SEW EURODRIVE

Manual

CAB11A Bluetooth® Module

Edition 03/2024

31958230/EN

Table of Contents

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1 General information

1.1 About this documentation

The documentation at hand is the original.

This documentation is an integral part of the product. The documentation is intended for all employees who perform work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the systems and their operation as well as persons who work on the product independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation or if you require further information, contact SEW-EURODRIVE.

1.2 Other applicable documentation

Refer to the corresponding documentation for all other components.

Always use the latest edition of the documentation and the software.

The SEW-EURODRIVE website (www.sew-eurodrive.com) provides a wide selection of documents for download in various languages. If required, you can also order printed and bound copies of the documentation from SEW-EURODRIVE.

1.3 Structure of the safety notes

1.3.1 Meaning of signal words

The following table shows the graduation and meaning of the signal words in the safety notes.

Signal word	Meaning	Consequences if not observed
⚠ **DANGER**	Imminent danger	Death or severe injuries
⚠ **WARNING**	Possibly dangerous situation	Death or severe injuries
⚠ **CAUTION**	Possibly dangerous situation	Minor injuries
NOTICE	Possible damage to property	Damage to the product or its environment
INFORMATION	Useful information or tip: Simplifies handling of the product.	

1.3.2 Structure of section-related safety notes

Section-related safety notes do not apply to a specific action but to several actions pertaining to one subject. The hazard symbols used either indicate a general hazard or a specific hazard.

This is the formal structure of a safety note for a specific section:

SIGNAL WORD

Type and source of hazard.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the hazard.

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1.3.3 Meaning of the hazard symbols

The hazard symbols in the safety notes have the following meaning:

Hazard symbol	Meaning
	General hazard

1.3.4 Structure of embedded safety notes

Embedded safety notes are directly integrated into the instructions just before the description of the dangerous step.

This is the formal structure of an embedded safety note:

⚠ **SIGNAL WORD!** Type and source of danger. Possible consequence(s) if disregarded. Measure(s) to prevent danger.

1.4 Decimal separator in numerical values

In this document, a period is used to indicate the decimal separator.

Example: 30.5 kg

1.5 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the product.

1.6 Recycling, reprocessing, reuse

SEW-EURODRIVE GmbH & Co KG strives to use as few new natural resources as possible in the production of its products. An important aspect of this is the circular economy with the recycling of materials as well as the inspection and/or reprocessing of returned components and their reuse in new products. SEW-EURODRIVE GmbH & Co KG only uses these processes if the resulting materials and components are of the same quality as new parts.

1.7 Product names and trademarks

The product names mentioned in this documentation are trademarks or registered trademarks of the respective titleholders.

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1.8 Copyright notice

1.9 Short designation

The following short designations are used in this documentation:

Short designation	Description
Module	CAB11A Bluetooth® module
Mobile device	Smartphone or tablet
Inverter	Inverters from the MOVI-C® modular automation system
Bluetooth® (BLE)	Bluetooth® Low Energy
NFC	Near field communication
QR code	Quick response code/2D barcode

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2 Safety notes

2.1 Preliminary information

The following general safety notes serve the purpose of preventing injury to persons and damage to property. They primarily apply to the use of products described in this documentation. If you use additional components, also observe the relevant warning and safety notes.

2.2 Duties of the user

As the user, you must ensure that the basic safety notes are observed and complied with. Make sure that persons responsible for the machinery and its operation as well as persons who work on the device independently have read through the documentation carefully and understood it.

As the user, you must ensure that all of the work listed in the following is carried out only by qualified specialists:

- Setup and installation
- Installation and connection
- Startup
- Maintenance and repairs
- Shutdown
- Disassembly

Ensure that the persons who work on the product pay attention to the following regulations, conditions, documentation, and information:

- The national and regional regulations governing safety and the prevention of accidents
- Product safety label on the product
- All other associated project planning documents, installation and startup instructions, as well as wiring diagrams
- Do not assemble, install or operate damaged products
- All system-specific specifications and regulations

Ensure that systems in which the product is installed are equipped with additional monitoring and protection devices. Observe the applicable safety regulations and legislation governing technical work equipment and accident prevention regulations.

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2.3 Target group

Specialist for mechanical work

Any mechanical work may be performed only by adequately qualified specialists. Specialists in the context of this documentation are persons who are familiar with the design, mechanical installation, troubleshooting, and maintenance of the product, and who possess the following qualifications:

- Qualifications in the field of mechanics in accordance with the national regulations
- Familiarity with this documentation

Specialist for electrotechnical work

Any electrotechnical work may be performed only by electrically skilled persons with a suitable education. Electrically skilled persons in the context of this documentation are persons who are familiar with electrical installation, startup, troubleshooting, and maintenance of the product, and who possess the following qualifications:

- Qualifications in the field of electrical engineering in accordance with the national regulations
- Familiarity with this documentation

Additional qualifications

In addition to that, these persons must be familiar with the valid safety regulations and laws, as well as with the requirements of the standards, directives, and laws specified in this documentation.

The persons must have the express authorization of the company to operate, program, parameterize, label, and ground devices, systems, and circuits in accordance with the standards of safety technology.

Instructed persons

All work in the areas of transport, storage, installation, operation and waste disposal may only be carried out by persons who are trained and instructed appropriately. These instructions must enable the persons to carry out the required activities and work steps safely and in accordance with regulations.

2.4 IT security

2.4.1 Contact

If you need support with the configuration, contact SEW-EURODRIVE Service. You can obtain information about current security-related issues by e-mail or on the Product Security Management website. There you will find various contact options for reporting security-related problems.

2.4.2 IT security of the product

Wireless connections (e.g. Bluetooth® (BLE)) are more susceptible to IT security attacks than wired connections. The 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 is therefore increased with wireless connections. The product offers various safety mechanisms to minimize the hazards described.

Password

The user of the SEW IoT app authenticates himself to the product with the password. This ensures that only they can communicate with the inverter connected to the product.

Note the following with regard to the password:

- Change the preset password to a password of your own choosing because the preset password can be read out via the NFC interface or QR code.

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- Use a password that is as complex and/or long as possible.
- If possible, use lowercase and uppercase letters as well as numbers and special characters in your password.
- Do not use words or parts of words from a dictionary as a password.
- Make sure that the password remains secret.
- Only share the password with persons who are permitted access to the product and the connected inverter.
- Secure the password at a location that only you have access to.
- We recommend that you save the password together with a user account in the SEW cloud. In this case, the password can be reset or restored. If you forget your password, you can no longer establish a connection to the product.

Firmware update

The SEW IoT app checks the firmware version of the product when establishing a connection. If there is a newer version of the firmware, you will be advised to perform an update. The firmware must be updated to eliminate security vulnerabilities and to extend the product's range of functions.

2.4.3 IT security of the environment

The IT security of the product is only guaranteed when used in an environment secured by defense-in-depth strategies.

Ensure that clear responsibility for security is guaranteed during operation. SEW-EURODRIVE recommends an IT security management system in accordance with ISO/IEC 27001 and ISO/IEC 62443-2-4.

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2.5 Designated use

The device is installed in an inverter from the MOVI-C® modular automation system with a dedicated slot for keypads and is used to operate the inverter.

In the case of installation in electrical systems or machines, startup of the device is prohibited until it has been determined that the machine meets the requirements stipulated in the local laws and directives. For Europe, the Machinery Directive 2006/42/EU as well as the EMC Directive 2014/30/EU apply, for example. Observe EN 60204-1 (Safety of machinery – Electrical equipment of machines). The device meets the requirements stipulated in the Low Voltage Directive 2014/35/EU.

Technical data and information on the connection conditions are provided on the nameplate and in chapter "Technical data" in the documentation. Always comply with the data and conditions.

Unintended or improper use of the product may result in severe injury to persons and damage to property.

If you also use other components, also pay attention to the technical data and conditions that apply to them.

2.6 Transport

Inspect the shipment for damage as soon as you receive the delivery. Inform the shipping company immediately about any damage. If the product or the packaging is damaged, do not assemble, install, connect, or start up the product. If the packaging is damaged, the product itself may also be damaged.

Observe the following notes when transporting the device:

- Ensure that the product is not subject to mechanical impact.

If necessary, use suitable, adequately dimensioned transport aids.

Observe the notes on the climatic conditions in accordance with chapter "Technical data" in the corresponding product manual.

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3 Device structure

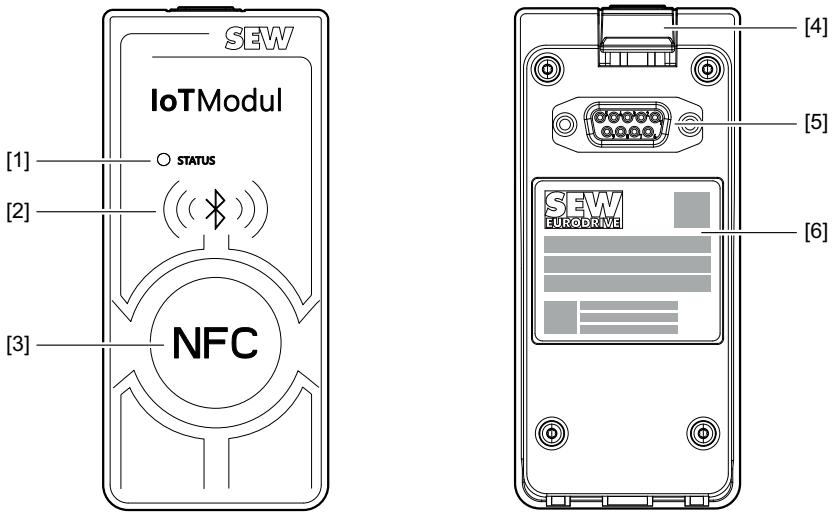
3.1 CAB11A Bluetooth® module

The CAB11A Bluetooth® module serves as an interface between an inverter from the MOVI-C® modular automation system and a mobile device (e.g. a smartphone or tablet). The interface allows you to parameterize the inverter using the SEW IoT app installed on the mobile device.

The module can either be plugged directly onto the inverter inside the control cabinet or operated outside the control cabinet using one of the available installation frames (the maximum cable length for the installation frames is 3 m). In both cases, the connection is established via the D-sub connector of the module.

To establish the first connection, the module must be registered in the SEW IoT app installed on the mobile device. This registration can be performed via NFC interface, QR code scan, or manual data entry. Following this initial registration, the Bluetooth® (BLE) interface is used for the connection. Only one mobile device can connect to only one module.

The following figure shows the components of the module:



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[1] "Status LED" (→ 🗎 13)
[2] Bluetooth® (BLE) interface
[3] NFC interface
[4] Unlatch button
[5] D-sub connector
[6] "Nameplate" (→ 🗎 13)

3.2 Compatibility

The module is compatible with all devices from the MOVI-C® modular automation system with a D-sub connector for connecting keypads. The module can also be operated with other devices using the available installation frames. For more information, refer to the keypad overview on the SEW-EURODRIVE website.

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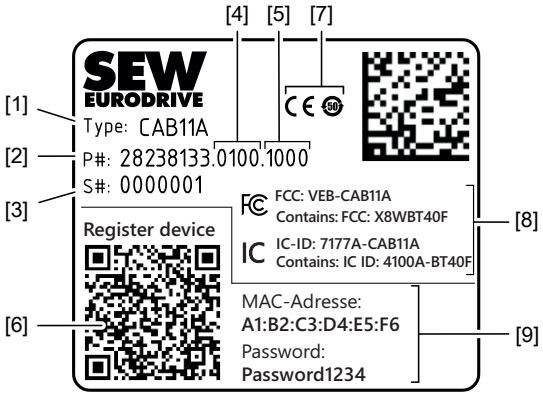
3.3 Nameplate

The nameplate on the back of the device contains the following information:



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[1] Type designation
[2] Part number
[3] Serial number
[4] Firmware version at delivery (xxxx = firmware xx.xx)
[5] Hardware version
[6] QR code for registering the device
[7] "Markings" (→ 🗎 18)
[8] "Approval" (→ 🗎 19)
[9] Data for registration via manual data entry

3.4 Communication interfaces

Bluetooth® (BLE) interface

- Communication between the SEW IoT app and the inverter connected to the module
- Communication between the SEW IoT app and the module
- Data transmission during updates of the module firmware

NFC interface

- Reading out of the information required to establish a connection via Bluetooth® (BLE) with the SEW IoT App

CAN interface (D-sub connector)

- Communication between the module and the connected inverter

3.5 Status LED

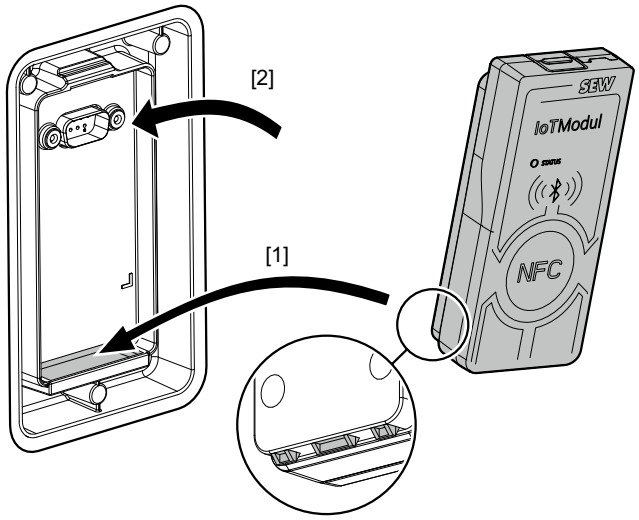
Status	Meaning
Red	Error
Yellow	No Bluetooth® (BLE) connection (offline)
Yellow, flashing	Firmware update
Green, flashing 5×	Establishing Bluetooth® (BLE) connection
Green	Bluetooth® (BLE) connection active

4 Mounting

4.1 Mounting the module

To mount the module, proceed as follows:

1. Guide the module to the installation location with the underside tilted forwards and place the retaining lugs on the lower part of the module into the recesses provided for this purpose.
2. Push the top of the module backwards so that the D-sub connector plugs into the D-sub socket and the locking element clicks audibly into place.



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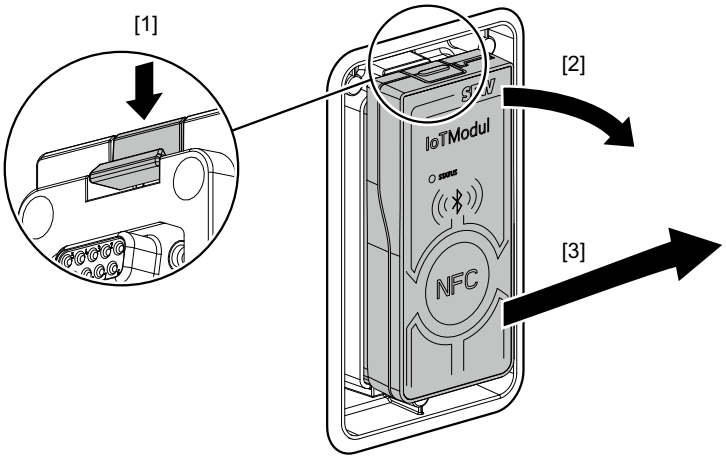
4.2 Removing the module

To remove the module, proceed as follows:

1. Press and hold the unlatch button of the module.
2. Tilt the top of the module backwards.
3. Remove the module from the installation location by pulling it upwards and out towards you.



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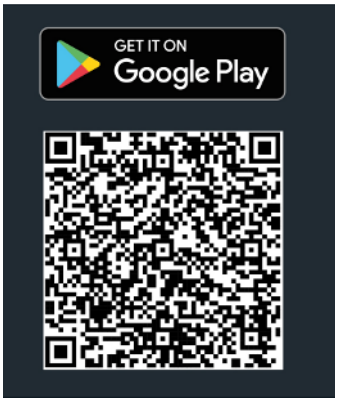
5 Startup

5.1 Installing the SEW IoT app

Install the SEW IoT app from the Apple App Store or the Goggle Play Store on the mobile device that you want to connect to the module. To do so, search for "SEW IoT App" in the respective store or scan one of the following QR codes.



5.2 Registering the device

To establish a connection, the module must be registered in the SEW IoT app installed on the mobile device. This registration can be performed via NFC interface, QR code scan, or manual data entry. Following this registration, the Bluetooth ® (BLE) interface is used for the connection.

The following instructions summarize the essential steps for registering the module. For more detailed information on registering and operating the SEW IoT app, refer to the corresponding documentation. To display this documentation on the mobile device that you want to connect to the module, scan the QR code on the back of the module or the NFC tag on the front of the module. This will take you to the following address with the current documentation of the SEW IoT app:

https://iotapp.sew-eurodrive.com/#/identification/manual

5.2.1 Via NFC interface

✓ The Bluetooth® (BLE) interface of the mobile terminal is activated.

1. Install the module in the installation location.
2. Switch on the inverter.
3. Activate the NFC interface of the mobile device.
4. Open the SEW IoT app on the mobile device.
5. Select the NFC scan function in the SEW IoT app.
6. Hold the mobile device next to the NFC interface of the module.
7. Confirm the display of the registered device in the SEW IoT app.

⇨ The registration of the module is performed.

⇨ The SEW IoT app can communicate with the inverter.

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5.2.2 Via QR code

✓ The Bluetooth® (BLE) interface of the mobile terminal is activated.

1. Open the SEW IoT app on the mobile device.
2. Select the QR scan function in the SEW IoT app.
3. Scan the QR code on the back of the module. See "Nameplate" (→ 🗎 13).
   ⇨ The module is displayed as "registered" in the SEW IoT app.
4. Install the module in the installation location.
5. Switch on the inverter.
6. Confirm the display of the registered device in the SEW IoT app.

⇨ The registration of the module is performed.

⇨ The SEW IoT app can communicate with the inverter.

5.2.3 Via data entry

✓ The Bluetooth® (BLE) interface of the mobile terminal is activated.

1. Open the SEW IoT app on the mobile device.
2. Select the communication modules function in the SEW IoT app.
3. Use [+] to add a new communication module.
   ⇨ The required input fields for adding the communication module are displayed in the SEW IoT app.
4. Enter the data for manual registration in the input fields. The required data is printed to the right of the QR code on the module. See "Nameplate" (→ 🗎 13).
   ⇨ The module is displayed as "registered" in the SEW IoT app.
5. Install the module in the installation location.
6. Switch on the inverter.
   ⇨ The SEW IoT app asks whether the unregistered device should be displayed.
7. Confirm the display of the registered device in the SEW IoT app.

⇨ The registration of the module is performed.

⇨ The SEW IoT app can communicate with the inverter.

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6 Service

6.1 SEW-EURODRIVE Service

If you are unable to rectify a fault, contact SEW-EURODRIVE Service. For addresses, refer to www.sew-eurodrive.com.

When contacting SEW-EURODRIVE Service, always specify the following information so that our service personnel can assist you more effectively:

- Information on the nameplate (e.g. type designation, serial number, part number, product key, purchase order number)
- Brief description of the application
- Fault message on the status display
- Type of fault
- Accompanying circumstances
- Unusual events preceding the problems

6.2 Waste disposal

Dispose of the product and all parts separately in accordance with their material structure and the national regulations. Put the product through a recycling process or contact a specialist waste disposal company. If possible, divide the product into the following categories:

- Iron, steel or cast iron
- Stainless steel
- Magnets
- Aluminum
- Copper
- Electronic parts
- Plastics

The following materials are hazardous to health and the environment. These materials must be collected and disposed of separately:

- Oil and grease

  Collect used oil and grease separately according to type. Ensure that the used oil is not mixed with solvent. Dispose of used oil and grease correctly.
- Screens
- Capacitors

Waste disposal according to WEEE Directive 2012/19/EU

This product and its accessories may fall within the scope of the country-specific application of the WEEE Directive. Dispose of the product and its accessories according to the national regulations of your country.

For further information, contact the responsible SEW-EURODRIVE branch or an authorized partner of SEW-EURODRIVE.

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7 Technical data

7.1 General technical data

Technical data of the device	
Part number	28318552
Power consumption	0.25 W
Ambient temperature	Storage (EN 60721-3-1 class 1K2): -20 °C to +70 °C Operation (EN 60721-3-3 class 3K3): 0 °C to +60 °C
Degree of protection	IP20 in accordance with EN 60529
Interface to inverter	D-sub connector, 9-pole
Dimensions (L x W x H)	Without D-sub connector: 100 mm × 45 mm × 22 mm With D-sub connector: 100 mm × 45 mm × 26.5 mm
Weight	70 g

Technical data for the NFC interface	
Frequency	13.56 MHz
Range	< 10 mm
Transmission protocol	NFC Forum type 5 tag in accordance with ISO/IEC 15693

Technical data for the Bluetooth® (BLE) interface	
Frequency	2.4 GHz
Range	< 10 m (depending on EMC and installation)
Data transmission	Bluetooth® Low Energy (BLE)
Transmission protocol	Bluetooth® 5.2 in accordance with IEEE 802.15.4

7.2 Markings

The following table shows an example of the markings on the nameplate.

Mark	Definition
CE	The CE mark states compliance with the following European directives: • Low Voltage Directive 2014/35/EU • EMC Directive 2014/30/EU • Machinery Directive 2006/42/EC • Directive 2011/65/EU for limiting the use of certain hazardous substances in electrical and electronic equipment
50	The China RoHS mark indicates compliance with the directive SJ/T 11364-2014 regarding the restriction of use of certain hazardous substances in electrical and electronic equipment and its packaging.

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7.3 Approval

7.3.1 FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 0.5 cm between the radiator and your body.

Caution:

Changes or modifications not expressively approved by SEW-EURODRIVE void the user`s authority to operate the equipment.

7.3.2 IC Compliance

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d`Industrie Canada applicables aux appareils radio exempts de licence. L`exploitation est autorisée aux deux conditions suivantes :

(1) L`appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l`appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d`en compromettre le fonctionnement.

Radiation Exposure Statement (RSS-102)

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 0.5 cm between the radiator and your body.

Déclaration d'exposition aux radiations (RSS-102)

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 0.5 cm entre le radiateur et votre corps.

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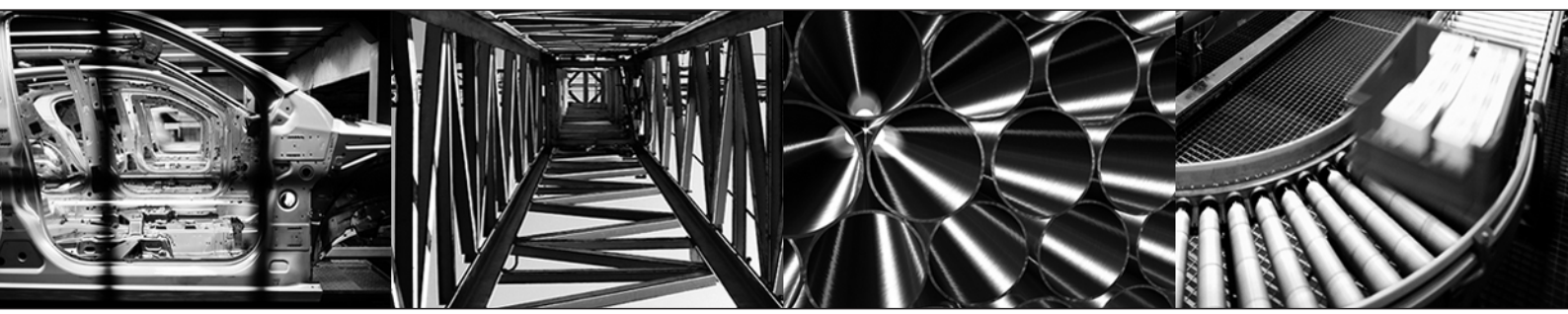

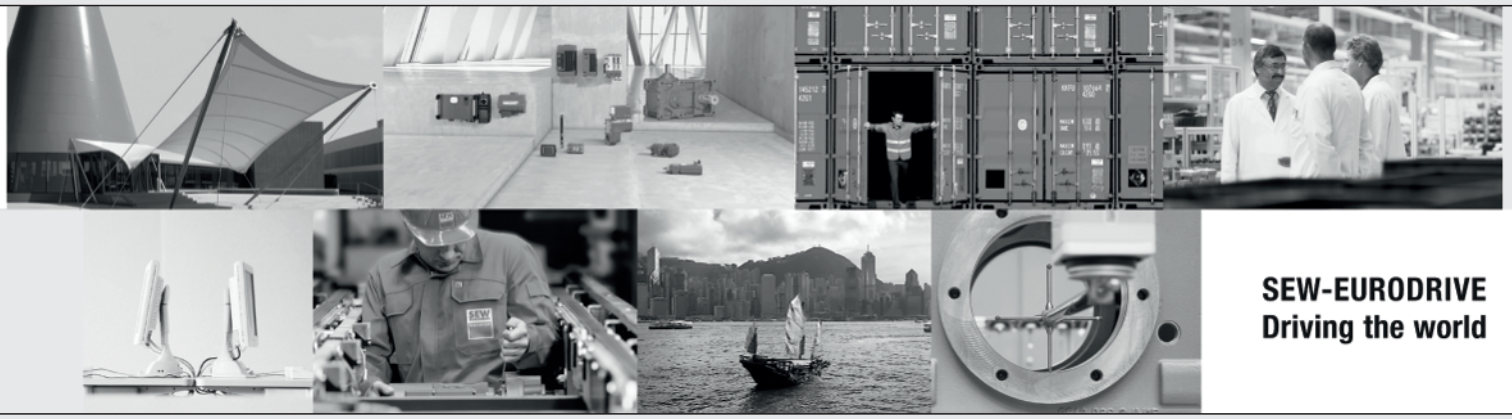

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Driving the world

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