Manual

AUTOMATION


# WAGO-SPEEDWAY 767

## Power Divider, 24 VDC

# 767-9101

Version 3.0.0

WAGO®

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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally protected by trademark or patent.

# Table of Contents

# 1 Notes about this Documentation

The module shall only be installed and operated in conjunction with these operating instructions and the system description.

**⚠ WARNING**

**Observe release notes!**
Please note that, within the SPEEDWAY system, a function is provided **without restriction** only if all system's components have the same system-wide firmware release. Therefore, always observe the appropriate release notes on products used.

**NOTICE**

**Supply layout!**
In addition to these operating instructions, you will need the "WAGO *SPEEDWAY 767*, System Description and Information" manual, which can be downloaded at www.wago.com. There you will find information regarding supply layout, etc.

**Note**

**Always retain this documentation!**
This documentation is part of the product. Therefore, retain the documentation during the entire service life of the product. Pass on the documentation to any subsequent user. In addition, ensure that any supplement to this documentation is included, if necessary.

## 1.1 Validity of these Operating Instructions

These operating instructions are only applicable to the WAGO *SPEEDWAY 767* Series module Power Divider, 24 VDC, 767-9101.

## 1.2 Copyright

## 1.3 Symbols

⚠ DANGER

**Personal Injury!**
Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ DANGER

**Personal Injury Caused by Electric Current!**
Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

**Personal Injury!**
Indicates a moderate-risk, potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

**Personal Injury!**
Indicates a low-risk, potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

**Damage to Property!**
Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

NOTICE

**Damage to Property Caused by Electrostatic Discharge (ESD)!**
Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.

Note

**Important Note!**
Indicates a potential malfunction which, if not avoided, however, will not result in damage to property.

**Information**

**Additional Information:**
Refers to additional information which is not an integral part of this documentation (e.g., the Internet).

## 1.4 Number Notation

Table 1: Number Notation

| Number Code | Example | Note |
|---|---|---|
| Decimal | 100 | Normal notation |
| Hexadecimal | 0x64 | C notation |
| Binary | '100'<br>'0110.0100' | In quotation marks, nibble separated with dots (.) |

## 1.5 Font Conventions

Table 2: Font Conventions

| Font Type | Indicates |
|---|---|
| *italic* | Names of paths and data files are marked in italic-type.<br>e.g.: *C:\Program Files\WAGO Software* |
| **Menu** | Menu items are marked in bold letters.<br>e.g.: **Save** |
| > | A greater-than sign between two names means the selection of a menu item from a menu.<br>e.g.: **File** > **New** |
| **Input** | Designation of input or optional fields are marked in bold letters,<br>e.g.: **Start of measurement range** |
| “Value” | Input or selective values are marked in inverted commas.<br>e.g.: Enter the value “4 mA” under **Start of measurement range**. |
| **[Button]** | Pushbuttons in dialog boxes are marked with bold letters in square brackets.<br>e.g.: **[Input]** |
| **[Key]** | Keys are marked with bold letters in square brackets.<br>e.g.: **[F5]** |

# 2 Important Notes

This section includes an overall summary of the most important safety requirements and notes that are mentioned in each individual section. To protect your health and prevent damage to devices as well, it is imperative to read and carefully follow the safety guidelines.

## 2.1 Legal Bases

### 2.1.1 Subject to Changes

WAGO Kontakttechnik GmbH & Co. KG reserves the right to provide for any alterations or modifications that serve to increase the efficiency of technical progress. WAGO Kontakttechnik GmbH & Co. KG owns all rights arising from the granting of patents or from the legal protection of utility patents. Third-party products are always mentioned without any reference to patent rights. Thus, the existence of such rights cannot be excluded.

### 2.1.2 Personnel Qualification

All sequences implemented on the module may only be carried out by electrical specialists with sufficient knowledge in automation. The specialists must be familiar with the current standards and guidelines for the module and automation environment.

### 2.1.3 Use in Compliance with Underlying Provisions

The module 767-9101 is used to provide power to the 767 Series components.

Because power can be supplied separately or in supply groups, supplying power to I/O nodes distributed over a large expansion is possible. Detailed information can be found in the manual entitled "System Description and Notes."

The module shall not be used in conjunction with safety-related features (e.g., emergency-off apparatuses).

The module may not be used to control safety-related functions, i.e. it cannot be a functional part of a safety function.

The module may only be operated in combination with components of the WAGO *SPEEDWAY 767* Series.

The module was developed for applications requiring IP 67 (NEMA type 6, 6P) protection.

Applications other than those described in this manual are not permitted.

### 2.1.4 Technical Condition of Specified Devices

The devices to be supplied ex works are equipped with hardware and software configurations, which meet the individual application requirements. WAGO Kontakttechnik GmbH & Co. KG will be exempted from any liability in case of changes in hardware or software as well as to non-compliant usage of devices.

Please send your request for modified and new hardware or software configurations directly to WAGO Kontakttechnik GmbH & Co. KG.

## 2.2 Safety Advice (Precautions)

**⚠ DANGER**

**Electric voltage!**
Operate the 767 Series components exclusively with 24 VDC PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) voltage sources. Failure to comply may result in electric shock.

**⚠ CAUTION**

**Hot connection sockets!**
Even when taking into account derating, high surface temperatures on the metallic connection sockets and on the enclosure can arise during operation. If the 767 Series component has been in operation, allow it to cool off before moving it.

**NOTICE**

**The highest current carrying capacity of the M23 supply contacts is 24A!**
The supply lines of the M23 supply input shall only be charged with a maximum of 8A for $U_{LS}$ and 16A for $U_A$. If the maximum current carrying capacity is exceeded, both the connectors and components will be damaged. The module supply input is not automatically monitored for overload.

**NOTICE**

**The highest current carrying capacity of the M12 supply contacts is 4A!**
Supply lines $U_{LS}$ and $U_A$ of the M12 supply outputs shall each be charged with a maximum of 4A. If the maximum current carrying capacity is exceeded, both the connectors and components will be damaged. The module supply output is not automatically monitored for overload.

**NOTICE**

**Exposed connections!**
If connections have not been closed with protective caps, liquid or dirt can penetrate the components of the 767 Series module and ruin it. Therefore, close all unnecessary connections with protective caps, which must be ordered separately, in order to maintain the IP67 degree of protection. (See "Accessories" section of the fieldbus coupler/controller manual.)

- Disconnect the power supply from the system on which you wish to mount the 767 Series device.
- Observe the appropriate accident prevention regulations for your system during assembly, start-up, maintenance, and repairs. For example, BGV A3, "Electrical systems and equipment".

- The operating instructions for the 767 Series module and the system description must be laid out ready on site.
- Observe the exact positioning (coding) between plug and socket.
- The 767 Series device shall not come into contact with substances having seeping and insulating properties. Otherwise, additional measures shall be taken for the device, such as installation of an enclosure that is resistant to the above-mentioned substance properties.
- Electronic components fulfilling the ESD requirements according to the IEC 61000-6-2 are integrated in the 767 device. As higher voltages may occur, under unfavorable circumstances, due to electrical charge in the field, discharge must be ensured before performing work on the 767 system.
- Ensure that the potential equalization is correctly laid out.
- For transmission of the power supply, use only pre-assembled WAGO power supply cables, so the specified characteristics of the technical data can be achieved.
- The cable for the power supply infeed must be self-assembled. This requires an M23 connector with the IP 67 degree of protection. This can be obtained from WAGO. Use power supply cable with a maximum cross section of 2.5 mm².
- Replace defective or damaged modules (e.g., deformed connections), else function disruptions can occur in the respective fieldbus stations or nodes.
- When laying any cables, make sure that you do not lay them within the shear range of movable machine parts.
- For each activity, observe the corresponding personnel qualification in the corresponding Section.
- Observe the marking on the front and rear side of the module.

## 2.3 Safety Equipment

All 767 Series products are designed to meet the requirements of IP67. This includes complete protection against accidental contact with electrical voltage and currents – even when wet.

## 2.4 Notes on Operation

When integrating the 767 module in your machine or system, all the currently applicable norms, regulations and guidelines shall be observed during all activities: for example, BGV A3, "Electrical systems and equipment", DIN EN 418, EN 60204. The emergency stop equipment shall remain effective in all operating modes of the system and machine.

**For protection from electromagnetic interferences**

- Connect your system to protective earth (PE), and
- Ensure that the cable routing and the installation of the supply lines are correct.

**The following elements for 24 V supply shall be present:**

- Outer lightning protection on buildings
- Inner lightning protection of supply lines and signal lines
- Safe electrical separation of low voltage 24 VDC through PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) voltage sources

# 3 Device Description

The sole purpose of the module without S-BUS connection or fieldbus connection) is to provide power to the 767 Series components.

There is the possibility of individual and group supply of modules with higher power requirements. For this purpose, the module offers six M12 Power supply outputs. See the manual "System Description and Information".

When using an M23 connector with a connectable conductor cross-section up to 2.5 $mm^2$ feeds ($U_{LS}$ and $U_A$) over greater distances are possible.

Detailed information regarding the properties of the module is available in section "Technical Data".

# 3.1 Connectors

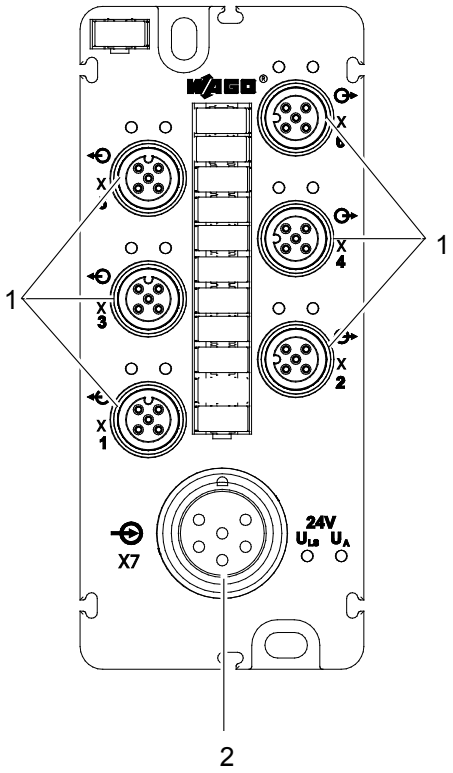



Figure 1: Connectors

Table 3: Legend

| Position | Description | Function |
|---|---|---|
| 1 | Supply outputs X1 – X6<br>M12 plug, A-coded | For supplying power to 767 Series components (individual and supply group). |
| 2 | Supply input<br>M23 socket | For infeed of $U_{LS}$ and $U_A$ supply voltages. |

## 3.2 Marking Possibilities and Fastening

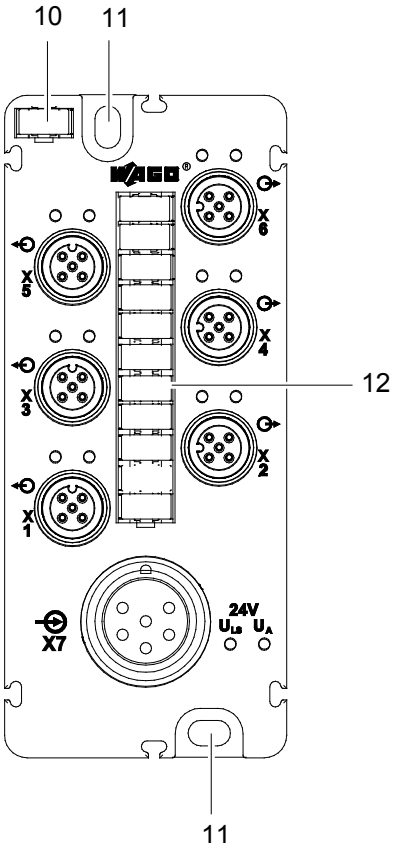



Figure 2: Marking possibilities and fastening

Table 4: Legend for figure "Marking possibilities and fastening"

| Position | Description | Function |
|---|---|---|
| 10 | Module marker card | For identifying the module within a fieldbus node. |
| 11 | Mounting holes for M4 screws | For fastening the module. |
| 12 | Marker strips | For identifying the supply outputs. |

## 3.3 Display Elements

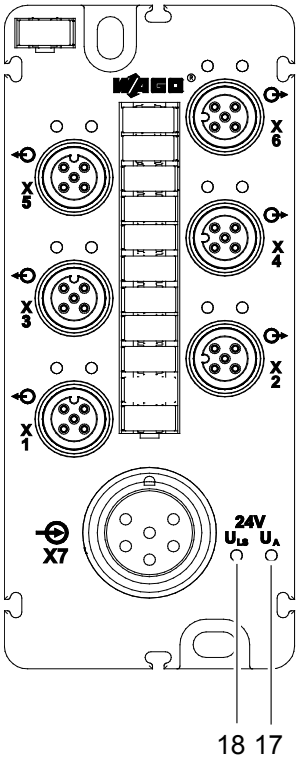



Figure 3: Display elements

Table 5: Legend for figure "Display elements"

| Position | LED | Color | Meaning |
|---|---|---|---|
| 17 | $U_A$ | Green | Actuator supply is present. |
| 18 | $U_{LS}$ | Green | Logic supply is present. |

**Note**

**Detailed informations**
Detailed information can be found in Section "Operational Messages of the Module".

## 3.4 Labeling

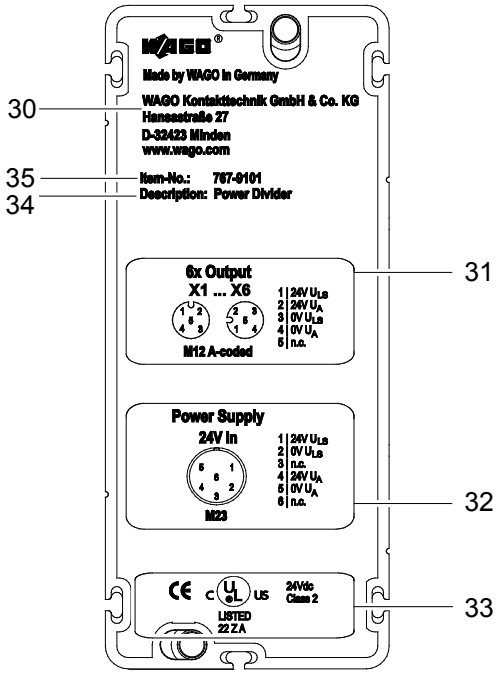



Figure 4: Labeling

Table 6: Legend for figure "Labeling"

| Position | Description |
|---|---|
| 30 | Manufacturer's mailing address |
| 31 | Connection assignment and coding type for supply outputs |
| 32 | Connection assignment and coding type for supply input |
| 33 | Information on approvals and CE marks |
| 34 | Clear labeling of the module |
| 35 | Item number |

On the side of the module is a label, with information that would prove useful in the case of a complaint:

- BA: Work order number (40)
- SN: Serial number (40)
- Manufacturing number (41)

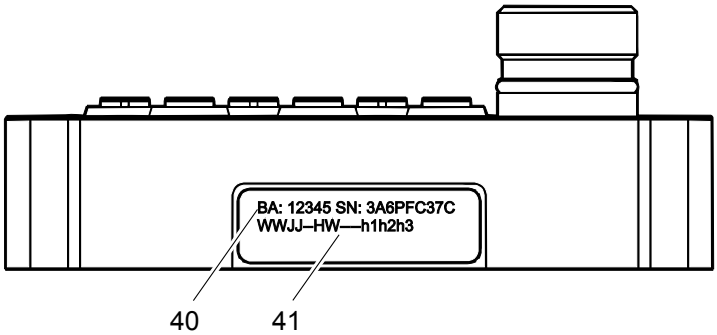



Figure 5: Label on the module

Table 7: Description of manufacturing number

| Abbreviation | Description |
|---|---|
| WW | Week of production |
| JJ | Year of production |
| HW | Hardware release index |
| h1h2h3 | Internal manufacturer information |

## 3.5 Dimensions

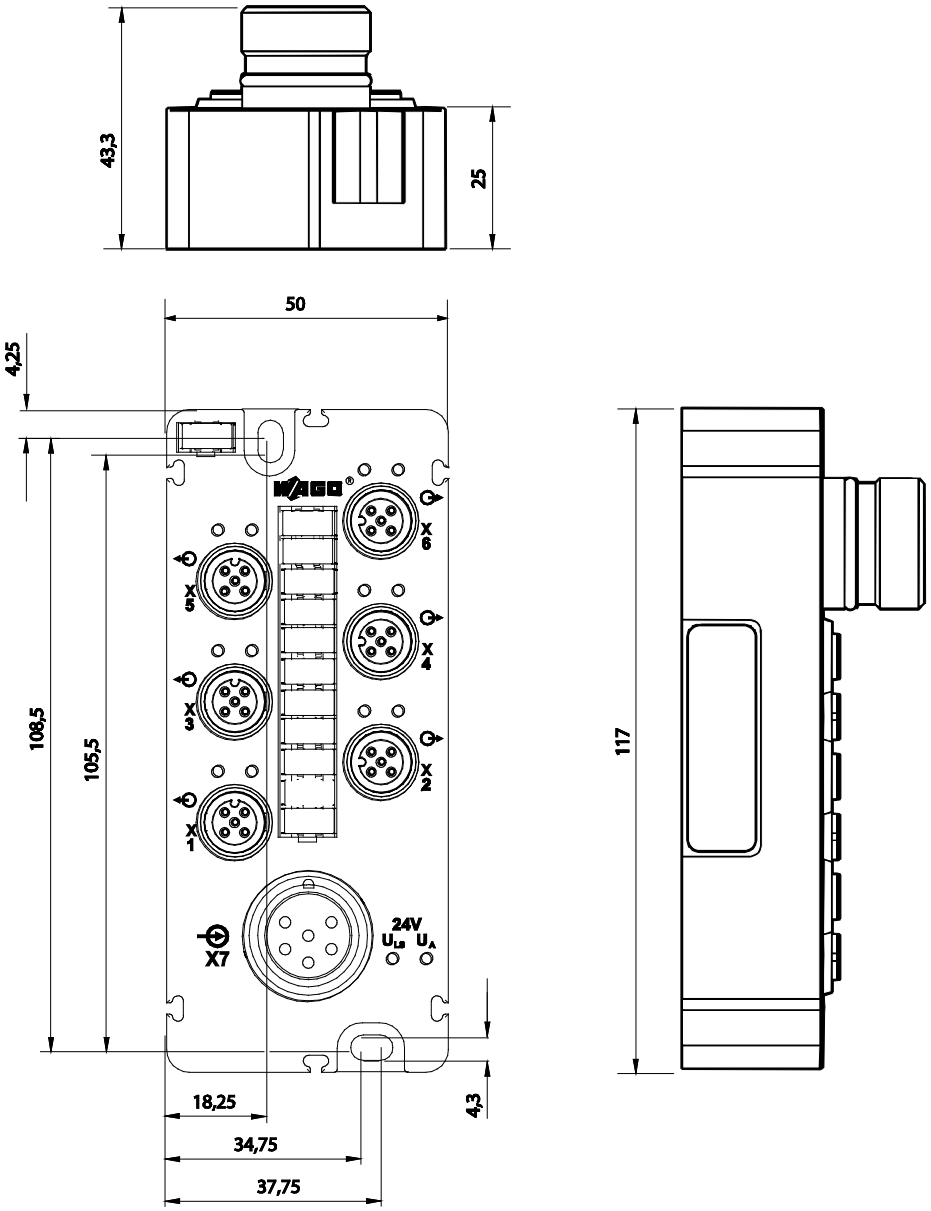



Figure 6: Dimensions of the module in millimeters

# 3.6 Technical Data

## 3.6.1 General Information

Table 8: Technical Data – General Information

| | |
|---|---|
| Width | 50 mm |
| Height | 43.3 mm |
| Lowness | 117 mm |
| Weight | Approx. 276 g |

## 3.6.2 Supply

Table 9: Technical data – Supply

| | |
|---|---|
| Connection type | M23 connector, 6 poles*<br>(max. cable cross section 2.5 $mm^2$) |
| Supply voltage<br>Logic and sensor voltage $U_{LS}$<br>Actuator voltage $U_A$ | <br>DC 24 V (-25 % … +30 %)<br>DC 24 V (-25 % … +30 %) |
| Supply current<br>Logic and sensor current $I_{LS}$<br>Actuator current $I_A$ | <br>Typically 4mA<br>Typically 4mA |
| Supply outputs<br>Number of outputs<br>Connection type<br>Current carrying capacity/connector<br>Current carrying capacity/module<br>Short circuit protection | <br>6<br>M12 connectors, A-coded, 4 poles*<br>Maximum 8 A ($U_{LS}$: 4 A, $U_A$: 4 A)*<br>Maximum 24 A ($U_{LS}$: 8 A)*, ($U_A$: 16 A)*<br>No |

* Derating should be observed!

## 3.6.3 Isolation

Table 10: Technical data – Isolation

| | |
|---|---|
| $U_{LS}$ - $U_A$ | 500 V DC |

## 3.7 Approvals

| | | |
|---|---|---|
| CE | Conformity Marking | |
| cULus | cULus | UL508 |

# 4 Mounting

The module can be fastened directly to your system using screws. It can also be mounted on a carrier rail using an adapter or fastened to a profile rail using a surface mounting profile.

For mounting on a flat surface, WAGO offers spacers to assist in the mounting process that can be inserted between the 767 Series components. This helps by providing sufficient mounting distance for compact direct mounting, as well as eliminating gaps where dirt could accumulate. A cable tie can be fastened through each of two mounts in the spacer, which together serve to relieve strain from the sensor or actuator cables.

## 4.1 Information on Mounting

The following information shall always be observed:

- Disconnect the power supply from the system before you start with installation.
- The maximum diameter of the drill hole of the module's mounting holes is not to exceed 4 mm. Otherwise, there may be no full contact with the module's PE socket and a problem-free shielding is not possible.
- To protect the module from tensile forces that may arise, do not bridge spaces with it.
- Screw the module down only on flat contact surfaces to protect it from warping.
- Ensure that the connectors are not soiled during installation. Dirt and other such substances damage the contacts, allowing corrosion to develop.
- To avoid damaging the module, do not mount it in shear areas of moving devices.
- Arrange for a sufficient potential equalization in your system.
- Use all mounting holes to mount the module to your system.

## 4.2 Tools and Accessories Required for Mounting

Depending on the mounting type, the following tools are required for installation:

- A screwdriver for M4 fixing screws
- Drilling machine to pre-drill the mounting holes for the module to be mounted to the system and, if applicable, for the imperforated carrier rail.
- M4 thread cutter (bottoming tap or hand tap set)

The WAGO accessories listed below are required for mounting. The associated item numbers can also be found in the 767 Series fieldbus manuals, in the "Accessories" section. Select the manual appropriate to the fieldbus you are using.

- Carrier rail adapter, including fixing screws and perforated or imperforated carrier rails (DIN rail 35 x 7.5 or DIN rail 35 x 15) according to EN 60715, also available from WAGO.

  or

- Profile adapter, including fixing screws
- Spacer (optional)

Two M4x12 screws are required for direct mounting of the module. The length of the screw shaft is to be selected according to the mounting type.

**Bore measurements**

When fastening the 767 Series components without a threaded hole, the clearance hole must not be wider than 4 mm.

## 4.3 Direct Mounting on Your System

Mount the module directly on a level surface of your system, without using WAGO accessories. Direct mounting of the module is to be carried out as follows:

1. Disconnect the power supply from those devices on which you wish to mount the module.

2. Mark the drill holes using the hole drilling template printed on the packaging. You can also hold the module in the desired position and mark the drill holes. Ensure that there is sufficient space around the 767 Series components to enable you to connect all cable without problems.

**Note**

**Direct Mounting**
We recommend using WAGO spacers for compact direct mounting. If these are used, the resulting additional distance from the second 767 Series component is to be noted. See section "Mounting the Module" > "Mounting the Spacer in the Case of Compact Arrangement".

3. Fasten the module with two M4x12 screws via the two mounting holes.

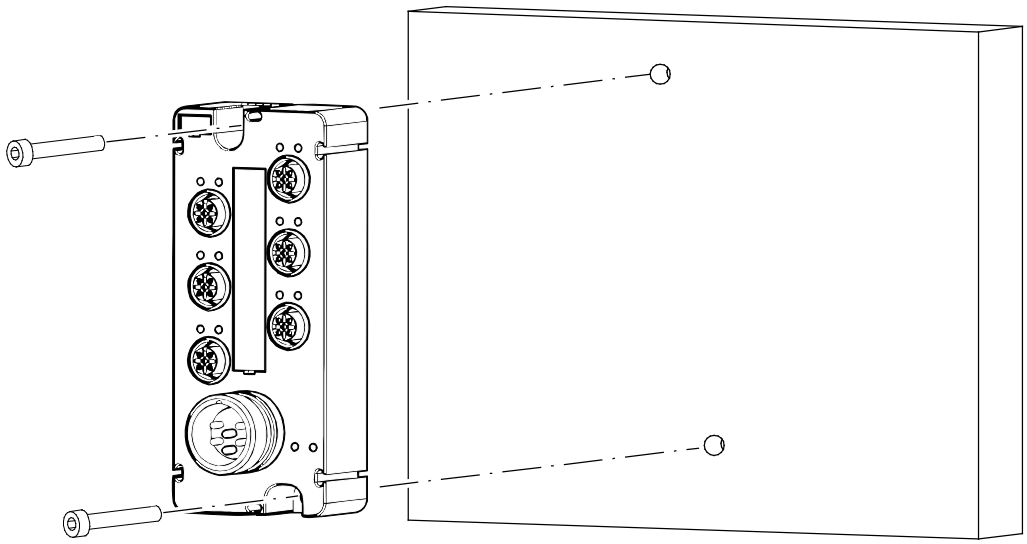


Figure 7: Mounting the module to the system

# 4.4 Mounting on a Carrier Rail (only with WAGO Accessories)

## 4.4.1 Fastening the Carrier Rail Adapter to the Module

A carrier rail adapter is required to mount the module on carrier rails.

Screw together the module and carrier rail adapter using the M4 threaded screws provided, as shown in the figure below.

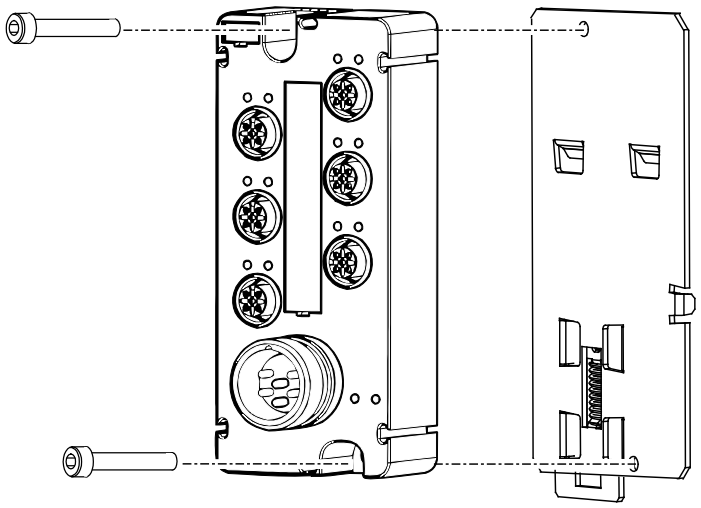


Figure 8: Fastening to the carrier rail adapter

### 4.4.2 Fastening the Module with Carrier Rail Adapter to a Carrier Rail

In order to provide a clear representation, the carrier rail adapter in the figure below is shown without module.

When mounting the module to a carrier rail (DIN rail 35 x 7.5) using a carrier rail adapter, proceed as follows:

1. Disconnect the power supply from those devices on which you wish to mount the module.
2. Set the module onto the edge of the carrier rail (51) with the two notches (50).
3. Press the undersurface against the lower carrier rail edge until the latch (52) locks in place.

**Note**

**Use of end stops**
When mounting the rail vertically or if shock or vibration loading should occur, the use of end stops (item no.: 249-116 or 249-117) for stabilization is required. For more information, see the "Technical Data" section in the manual "WAGO SPEEDWAY 767, System Description and Notes."

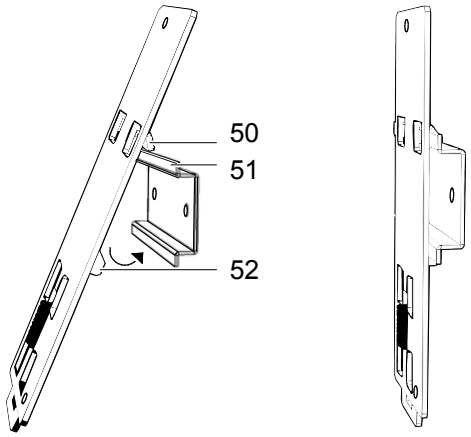



Figure 9: Mounting the carrier rail adapter (exemplary)

# 4.5 Mounting on a Profile Rail (only with WAGO Accessories)

## 4.5.1 Fastening the Profile Adapter to the Module

Aside from using carrier rail adapters to fasten the module, you also have the option to fasten it to a profile rail using the profile adapter and nuts, provided that this mounting type is supported by your system. You are to supply the necessary nuts.

Screw together the module and the profile adapter using the M4 threaded screws provided, as shown in the following figure.

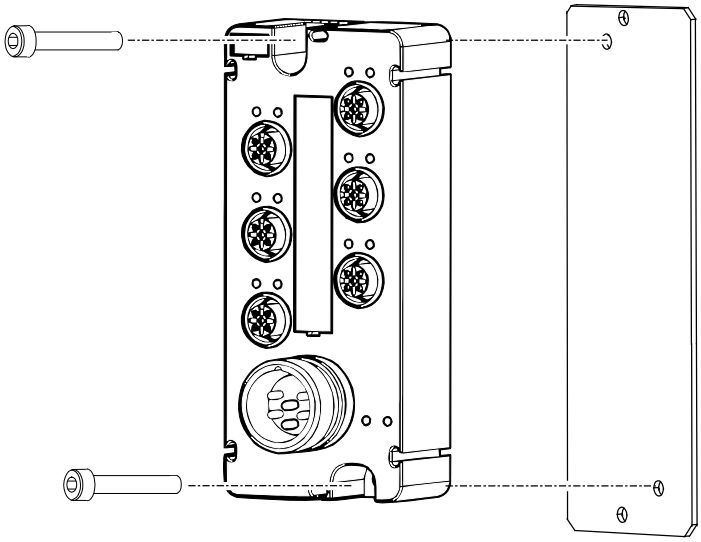


Figure 10: Fastening to the profile adapter

### 4.5.2 Fastening the Module with Profile Adapter to a Profile Rail

To fasten the module to a profile rail of your system, two nuts are required with one screw each (length of screw threads must be compatible with your system).

1. Disconnect the power supply from those devices on which you wish to mount the module.

2. Insert the two screws into the holes above and beneath the fastened module on the profile adapter.

3. Fasten an appropriate nut on each of these screws.

4. Insert the profile adapter with the attached module into the profile rail of your system. Position it and tighten the screws.

## 4.6 Marking and Replacing the Marking Spaces

The module marker card (10) and marking strip (12) are attached when delivered. The protective cover is to be removed when labeling the marking strip. To do this, proceed as follows:

1. Press the slot screwdriver (maximum slot width: 3mm) into the small opening under the marking strip cover (12) and lever it up.
2. Remove the marking strip cover.
3. Mark the marking strip with a waterproof pen.
4. Reinsert the marking strip cover and press it firmly in place.

If the module's marker card (10) must be replaced, proceed in accordance with the step sequence described previously. New module marker cards can be obtained through WAGO.

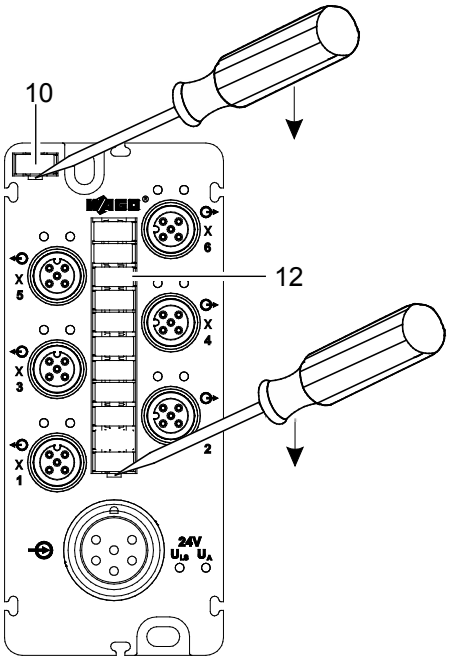



Figure 11: Replacing the marking spaces

## 4.7 Mounting the Spacer in the Case of Compact Arrangement

By using the spacer, a sufficient mounting distance can be achieved when directly mounting the 767 Series components, and gaps can be eliminated where otherwise dirt and other substances could accumulate. In addition, it is possible to optimize the cable routing. For this purpose, two fastening lugs each are included on the spacer for cable ties.

1. Disconnect the power supply from those devices on which you wish to mount the module.

2. The spacer can only be inserted into the appropriate openings of the module from the bottom. To bind both components, place the module on the spacer or push the spacer from the bottom into the module.

3. Fasten the attached components on a flat surface by fastening the module to the grounded frame of your system or to another grounding point with two M4 screws via the mounting holes.

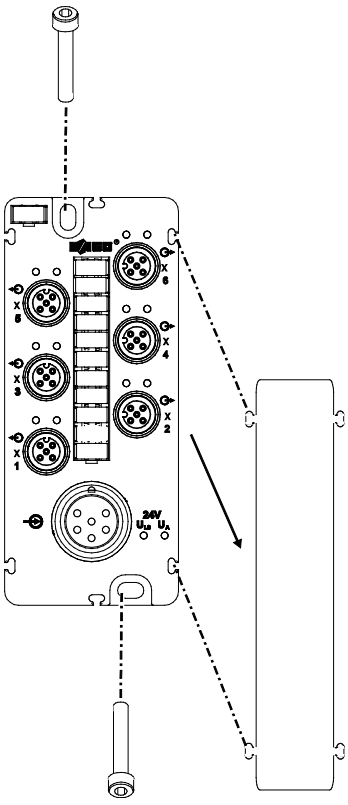


Figure 12: Attaching a spacer to an module

4. When attaching 767 Series component, only one 767 component connected with a spacer can be attached and screwed on to the preceding component due to the mounting direction. The last 767 component is fastened without a spacer.

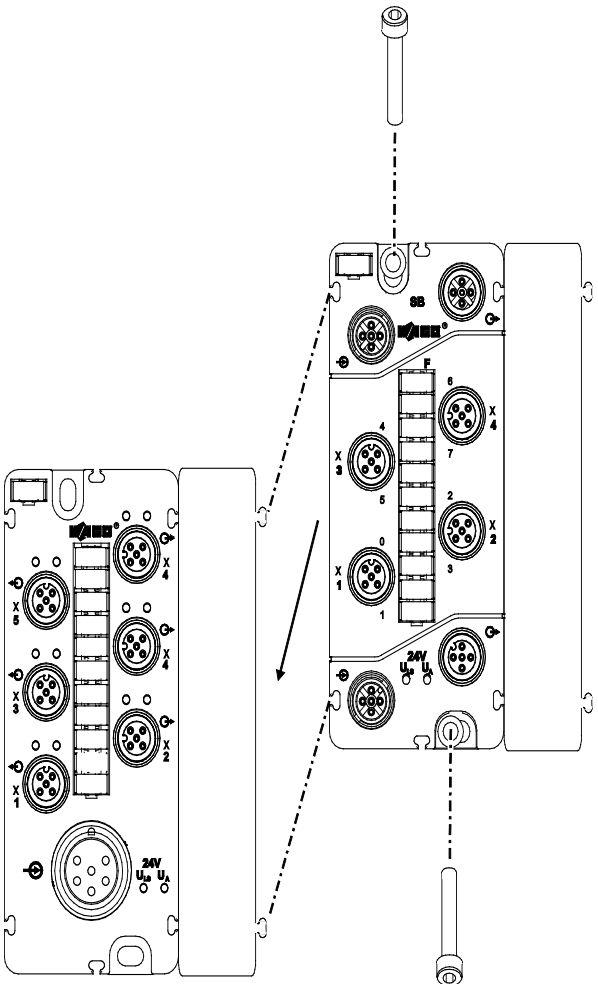


Figure 13: Attaching another module with a spacer

# 5 Connecting Data and Supply Cables

## 5.1 Notes

**DANGER**

**Electric voltage!**
Operate the 767 Series components exclusively with 24 VDC PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) voltage sources. Failure to comply may result in electric shock.

**NOTICE**

**The highest current carrying capacity of the M23 supply contacts is 24A!**
The supply lines of the M23 supply input shall only be charged with a maximum of 8A for $U_{LS}$ and 16A for $U_A$. If the maximum current carrying capacity is exceeded, both the connectors and components will be damaged. The module supply input is not automatically monitored for overload.

**NOTICE**

**The highest current carrying capacity of the M12 supply contacts is 4A!**
Supply lines $U_{LS}$ and $U_A$ of the M12 supply outputs shall each be charged with a maximum of 4A. If the maximum current carrying capacity is exceeded, both the connectors and components will be damaged. The module supply output is not automatically monitored for overload.

**NOTICE**

**Exposed connections!**
If connections have not been closed with protective caps, liquid or dirt can penetrate the components of the 767 Series module and ruin it. Therefore, close all unnecessary connections with protective caps, which must be ordered separately, in order to maintain the IP67 degree of protection. (See "Accessories" section of the fieldbus coupler/controller manual.)

- The connectors must be disconnected from the power supply when screws are tightened.
- Tighten the connectors by hand. To achieve the required torque (see below) for the connector, use the torque wrench with the order number 206-701. Using other mechanical aids can lead to stripping the threads, which will require replacement of the module.

  **Tightening torques for the connectors:**
  Supply outputs, M12: 1.0 Nm

- For transmission of the power supply, use only pre-assembled WAGO power supply cables, so the specified characteristics of the technical data can be achieved.
- Observe the exact positioning (coding) between plug and socket.
- Keep all cables a sufficient distance away from electromagnetic sources of interference in order to maintain a high level of interference resistance of the 767 system against electromagnetic emissions.
- Observe the minimum bending radiuses of the WAGO system cable. For more information, see the technical data at www.wago.com.
- When laying all cable, ensure that you do not lay it in shear areas of moving machine parts.
- Observe the correct layout of the potential equalization.

## 5.2 Required Accessories

The WAGO accessories listed below are required for connecting the supply cable. The associated item numbers can also be found in the fieldbus manuals for 767 Series, in the "Accessories" section. Select the manual appropriate to the 767 Series fieldbus you are using.

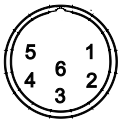
- Supply cable with M12 connectors, IP 67, pre-assembled on both ends
- M23 connectors

## 5.3 Connecting M23 Supply Cable

The M23 supply cable with a maximum cross section of 2.5 mm² provides the infeed of $U_{LS}$ and $U_A$ supply voltages.

The power supply cable must be self-assembled. This requires an M23 connector with IP 67 degree of protection. The following table outlines the connection assignment of the supply input:

Table 11: Supply input: connection assignment

| Connection | Contact | Description |
|---|---|---|
| IN   | 1 | 24 V $U_{LS}$ |
| | 2 | 0 V $U_{LS}$ |
| | 3 | Not assigned |
| | 4 | 24 V $U_A$ |
| | 5 | 0 V $U_A$ |
| | 6 | Not assigned |

**NOTICE**

**The highest current carrying capacity of the M23 supply contacts is 24A!**
The supply lines of the M23 supply input shall only be charged with a maximum of 8A for $U_{LS}$ and 16A for $U_A$. If the maximum current carrying capacity is exceeded, both the connectors and components will be damaged. The module supply input is not automatically monitored for overload.

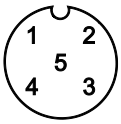
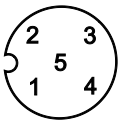
## 5.4 Connecting M12 Supply Cable

The M12 supply cable with maximum 0.75 mm² cross section supplies 767 Series components (individual and/or group supply)

**Requirement:**
The WAGO supply cables pre-assembled on both ends must be available (K1 and K2 in the figure on the next page).

The following table outlines the assignment of the supply connections:

Table 12: Supply outputs: connection assignment

| Connection | | Contact | Description |
|---|---|---|---|
| OUT   | OUT   | 1 | 24V $U_{LS}$ |
| | | 2 | 24V $U_A$ |
| | | 3 | 0V $U_{LS}$ |
| | | 4 | 0V $U_A$ |
| | | 5 | Not assigned |

**NOTICE**

**The highest current carrying capacity of the M12 supply contacts is 4A!**
Supply lines $U_{LS}$ and $U_A$ of the M12 supply outputs shall each be charged with a maximum of 4A. If the maximum current carrying capacity is exceeded, both the connectors and components will be damaged. The module supply output is not automatically monitored for overload.

To connect the supply cable to the module and 767 Series components, proceed as follows:

1. Disconnect the power supply from those devices on which you have mounted the module.

2. Connect the M23 supply cable to the module by plugging the supply cable's socket into the "IN" port ⊖ (6).

3. Tighten the socket using the knurled-head screws.

4. Connect the M12 supply transmission cable (K1) to one of the supply outputs ⊕ (1) on the module and to the "IN" port ⊖ (5) on a 767 Series component. For example, use the module to supply power to a group consisting of two I/O modules. Then connect the power supply cables (K1, K2) to the associated inputs and outputs, as shown in the following figure.

5. Attach the sockets and plugs of the cables and tighten them using the knurled-head screws.

6. Screw a protective cap on all unused ports to ensure that IP 67 degree of protection is provided.

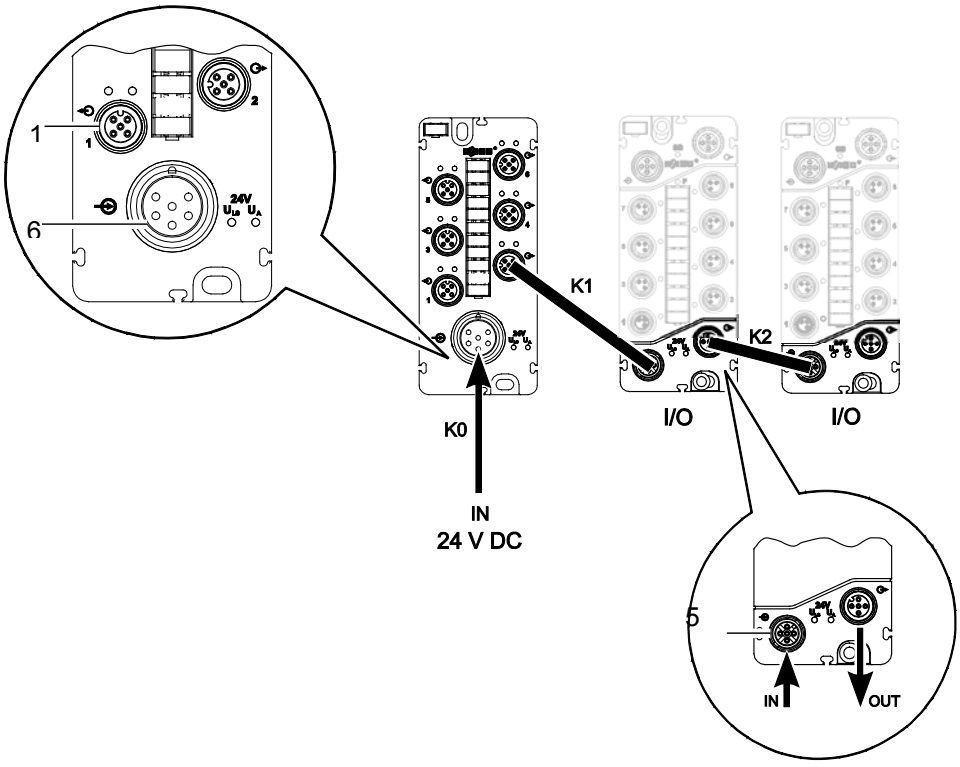



Figure 14: Supply cable connected to module and I/O modules

# 6 Commissioning

**NOTICE**

**Exposed connections!**
If connections have not been closed with protective caps, liquid or dirt can penetrate the components of the 767 Series module and ruin it. Therefore, close all unnecessary connections with protective caps, which must be ordered separately, in order to maintain the IP67 degree of protection. (See "Accessories" section of the fieldbus coupler/controller manual.)

To supply power to the module, attach the self-assembled power supply cable to the M23 connector. Information on starting the 767 Series node can be found in the 767 Series fieldbus manuals. Select the manual appropriate to the fieldbus you are using.

# 7 Diagnostics

## 7.1 LED Signaling

The following table lists the states that are indicated via LEDs. Information regarding remedies of certain causes is also provided.

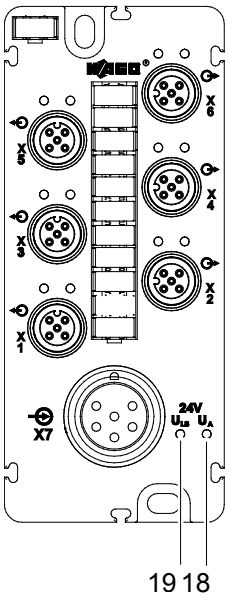



Figure 15: LEDs, which display operational messages

Table 13: Signal states $U_A$ and $U_{LS}$

| Pos. | LED | Color | Cause | Remedy/Information |
|---|---|---|---|---|
| 18 | $U_A$ | Green | Actuator supply $U_A$ is present. | - |
| | | Off | Actuator supply $U_A$ is not present. | Connect the power supply ($U_A$) and check the voltage level, if applicable. |
| 19 | $U_{LS}$ | Green | Logic and sensor supply $U_{LS}$ is present. | - |
| | | Off | Logic and sensor supply $U_{LS}$ is not present. | Connect the power supply ($U_{LS}$) and check the voltage level, if applicable. |

# 8 Service

This section contains information on maintenance and service.

## 8.1 Replacing the Module

To replace a module, e.g., to change variants, proceed as described follow.

### 8.1.1 Disconnecting the Cables

Before removing the connectors, clean the module to ensure that no dirt or other material comes in contact with the connections. This can lead to damage of the contacts.

To unplug the cables, proceed as follows:

1. Disconnect the power supply from those devices on which you have mounted the module.

**⚠ CAUTION**

**Hot connection sockets!**
Even when taking into account derating, high surface temperatures on the metallic connection sockets and on the enclosure can arise during operation. If the 767 Series component has been in operation, allow it to cool off before moving it.

2. Unscrew all screw connections and remove the cables.

### 8.1.2 Removing the Module from Your System

To remove the module from your system's framework, proceed as follows:

1. Disconnect the power supply from those devices on which you have mounted the module.

2. Release the module from your system by unscrewing the M4 screws.

### 8.1.3 Removing the Module from the Carrier Rail

In order to keep the representation unambiguous, the carrier rail adapter in the following figure (B, C) is shown without module.

If the module is mounted on a carrier rail, proceed with the removal as follows:

1. Disconnect the power supply from those devices on which you have mounted the module.

2. To remove the module, press down the release actuator of the carrier rail adapter using a slot screwdriver (B) and remove it from the carrier rail (C).

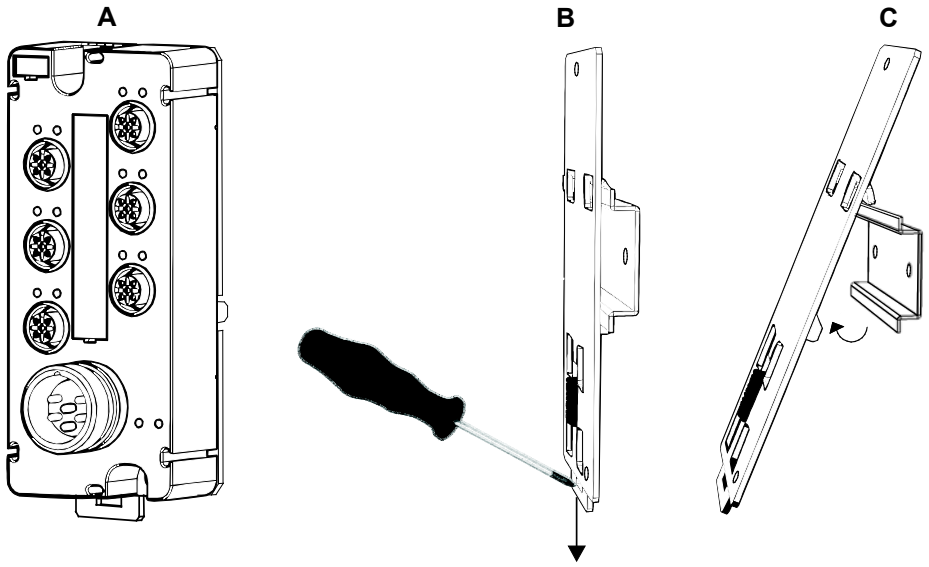



Figure 16: Removing the module (with the carrier rail adapter) from the carrier rail

### 8.1.4 Removing the Module from the Profile Adapter

If the module is mounted on a profile adapter, proceed with the removal as follows:

1. Disconnect the power supply from that part of the system on which you have mounted the module before attempting to remove it.

2. Unscrew the screws on which the nuts are fastened and remove the module from the profile rail of your system.

3. Unscrew the screws that connect the module with the profile adapter.

### 8.1.5 Connecting the Module

To connect the module, proceed as described in Sections 4 through 6. If necessary, the parameters of the previous module are transferred to the new module, depending on the type of fieldbus coupler being used. For more information, see section "Parameterizing" > "Automatic Storage of System Parameters".

## 8.2 Disposal

Do not dispose of the 767 Series components in the household waste; observe the laws which apply to them. You can also contact a certified waste management company.

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