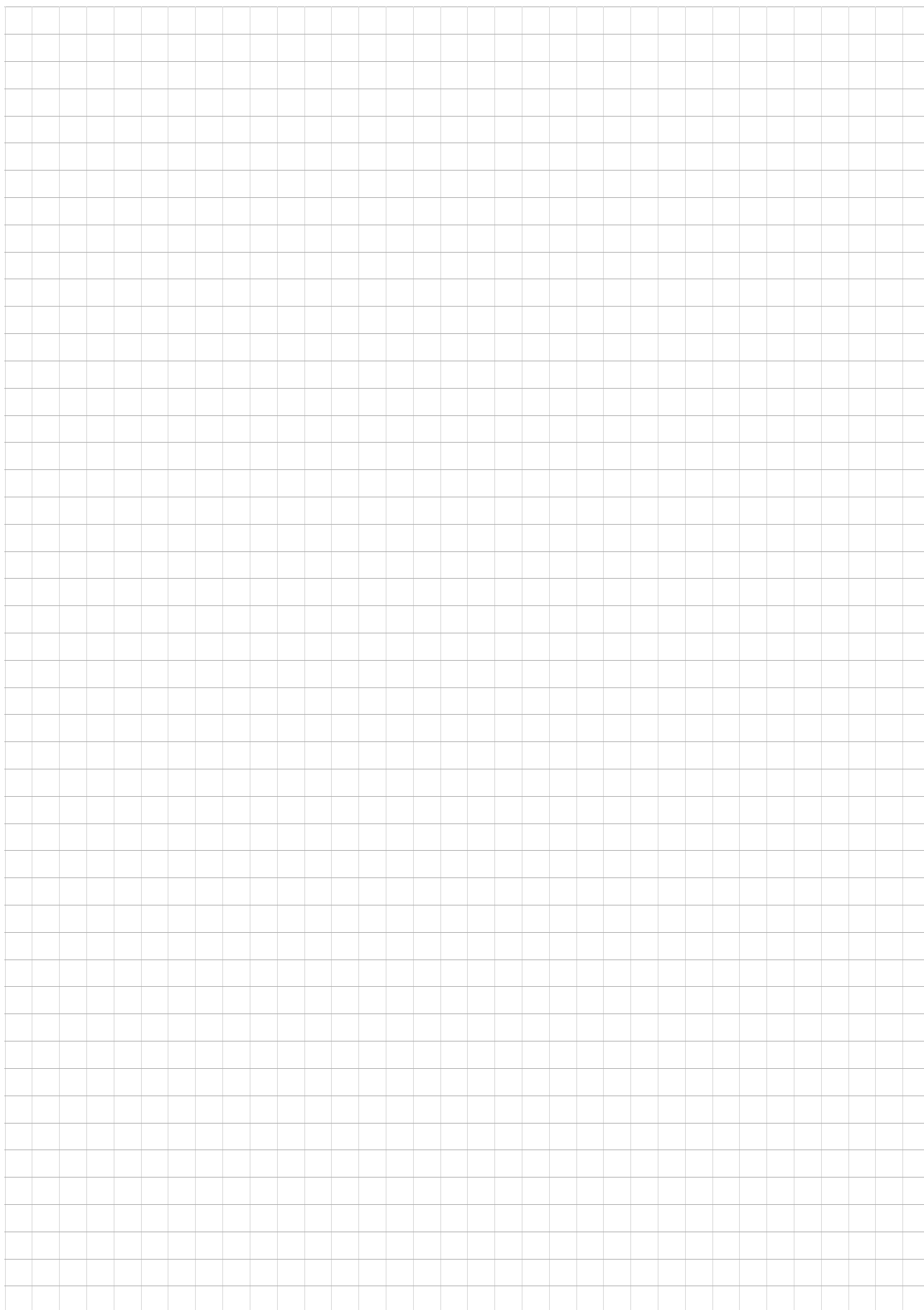
| General electronics data | |
|---|--|
| Electronics and sensor supply 24V-C(ontinuous) | U_{IN} = DC 24 V -15 % / +20 % according to EN 61131-2 MOVIFIT® FC: I_E ≤ 50 mA, typically 20 mA (for MOVIFIT® electronics) MOVIFIT® SC: I_E ≤ 150 mA, typically 70 mA (for MOVIFIT® electronics) plus up to 500 mA for sensor supply (depending on the number and type of connected sensors) |
| Inverter supply 24V-P (MOVIFIT® FC only) | U_{IN} = DC 24 V -15 % / +20 % according to EN 61131-2 I_E ≤ 250 mA, typically 180 mA |
| Electrical isolation | Separate potentials for: <ul style="list-style-type: none"> • SBus connection (X35/1-3) potential-free • 24V-C for MOVIFIT® electronics and digital inputs (DI..) • 24V-P for integrated frequency inveter (MOVIFIT® FC only) |
| Bus cable shielding | Apply with EMC metal cable glands and fittings or EMC shield clamp (See section "Installation instructions" in the MOVIFIT® SC or FC operating instructions) |

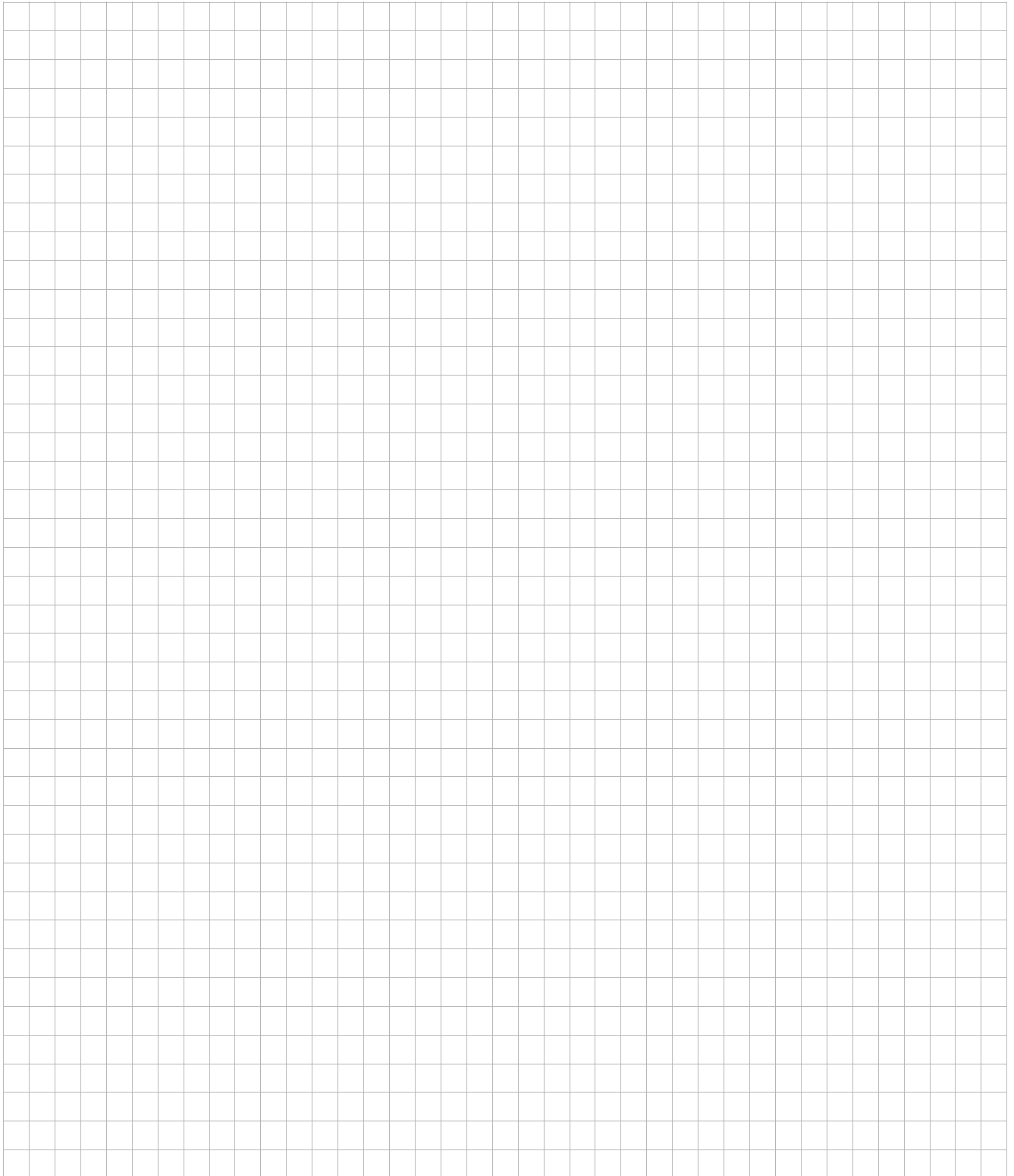
6.2 Digital inputs

| Digital inputs | |
|--|---|
| Number of inputs | 4 (DI100 through DI103) |
| Type of input | PLC-compatible according to EN 61131-2 (digital inputs type 1) R_i ca. 4 kΩ, sampling cycle ≤ 5 ms Signal level +15 V .. +30 V "1" = Contact closed -3 V .. +5 V "0" = Contact open |
| Sensor supply (4 groups) | DC 24 V to EN 61131-2, interference voltage proof and short-circuit proof |
| Rated current Internal voltage drop | 500 mA max. 2 V |
| Potential reference | 24V-C |

6.3 Interfaces

| Interfaces | |
|--|---|
| SBus interface (not with function level 'Classic') Transmission technology Bus termination | Interface to other SBus-capable SEW units CAN bus to CAN specification 2.0, parts A and B ISO 11898 compliant 120 Ω terminating resistor in conjunction with ABOX "MTA...-S02.-...-00", "MTA...-S42.-...-00", "MTA...-S52.-...-00" and "MTA...-S62.-...-00" permanently installed and can be activated via switch. With all other ABOX versions, you must use an external terminating resistor. |
| RS-485 diagnostic interface | Diagnostic interface, not electrically isolated from MOVIFIT® electronics |





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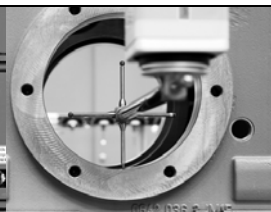
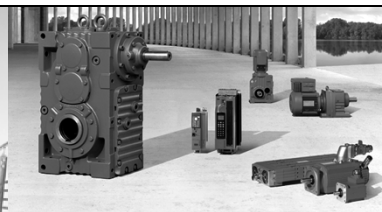
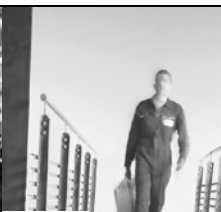
With people who think fast and develop the future with you.

With a worldwide service network that is always close at hand.

With drives and controls that automatically improve your productivity.

With comprehensive knowledge in virtually every branch of industry today.

With uncompromising quality that reduces the cost and complexity of daily operations.



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