The Drive & Control Company

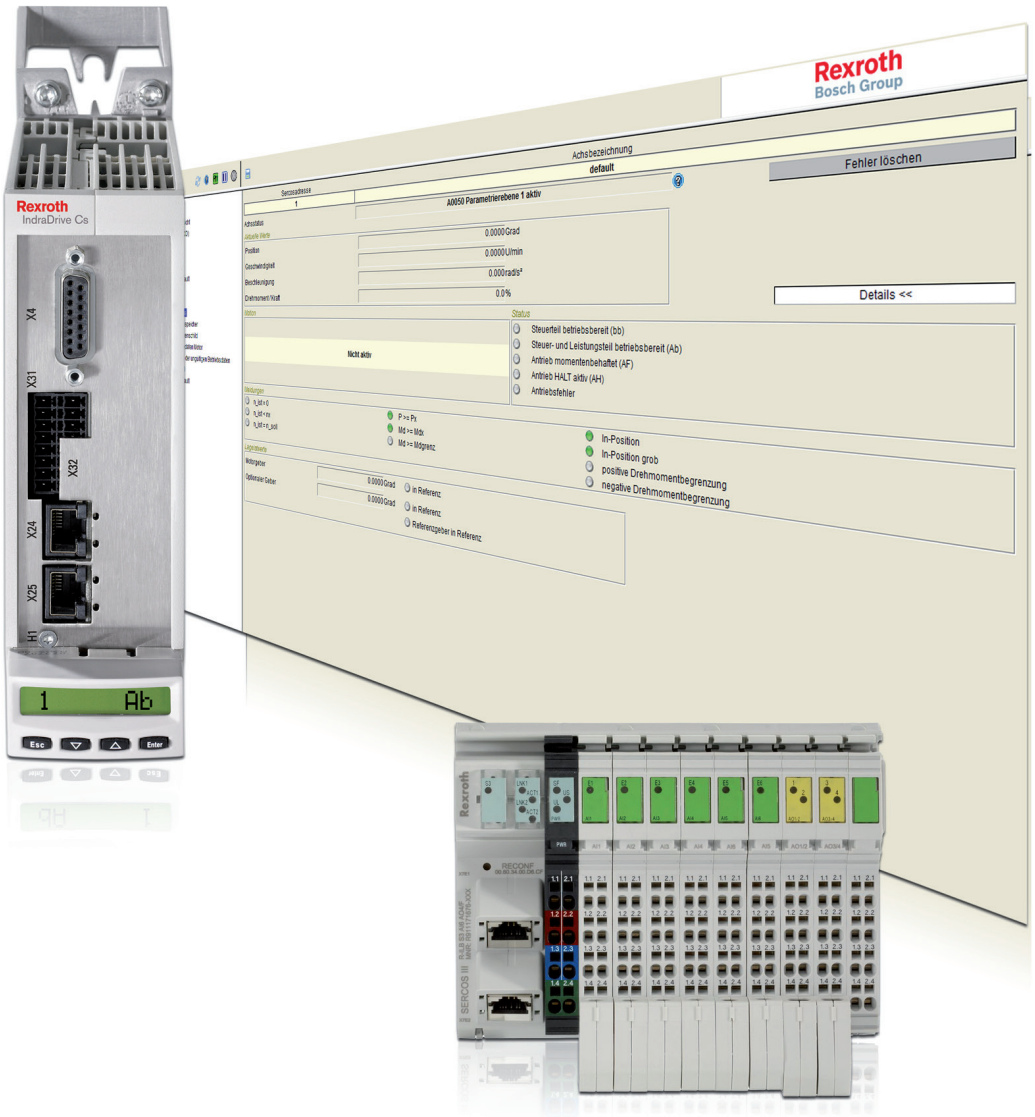
Rexroth
Bosch Group

Rexroth IndraDrive

Service Tools
IMST/IDST

Reference Book
R911342652

Edition 02



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Purpose of Documentation
This documentation describes the IndraMotion Service Tool (IMST) and the IndraDrive Service Tool (IDST). These are web-based diagnostic tools used to access a drive system via a high-speed Ethernet connection. Using these service tools OEMs, end users and service engineers can access and remotely diagnose a system from anywhere.

Record of Revision

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Note
This document has been printed on chlorine-free bleached paper.

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1 Used Symbols

Action Symbols

Use "action symbols" to commission and to operate the devices and the software.

The action symbols indicate the following:

- The symbol illustrates the action to be carried out.
- The arrow indicates the specific position the action is to be applied to.
- The numbers indicate the order in which subsequent actions have to be executed. There are six steps per screen shot at most.

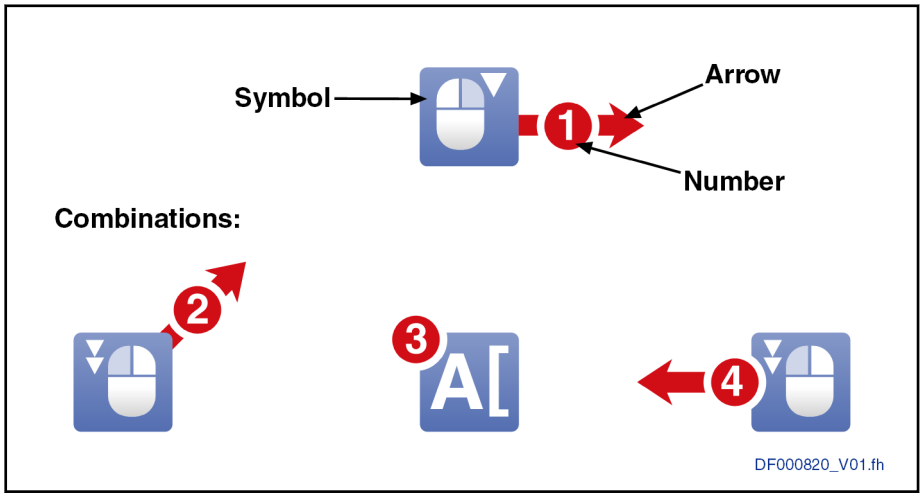

Fig. 1-1: Combinations of action symbols

Action symbol	Meaning
	**Left-click:** Click using the **left mouse button**.
	**Double click: Double click** using the **left mouse button**.
	**Right-click:** Click using the **right mouse button**.
	**Drag:** Click the left mouse button and keep it pressed. Move the mouse to the target position (continued in the next symbol).
	**Drop:** Release the mouse button at the target position.

Used Symbols

Action symbol	Meaning
	**Text input:** Enter your text.
	**Note:** Note or compare information, e.g. a results list, information on the device display, comparison of input data with connected devices.

Tab. 1-1: Action symbols

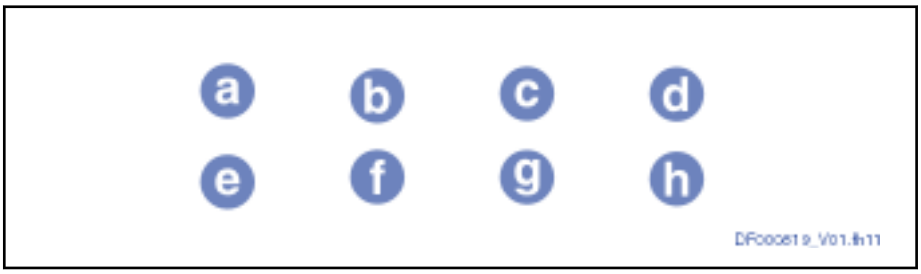

Fig. 1-2: Bullets

The bullets sub-divide steps or are used as markers (e.g. to describe different areas in a screen shot).

Other Symbols

Symbol	Meaning
	Information
	Mail
	Internet address
	Question
	Note, warning

Tab. 1-2: Other symbols

Keyboard Symbols

Symbol	Name
	Cancel
	Alternative

Symbol	Name
	Paste
	Enter
	Delete
	Space
	Arrow left
	Arrow up
	Arrow right
	Arrow down
	Ctrl
	Shift

Tab. 1-3: Keyboard symbols

2 Important Directions for Use

2.1 Appropriate Use

2.1.1 Introduction

Rexroth products reflect the state-of-the-art in their development and their manufacture. They are tested prior to delivery to ensure operating safety and reliability.

⚠ WARNING **Personal injury and property damage caused by incorrect use of the products!**

The products have been designed for use in industrial environments and may only be used in the appropriate way. If they are not used in the appropriate way, situations resulting in property damage and personal injury can occur.

☞ Rexroth as manufacturer is not liable for any damages resulting from inappropriate use. In such cases, the guarantee and the right to payment of damages resulting from inappropriate use are forfeited. The user alone carries all responsibility of the risks.

Before using Rexroth products, the following pre-requisites must be met to ensure appropriate use of the products:

- Personnel that in any way, shape or form uses our products must first read and understand the relevant safety instructions and be familiar with their appropriate use.
- If the products take the form of hardware, then they must remain in their original state, in other words, no structural changes are permitted. It is not permitted to decompile software products or alter source codes.
- Damaged or faulty products may not be installed or put into operation.
- Make sure that the products have been installed in the manner described in the relevant documentation.

2.1.2 Areas of Use and Application

Drive controllers made by Rexroth are designed to control electrical motors and monitor their operation.

Control and monitoring of the Drive controllers may require additional sensors and actors.

☞ The drive controllers may only be used with the accessories and parts specified in this documentation. If a component has not been specifically named, then it may neither be mounted nor connected. The same applies to cables and lines.

Operation is only permitted in the specified configurations and combinations of components using the software and firmware as specified in the relevant Functional Descriptions.

Drive controllers have to be programmed before commissioning to ensure that the motor executes the specific functions of an application.

Drive controllers of the Rexroth IndraDrive line have been developed for use in single- and multi-axis drive and control tasks.

To ensure application-specific use of Drive controllers, device types of different drive power and different interfaces are available.

Typical applications include, for example:

- Handling and mounting systems,
- Packaging and food machines,
- Printing and paper processing machines and
- Machine tools.

Drive controllers may only be operated under the assembly and installation conditions described in this documentation, in the specified position of normal use and under the ambient conditions as described (temperature, degree of protection, humidity, EMC, etc.).

2.2 Inappropriate Use

Using the Drive controllers outside of the operating conditions described in this documentation and outside of the technical data and specifications given is defined as "inappropriate use".

Drive controllers may not be used, if ...

- they are subject to operating conditions that do not meet the specified ambient conditions. This includes, for example, operation under water, under extreme temperature fluctuations or extremely high maximum temperatures.
- Furthermore, Drive controllers may not be used in applications which have not been expressly authorized by Rexroth. Please carefully follow the specifications outlined in the general Safety Instructions!

☞ Components of the Rexroth IndraDrive system are **products of category C3** (with limited availability) according to IEC 61800-3. To ensure that this category (limit values) is maintained, suitable line filters must be used in the drive system.

These components are not provided for use in a public low-voltage network supplying residential areas with power. If these components are used in such a public network, high-frequency interference is to be expected. This can require additional measures of radio interference suppression.

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3 Safety Instructions for Electric Drives and Controls

3.1 Definitions of Terms

Application Documentation Application documentation comprises the entire documentation used to inform the user of the product about the use and safety-relevant features for configuring, integrating, installing, mounting, commissioning, operating, maintaining, repairing and decommissioning the product. The following terms are also used for this kind of documentation: Operating Instructions, Commissioning Manual, Instruction Manual, Project Planning Manual, Application Description, etc.

Component A component is a combination of elements with a specified function, which are part of a piece of equipment, device or system. Components of the electric drive and control system are, for example, supply units, drive controllers, mains choke, mains filter, motors, cables, etc.

Control System A control system comprises several interconnected control components placed on the market as a single functional unit.

Device A device is a finished product with a defined function, intended for users and placed on the market as an individual piece of merchandise.

Electrical Equipment Electrical equipment encompasses all devices used to generate, convert, transmit, distribute or apply electrical energy, such as electric motors, transformers, switching devices, cables, lines, power-consuming devices, circuit board assemblies, plug-in units, control cabinets, etc.

Electric Drive System An electric drive system comprises all components from mains supply to motor shaft; this includes, for example, electric motor(s), motor encoder(s), supply units and drive controllers, as well as auxiliary and additional components, such as mains filter, mains choke and the corresponding lines and cables.

Installation An installation consists of several devices or systems interconnected for a defined purpose and on a defined site which, however, are not intended to be placed on the market as a single functional unit.

Machine A machine is the entirety of interconnected parts or units at least one of which is movable. Thus, a machine consists of the appropriate machine drive elements, as well as control and power circuits, which have been assembled for a specific application. A machine is, for example, intended for processing, treatment, movement or packaging of a material. The term "machine" also covers a combination of machines which are arranged and controlled in such a way that they function as a unified whole.

Manufacturer The manufacturer is an individual or legal entity bearing responsibility for the design and manufacture of a product which is placed on the market in the individual's or legal entity's name. The manufacturer can use finished products, finished parts or finished elements, or contract out work to subcontractors. However, the manufacturer must always have overall control and possess the required authority to take responsibility for the product.

Product Examples of a product: Device, component, part, system, software, firmware, among other things.

Project Planning Manual A project planning manual is part of the application documentation used to support the sizing and planning of systems, machines or installations.

Qualified Persons In terms of this application documentation, qualified persons are those persons who are familiar with the installation, mounting, commissioning and operation of the components of the electric drive and control system, as well as with the hazards this implies, and who possess the qualifications their work

requires. To comply with these qualifications, it is necessary, among other things,

1) to be trained, instructed or authorized to switch electric circuits and devices safely on and off, to ground them and to mark them

2) to be trained or instructed to maintain and use adequate safety equipment

3) to attend a course of instruction in first aid

User A user is a person installing, commissioning or using a product which has been placed on the market.

3.2 General information

3.2.1 Using the Safety instructions and passing them on to others

Do not attempt to install and operate the components of the electric drive and control system without first reading all documentation provided with the product. Read and understand these safety instructions and all user documentation prior to working with these components. If you do not have the user documentation for the components, contact your responsible Rexroth sales partner. Ask for these documents to be sent immediately to the person or persons responsible for the safe operation of the components.

If the component is resold, rented and/or passed on to others in any other form, these safety instructions must be delivered with the component in the official language of the user's country.

Improper use of these components, failure to follow the safety instructions in this document or tampering with the product, including disabling of safety devices, could result in property damage, injury, electric shock or even death.

3.2.2 Requirements for safe use

Read the following instructions before initial commissioning of the components of the electric drive and control system in order to eliminate the risk of injury and/or property damage. You must follow these safety instructions.

- Rexroth is not liable for damages resulting from failure to observe the safety instructions.
- Read the operating, maintenance and safety instructions in your language before commissioning. If you find that you cannot completely understand the application documentation in the available language, please ask your supplier to clarify.
- Proper and correct transport, storage, mounting and installation, as well as care in operation and maintenance, are prerequisites for optimal and safe operation of the component.
- Only qualified persons may work with components of the electric drive and control system or within its proximity.
- Only use accessories and spare parts approved by Rexroth.
- Follow the safety regulations and requirements of the country in which the components of the electric drive and control system are operated.
- Only use the components of the electric drive and control system in the manner that is defined as appropriate. See chapter "Appropriate Use".
- The ambient and operating conditions given in the available application documentation must be observed.
- Applications for functional safety are only allowed if clearly and explicitly specified in the application documentation "Integrated Safety Technolo-

gy". If this is not the case, they are excluded. Functional safety is a safety concept in which measures of risk reduction for personal safety depend on electrical, electronic or programmable control systems.

- The information given in the application documentation with regard to the use of the delivered components contains only examples of applications and suggestions.

  The machine and installation manufacturers must

  – make sure that the delivered components are suited for their individual application and check the information given in this application documentation with regard to the use of the components,

  – make sure that their individual application complies with the applicable safety regulations and standards and carry out the required measures, modifications and complements.

- Commissioning of the delivered components is only allowed once it is sure that the machine or installation in which the components are installed complies with the national regulations, safety specifications and standards of the application.
- Operation is only allowed if the national EMC regulations for the application are met.
- The instructions for installation in accordance with EMC requirements can be found in the section on EMC in the respective application documentation.

  The machine or installation manufacturer is responsible for compliance with the limit values as prescribed in the national regulations.

- The technical data, connection and installation conditions of the components are specified in the respective application documentations and must be followed at all times.

National regulations which the user has to comply with

- European countries: In accordance with European EN standards
- United States of America (USA):
  – National Electrical Code (NEC)
  – National Electrical Manufacturers Association (NEMA), as well as local engineering regulations
  – Regulations of the National Fire Protection Association (NFPA)
- Canada: Canadian Standards Association (CSA)
- Other countries:
  – International Organization for Standardization (ISO)
  – International Electrotechnical Commission (IEC)

3.2.3 Hazards by improper use

- High electrical voltage and high working current! Danger to life or serious injury by electric shock!
- High electrical voltage by incorrect connection! Danger to life or injury by electric shock!
- Dangerous movements! Danger to life, serious injury or property damage by unintended motor movements!
- Health hazard for persons with heart pacemakers, metal implants and hearing aids in proximity to electric drive systems!

- Risk of burns by hot housing surfaces!
- Risk of injury by improper handling! Injury by crushing, shearing, cutting, hitting!
- Risk of injury by improper handling of batteries!
- Risk of injury by improper handling of pressurized lines!

3.3 Instructions with Regard to Specific Dangers

3.3.1 Protection Against Contact with Electrical Parts and Housings

☞ This section concerns components of the electric drive and control system with voltages of **more than 50 volts**.

Contact with parts conducting voltages above 50 volts can cause personal danger and electric shock. When operating components of the electric drive and control system, it is unavoidable that some parts of these components conduct dangerous voltage.

High electrical voltage! Danger to life, risk of injury by electric shock or serious injury!

- Only qualified persons are allowed to operate, maintain and/or repair the components of the electric drive and control system.
- Follow the general installation and safety regulations when working on power installations.
- Before switching on, the equipment grounding conductor must have been permanently connected to all electric components in accordance with the connection diagram.
- Even for brief measurements or tests, operation is only allowed if the equipment grounding conductor has been permanently connected to the points of the components provided for this purpose.
- Before accessing electrical parts with voltage potentials higher than 50 V, you must disconnect electric components from the mains or from the power supply unit. Secure the electric component from reconnection.
- With electric components, observe the following aspects:

  Always wait **30 minutes** after switching off power to allow live capacitors to discharge before accessing an electric component. Measure the electrical voltage of live parts before beginning to work to make sure that the equipment is safe to touch.
- Install the covers and guards provided for this purpose before switching on.
- Never touch electrical connection points of the components while power is turned on.
- Do not remove or plug in connectors when the component has been powered.
- Under specific conditions, electric drive systems can be operated at mains protected by residual-current-operated circuit-breakers sensitive to universal current (RCDs/RCMs).

- Secure built-in devices from penetrating foreign objects and water, as well as from direct contact, by providing an external housing, for example a control cabinet.

High housing voltage and high leakage current! Danger to life, risk of injury by electric shock!

- Before switching on and before commissioning, ground or connect the components of the electric drive and control system to the equipment grounding conductor at the grounding points.
- Connect the equipment grounding conductor of the components of the electric drive and control system permanently to the main power supply at all times. The leakage current is greater than 3.5 mA.
- Establish an equipment grounding connection with a minimum cross section according to the table below. With an outer conductor cross section smaller than 10 mm^2 (8 AWG), the alternative connection of two equipment grounding conductors is allowed, each having the same cross section as the outer conductors.

Cross section outer conductor	Minimum cross section equipment grounding conductor Leakage current ≥ 3.5 mA	
	1 equipment grounding conductor	2 equipment grounding conductors
1.5 mm^2 (16 AWG)	10 mm^2 (8 AWG)	2 × 1.5 mm^2 (16 AWG)
2.5 mm^2 (14 AWG)		2 × 2.5 mm^2 (14 AWG)
4 mm^2 (12 AWG)		2 × 4 mm^2 (12 AWG)
6 mm^2 (10 AWG)		2 × 6 mm^2 (10 AWG)
10 mm^2 (8 AWG)		-
16 mm^2 (6 AWG)	16 mm^2 (6 AWG)	-
25 mm^2 (4 AWG)		-
35 mm^2 (2 AWG)		-
50 mm^2 (1/0 AWG)	25 mm^2 (4 AWG)	-
70 mm^2 (2/0 AWG)	35 mm^2 (2 AWG)	-
...	...	...

Tab. 3-1: Minimum Cross Section of the Equipment Grounding Connection

3.3.2 Protective extra-low voltage as protection against electric shock

Protective extra-low voltage is used to allow connecting devices with basic insulation to extra-low voltage circuits.

On components of an electric drive and control system provided by Rexroth, all connections and terminals with voltages up to 50 volts are PELV ("Protective Extra-Low Voltage") systems. It is allowed to connect devices equipped with basic insulation (such as programming devices, PCs, notebooks, display units) to these connections.

Danger to life, risk of injury by electric shock! High electrical voltage by incorrect connection!

If extra-low voltage circuits of devices containing voltages and circuits of more than 50 volts (e.g., the mains connection) are connected to Rexroth products, the connected extra-low voltage circuits must comply with the requirements for PELV ("Protective Extra-Low Voltage").

3.3.3 Protection against dangerous movements

Dangerous movements can be caused by faulty control of connected motors. Some common examples are:

- Improper or wrong wiring or cable connection
- Operator errors
- Wrong input of parameters before commissioning
- Malfunction of sensors and encoders
- Defective components
- Software or firmware errors

These errors can occur immediately after equipment is switched on or even after an unspecified time of trouble-free operation.

The monitoring functions in the components of the electric drive and control system will normally be sufficient to avoid malfunction in the connected drives. Regarding personal safety, especially the danger of injury and/or property damage, this alone cannot be relied upon to ensure complete safety. Until the integrated monitoring functions become effective, it must be assumed in any case that faulty drive movements will occur. The extent of faulty drive movements depends upon the type of control and the state of operation.

Dangerous movements! Danger to life, risk of injury, serious injury or property damage!

A **risk assessment** must be prepared for the installation or machine, with its specific conditions, in which the components of the electric drive and control system are installed.

As a result of the risk assessment, the user must provide for monitoring functions and higher-level measures on the installation side for personal safety. The safety regulations applicable to the installation or machine must be taken into consideration. Unintended machine movements or other malfunctions are possible if safety devices are disabled, bypassed or not activated.

To avoid accidents, injury and/or property damage:

- Keep free and clear of the machine’s range of motion and moving machine parts. Prevent personnel from accidentally entering the machine’s range of motion by using, for example:
  - Safety fences
  - Safety guards
  - Protective coverings
  - Light barriers
- Make sure the safety fences and protective coverings are strong enough to resist maximum possible kinetic energy.
- Mount emergency stopping switches in the immediate reach of the operator. Before commissioning, verify that the emergency stopping equip-

ment works. Do not operate the machine if the emergency stopping switch is not working.

- Prevent unintended start-up. Isolate the drive power connection by means of OFF switches/OFF buttons or use a safe starting lockout.
- Make sure that the drives are brought to safe standstill before accessing or entering the danger zone.
- Additionally secure vertical axes against falling or dropping after switching off the motor power by, for example,
  - mechanically securing the vertical axes,
  - adding an external braking/arrester/clamping mechanism or
  - ensuring sufficient counterbalancing of the vertical axes.
- The standard equipment **motor holding brake** or an external holding brake controlled by the drive controller is **not sufficient to guarantee personal safety**!
- Disconnect electrical power to the components of the electric drive and control system using the master switch and secure them from reconnection ("lock out") for:
  - Maintenance and repair work
  - Cleaning of equipment
  - Long periods of discontinued equipment use
- Prevent the operation of high-frequency, remote control and radio equipment near components of the electric drive and control system and their supply leads. If the use of these devices cannot be avoided, check the machine or installation, at initial commissioning of the electric drive and control system, for possible malfunctions when operating such high-frequency, remote control and radio equipment in its possible positions of normal use. It might possibly be necessary to perform a special electromagnetic compatibility (EMC) test.

3.3.4 Protection Against Magnetic and Electromagnetic Fields During Operation and Mounting

Magnetic and electromagnetic fields generated by current-carrying conductors or permanent magnets of electric motors represent a serious danger to persons with heart pacemakers, metal implants and hearing aids.

Health hazard for persons with heart pacemakers, metal implants and hearing aids in proximity to electric components!

- Persons with heart pacemakers and metal implants are not allowed to enter the following areas:
  - Areas in which components of the electric drive and control systems are mounted, commissioned and operated.
  - Areas in which parts of motors with permanent magnets are stored, repaired or mounted.
- If it is necessary for somebody with a heart pacemaker to enter such an area, a doctor must be consulted prior to doing so. The noise immunity of implanted heart pacemakers differs so greatly that no general rules can be given.
- Those with metal implants or metal pieces, as well as with hearing aids, must consult a doctor before they enter the areas described above.

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3.3.5 Protection against contact with hot parts

Hot surfaces of components of the electric drive and control system. Risk of burns!

- Do not touch hot surfaces of, for example, braking resistors, heat sinks, supply units and drive controllers, motors, windings and laminated cores!
- According to the operating conditions, temperatures of the surfaces can be **higher than 60 °C** (140 °F) during or after operation.
- Before touching motors after having switched them off, let them cool down for a sufficient period of time. Cooling down can require **up to 140 minutes**! The time required for cooling down is approximately five times the thermal time constant specified in the technical data.
- After switching chokes, supply units and drive controllers off, wait **15 minutes** to allow them to cool down before touching them.
- Wear safety gloves or do not work at hot surfaces.
- For certain applications, and in accordance with the respective safety regulations, the manufacturer of the machine or installation must take measures to avoid injuries caused by burns in the final application. These measures can be, for example: Warnings at the machine or installation, guards (shieldings or barriers) or safety instructions in the application documentation.

3.3.6 Protection during handling and mounting

Risk of injury by improper handling! Injury by crushing, shearing, cutting, hitting!

- Observe the relevant statutory regulations of accident prevention.
- Use suitable equipment for mounting and transport.
- Avoid jamming and crushing by appropriate measures.
- Always use suitable tools. Use special tools if specified.
- Use lifting equipment and tools in the correct manner.
- Use suitable protective equipment (hard hat, safety goggles, safety shoes, safety gloves, for example).
- Do not stand under hanging loads.
- Immediately clean up any spilled liquids from the floor due to the risk of falling!

3.3.7 Battery safety

Batteries consist of active chemicals in a solid housing. Therefore, improper handling can cause injury or property damage.

Risk of injury by improper handling!

- Do not attempt to reactivate low batteries by heating or other methods (risk of explosion and cauterization).
- Do not attempt to recharge the batteries as this may cause leakage or explosion.
- Do not throw batteries into open flames.
- Do not dismantle batteries.

- When replacing the battery/batteries, do not damage the electrical parts installed in the devices.
- Only use the battery types specified for the product.

☞ Environmental protection and disposal! The batteries contained in the product are considered dangerous goods during land, air, and sea transport (risk of explosion) in the sense of the legal regulations. Dispose of used batteries separately from other waste. Observe the national regulations of your country.

3.3.8 Protection Against Pressurized Systems

According to the information given in the Project Planning Manuals, motors and components cooled with liquids and compressed air can be partially supplied with externally fed, pressurized media, such as compressed air, hydraulics oil, cooling liquids and cooling lubricants. Improper handling of the connected supply systems, supply lines or connections can cause injuries or property damage.

Risk of injury by improper handling of pressurized lines!

- Do not attempt to disconnect, open or cut pressurized lines (risk of explosion).
- Observe the respective manufacturer's operating instructions.
- Before dismounting lines, relieve pressure and empty medium.
- Use suitable protective equipment (safety goggles, safety shoes, safety gloves, for example).
- Immediately clean up any spilled liquids from the floor due to the risk of falling!

☞ Environmental protection and disposal! The agents (e.g., fluids) used to operate the product might not be environmentally friendly. Dispose of agents harmful to the environment separately from other waste. Observe the national regulations of your country.

3.4 Explanation of signal words and the Safety alert symbol

The Safety Instructions in the available application documentation contain specific signal words (DANGER, WARNING, CAUTION or NOTICE) and, where required, a safety alert symbol (in accordance with ANSI Z535.6-2011).

The signal word is meant to draw the reader's attention to the safety instruction and identifies the hazard severity.

The safety alert symbol (a triangle with an exclamation point), which precedes the signal words DANGER, WARNING and CAUTION, is used to alert the reader to personal injury hazards.

⚠ DANGER

In case of non-compliance with this safety instruction, death or serious injury **will** occur.

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⚠ WARNING

In case of non-compliance with this safety instruction, death or serious injury **could** occur.

⚠ CAUTION

In case of non-compliance with this safety instruction, minor or moderate injury could occur.

NOTICE

In case of non-compliance with this safety instruction, property damage could occur.

4 General information

4.1 Overview

This chapter describes the browser settings required to access the web tool. It then explains the basic operating concept.

4.2 Comparison of IMST and IDST

Below, the differences between the IndraMotion Service Tool (IMST) and the IndraDrive Service Tool (IDST) are compared.

	IMST	IDST
Communication	Multi-device tool, can communicate with several devices using cross communication (CCD).	Single-device tool, can only communicate with one device.
File storage	The program code is stored on the microSD card in the Tools directory.	The program code is integrated into the firmware.
Language	Two languages, German and English	One language, English
System requirements	See also chapter 5.2 System requirements IMST on page 33.	See also chapter 6.2 System requirements IDST on page 39.

Tab. 4-1: Differences between IMST and IDST

4.3 Browser settings

4.3.1 Overview

Before accessing the web server using the browser, make sure that the following settings have been enabled in the browser:

General information

Security setting	Browser	Use of the functionality
Proxy server settings	Internet Explorer, Firefox	Required for the proper functioning of the web tool
Enable ActiveX controls and plug-ins	Internet Explorer	Required for the proper functioning of the web tool
Enable native XMLHTTP support (on the Security tab)	Internet Explorer	Required for the proper functioning of the web tool
Enable active scripting	Internet Explorer, Firefox	Required for the proper functioning of the web tool
Enable scripting of Java applets	Internet Explorer	Required for the proper functioning of the web tool
Allow cookies to be stored on your computer	Internet Explorer, Firefox	Optional, used to store login information
Disable pop-up blocker	Internet Explorer, Firefox	Required for the proper functioning of the web tool
Allow changes to the status bar	Firefox	Optional, used to display status information in the status bar

Tab. 4-2: Overview of the browser settings

4.3.2 Adjusting proxy server settings

Deactivating the proxy server ensures trouble-free communication with the web server of the drive.

To deactivate the proxy server in the Internet Explorer, go to

"Tools → Internet Options → Connections → LAN settings":

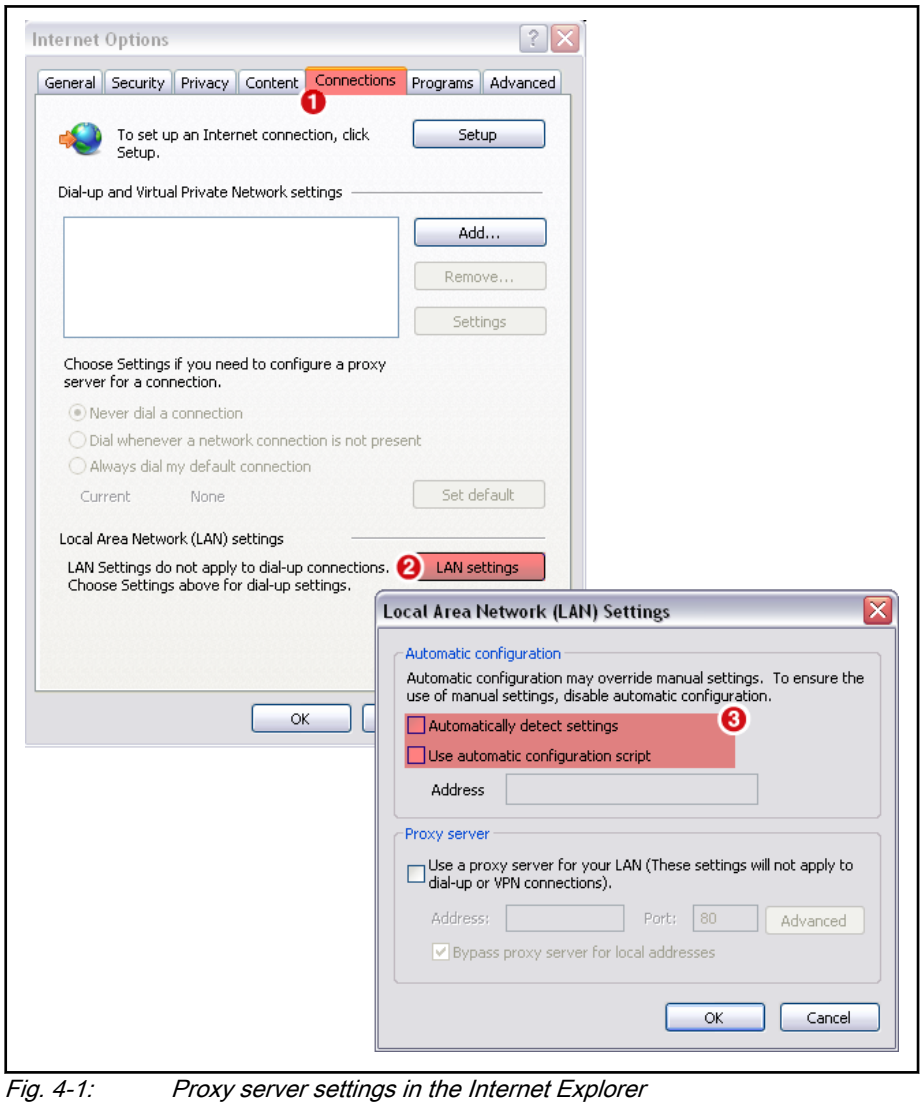

Fig. 4-1: Proxy server settings in the Internet Explorer

To deactivate the proxy server in Firefox, go to

General information

"Tools → Options → Advanced → Network → Settings...":

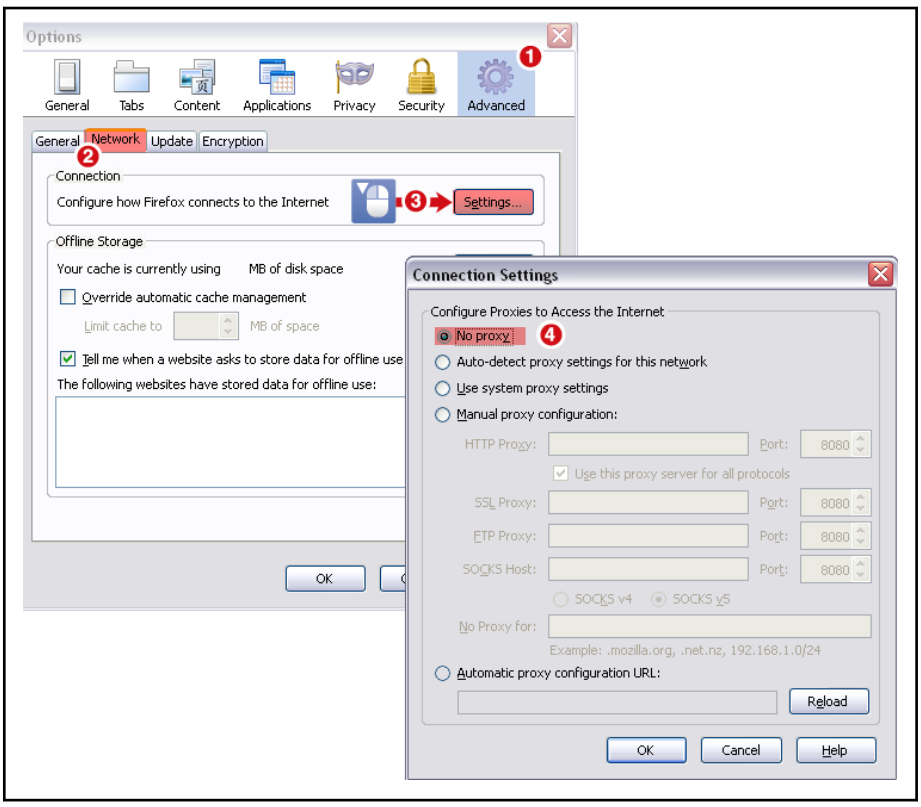

Fig. 4-2: Proxy server settings in Mozilla Firefox

4.3.3 Enabling ActiveX controls and plug-ins

In the Internet Explorer go to

"Tools → Internet Options → Security → Custom level..."

and in the section **ActiveX controls and plug-ins** enable the following settings:

- Run ActiveX controls and plug-ins
- Script ActiveX controls marked safe for scripting

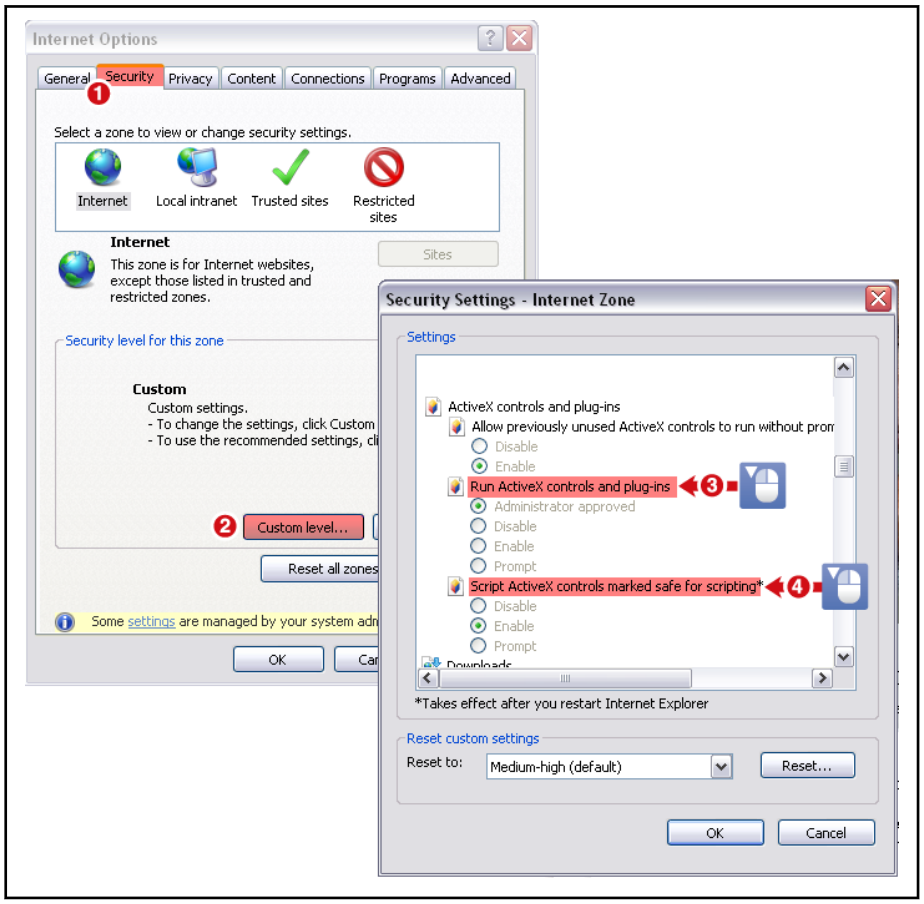

Fig. 4-3: Settings for ActiveX controls and plug-ins

General information

4.3.4 Enabling XMLHTTP support

In the Internet Explorer go to
"Tools → Internet Options → Advanced → Security"
and enable the setting **Native XMLHTTP support**.

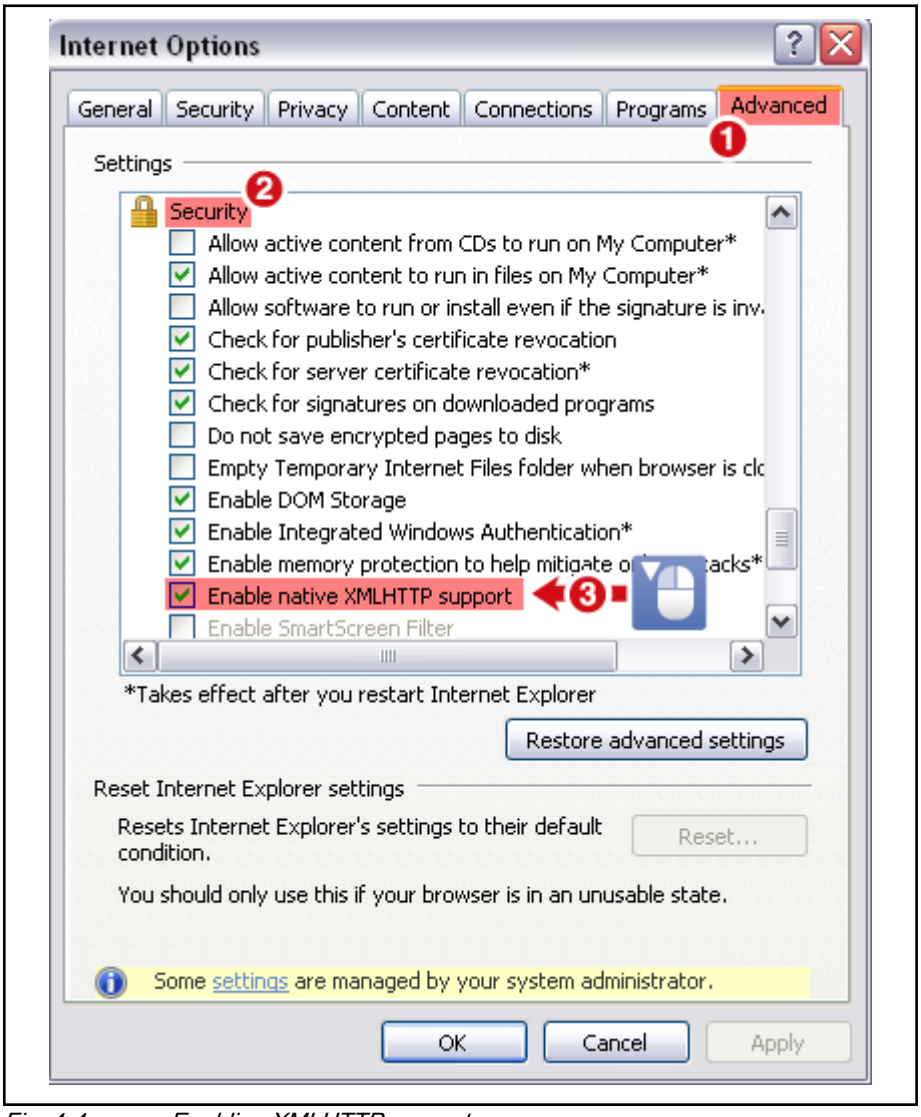

Fig. 4-4: Enabling XMLHTTP support

4.3.5 Enabling active scripting

In the Internet Explorer go to
"Tools → Internet Options → Security → Custom level..."
and in the **Scripting** section enable **Active scripting**.

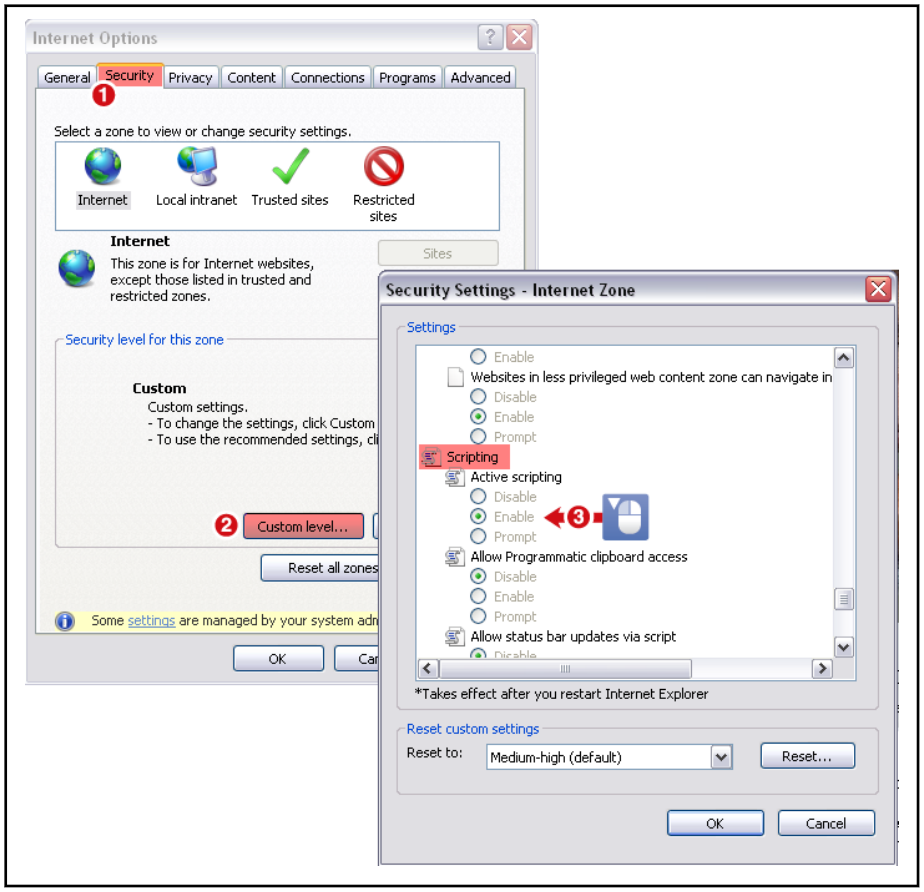

Fig. 4-5: Active scripting settings in the Internet Explorer

General information

In Firefox enable JavaScript under
"Extras → Options → Content".

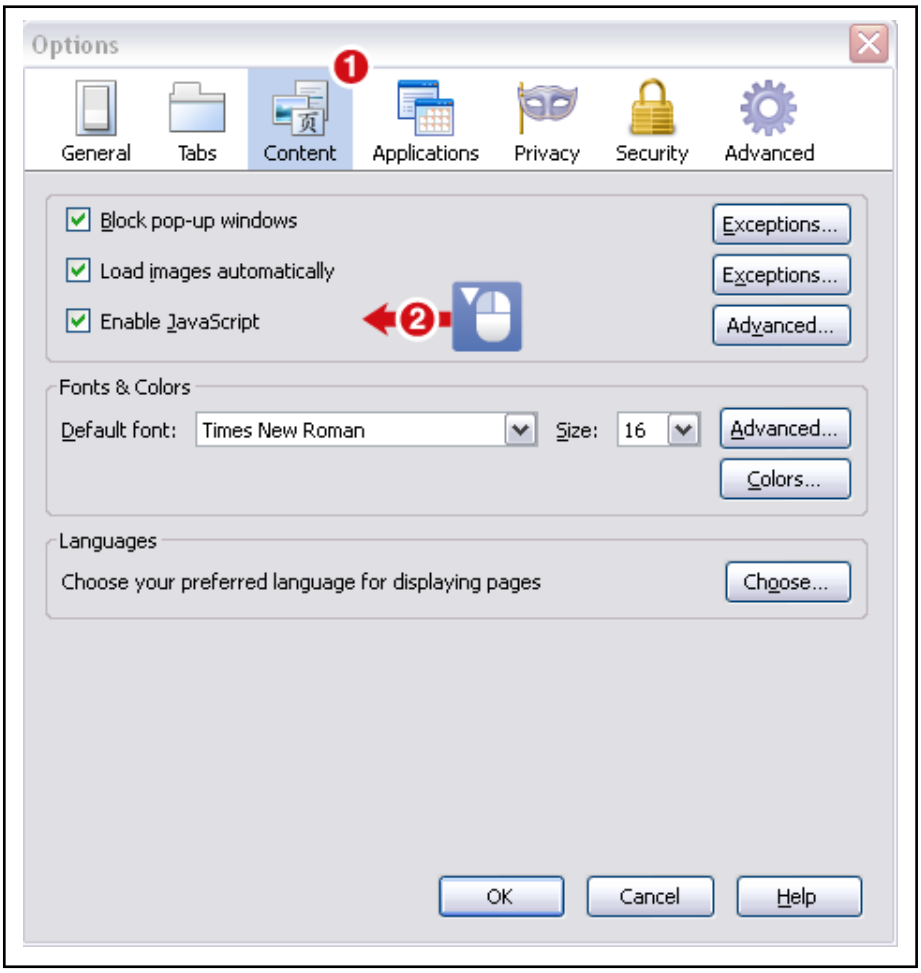

Fig. 4-6: Enabling JavaScript in the Firefox browser

4.3.6 Enabling scripting of Java applets

In the Internet Explorer go to
"Tools → Internet Options → Security → Custom level..."
and in the **Scripting** section enable **Scripting of Java applets**.

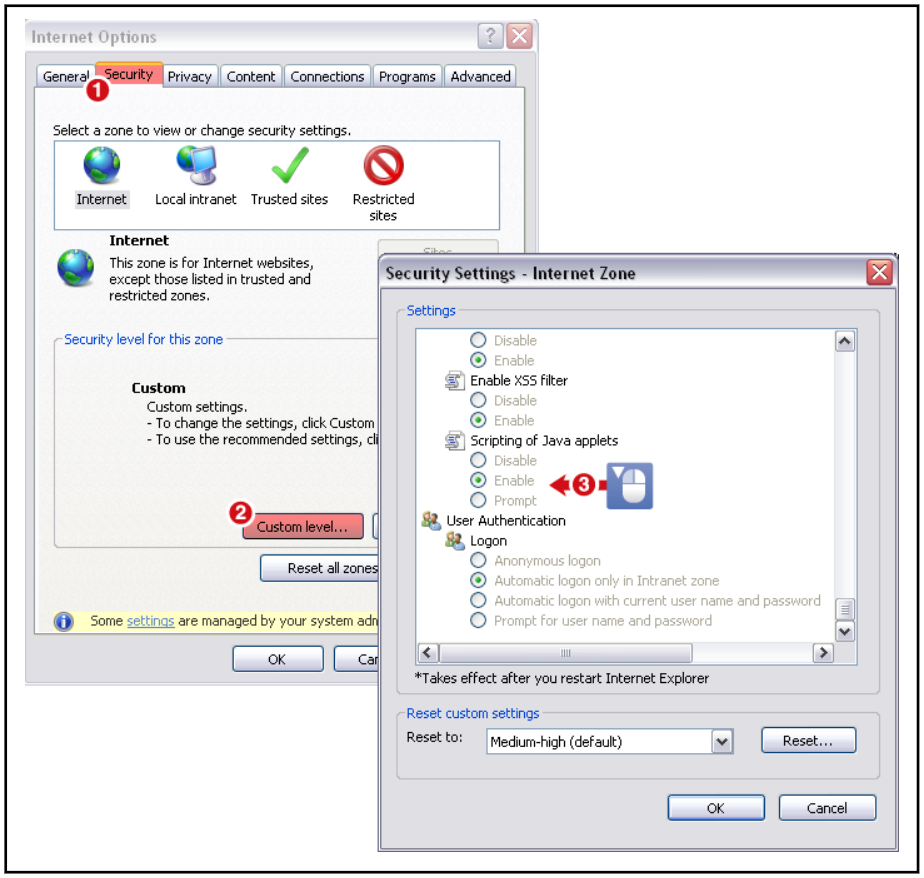

Fig. 4-7: Enabling scripting of Java applets

General information

4.3.7 Enabling cookies

Adjust the cookie settings in the Internet Explorer in
"Tools → Internet Options → Privacy".
Go to **Settings** to specify the cookie settings.

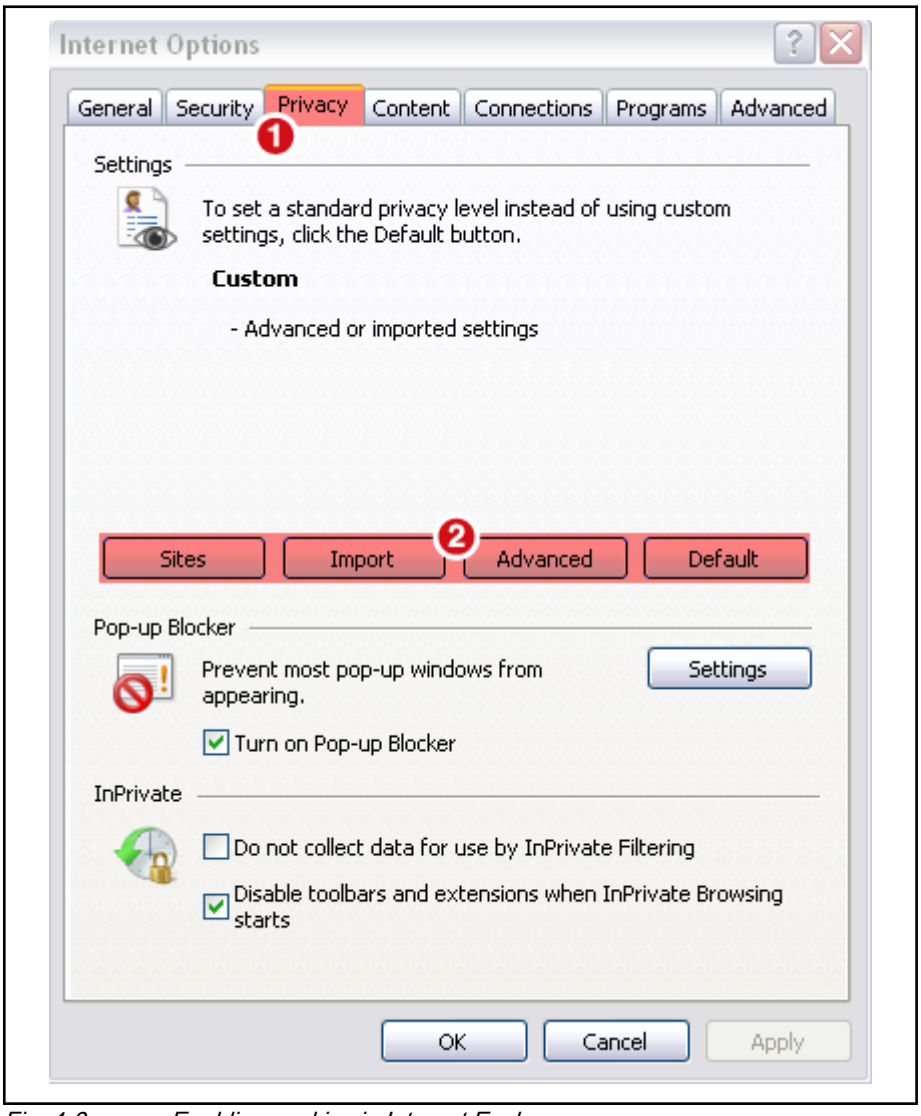

Fig. 4-8: Enabling cookies in Internet Explorer

In Firefox, go to

"Tools → Options → Privacy" to accept the cookie settings in the **History** section.

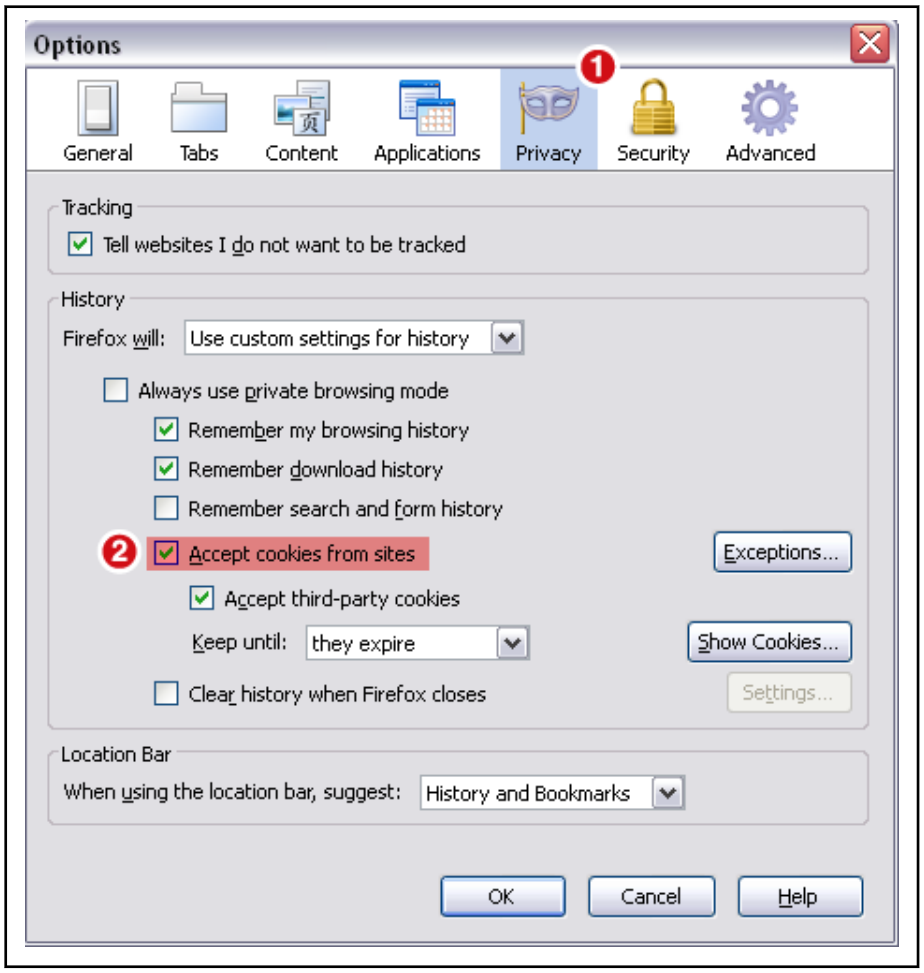

Fig. 4-9: Enabling cookies in Firefox

General information

4.3.8 Disabling the pop-up blocker

The pop-up blocker must be disabled for the web tool.

To disable the pop-up blocker in the Internet Explorer, go to

"Tools → Internet Options → Privacy"

and to the **Pop-up Blocker** section. Use the **Settings** button, the address text field and the **Add** button to add the IP address of the drive to the permitted websites for which the pop-up blocker is to be disabled.

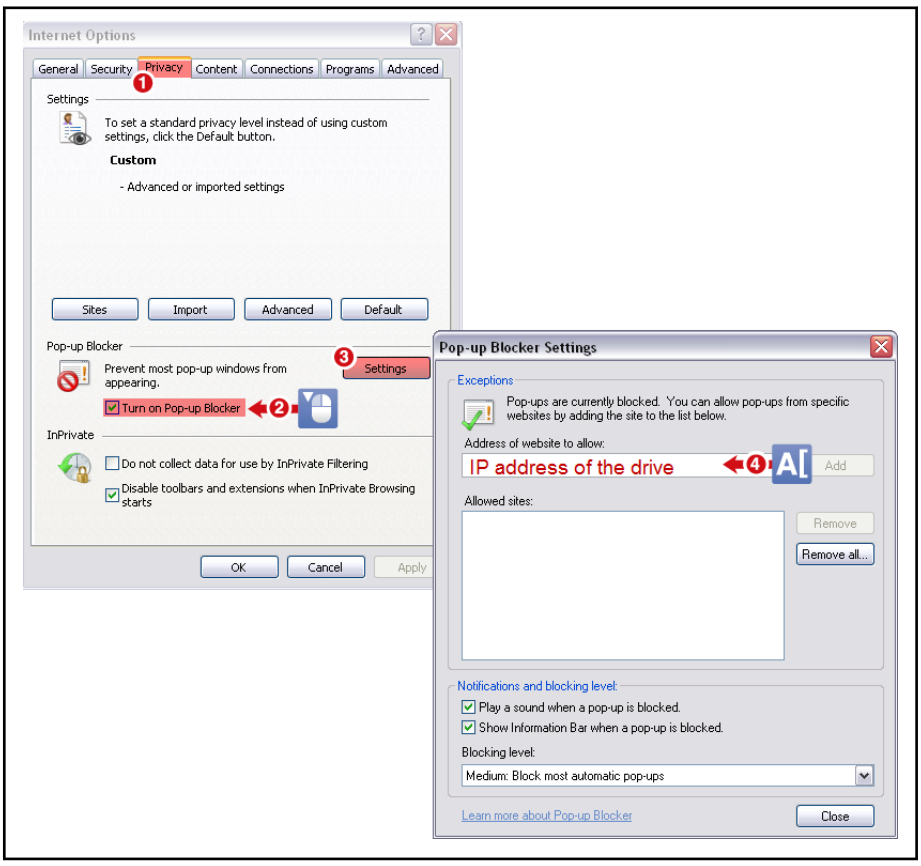

Fig. 4-10: Disabling the pop-up blocker in the Internet Explorer

To disable the pop-up blocker in Firefox, go to

"Extras → Options → Content".

Use the "**Exceptions...**" button, the address text field and the **Allow** button to add the IP address of the drive to the trustworthy websites for which the pop-up blocker is to be disabled.

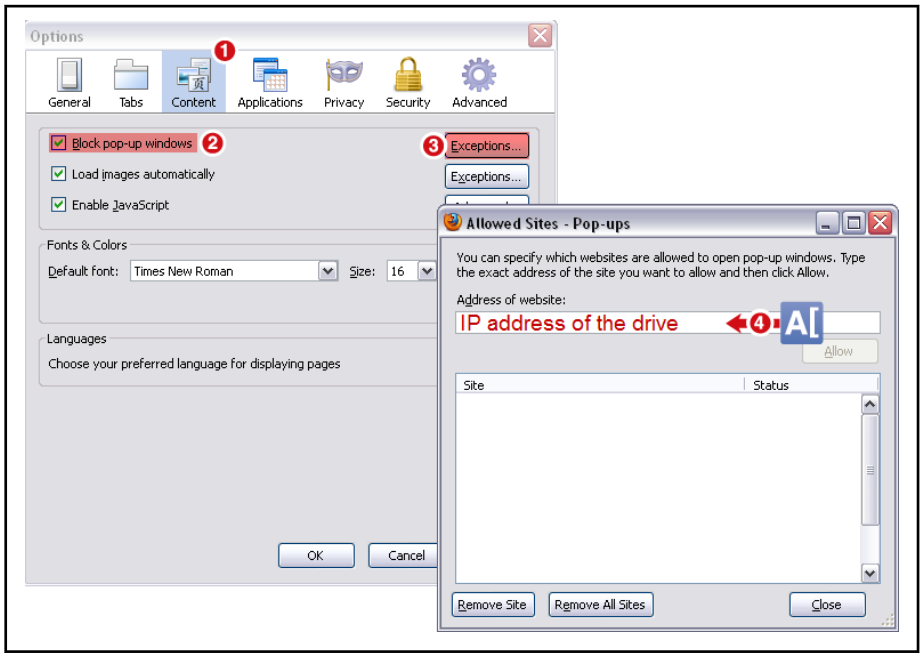

Fig. 4-11: Disabling the pop-up blocker in Firefox

4.3.9 Allowing changes to the status bar

To display status information from the web tool in the status bar in Firefox, the respective browser setting must be enabled. For this purpose, enter the statement "about:config" in the address bar of the Firefox browser and confirm it. Then, set the preference name **dom.disable_window_status_change** to "false".

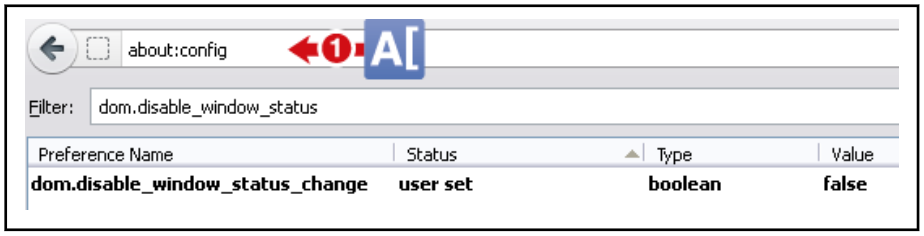

Fig. 4-12: Allowing changes to the status bar in the Firefox browser

General information

4.4 First login

4.4.1 Overview

After completing all settings in the browser that is used, login to the web server by entering the IP address of the drive in the address field of the browser. When the browser accesses the drive for the first time, the user name is "guest" by default.

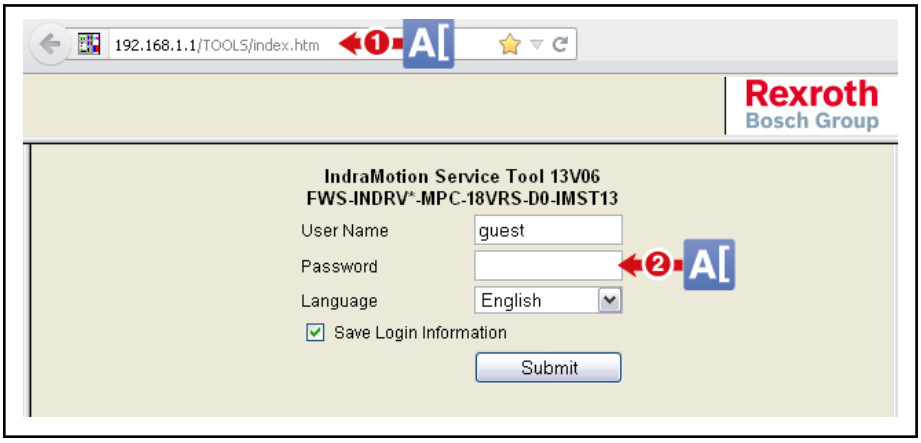

Fig. 4-13: Login page at first login as "guest"

See also chapter 5.3.2 User accounts (IMST) on page 35.

See also chapter 6.3.2 User accounts (IDST) on page 40.

Safety risk for login and storage of login data

If the check box "Save login information" on the login page is enabled, the user name and the password are stored in a cookie. These pieces of information are also stored when the browser is closed or the PC is shut down. The next user who establishes a connection to the drive with the same PC can just click on the Submit button and log in with the data of the last user. It is therefore possible that an unauthorized user logs in with service rights!

4.4.2 Logout

The current user can log out from the web tool by closing the browser.

5 IndraMotion Service Tool

5.1 General information

The IndraMotion Service Tool (IMST) is a web-based diagnostic tool that provides a high-speed Ethernet connection to an "IndraDrive Cs device with MPC-18 firmware and higher".

Using the IMST end users and service technicians can log in to the drive system and read diagnostic information on the system.

In addition, authorized users can use the IMST to handle various service tasks, such as replacing drive components, loading parameters or updating the drive firmware.

☞ The IMST does not require installation or setup. All required files and tools are stored in the "Tools" directory on the microSD card. The IMST supports the **MPC-18VRS** drive firmware.

The drive web server is password-protected and requires user access to the drive network. To access the web server and/or the IMST, enter the IP address of the drive in the address bar of the browser. As soon as the connection is established, the login page of the IMST is loaded in the browser.

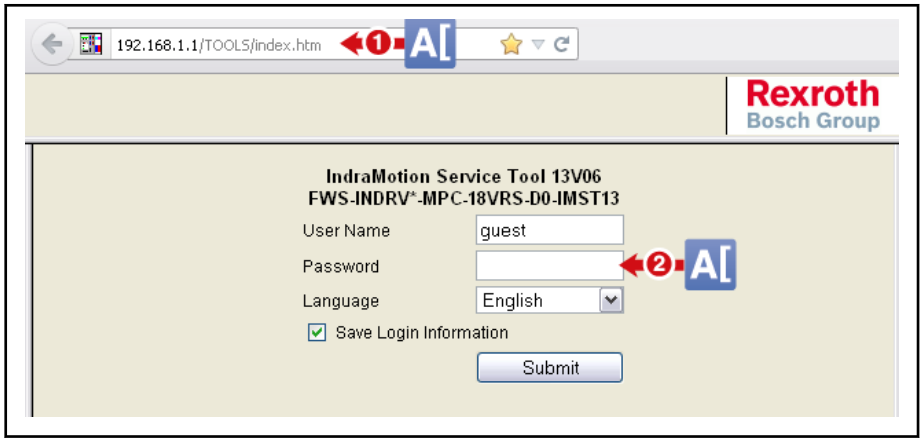

Fig. 5-1: IndraMotion Service Tool login page

5.2 System requirements

5.2.1 Hardware

The following hardware components are required to access the IMST:

Hardware	Description
Personal computer	A desktop computer or laptop with a high-speed Ethernet connection
Drive system	IndraDrive Cs with a CSH02.1 control section with MPC18 firmware and microSD card

Tab. 5-1: Hardware specification

☞ Establish a direct Ethernet connection between the PC and the drive using an Ethernet cable.

IndraMotion Service Tool

5.2.2 Firmware

The drive system requires the following firmware versions:

- FWA-INDRV*-**MPC-18VRS**
- All slaves must be equipped with MPx18 firmware
- Cross communication (CCD) must have been correctly configured
- System files must have been stored on the microSD card

5.2.3 Software

The following software versions are required to communicate with the IMST:

Software	Description
Operating system	Microsoft Windows XP or higher
Internet browser	As of Internet Explorer 8 Note As of Firefox 3.5 Note

Note The IMST officially supports Internet Explorer and Firefox. Proper functioning of the IMST cannot be guaranteed if other browsers are used. The representation of the dialogs may vary depending on the browser version.

Tab. 5-2: Software requirements

For further information on the Internet browser settings see also chapter 4.3 Browser settings on page 19.

5.3 Functionality

5.3.1 Overview

The IMST is a diagnostic tool that allows the user to connect to IndraDrive devices. It displays hardware details of supported components as well as information, e.g. firmware versions, serial numbers or manufacturer codes.

Users with additional rights may access additional IMST functions, such as replacing a controller.

Select an entry in the navigation structure to select the respective dialog.

The IMST displays information on the drive data using the following two folders in the IMST navigation structure:

- System
- Devices

The navigation structure elements displayed to the user depend on the user's access rights.

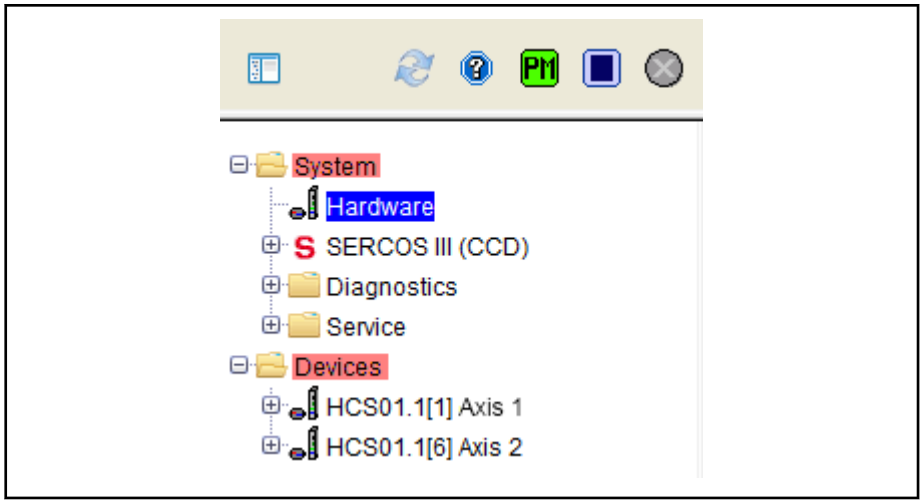

Fig. 5-2: IMST navigation structure

5.3.2 User accounts

The following user accounts have already been created:

User name	Password
"service"	Service password, configured in "P-0-3933.0.0"
"guest" or "gast"	No password required

Tab. 5-3: User accounts

The available folders and dialogs in the IMST navigation structure and the available IMST functionality depend on the user currently logged in. The "service" user has access to all directories, dialogs and functions provided by the IMST. The "gast" or "guest" user can view diagnostic information of the IndraMotion Service Tool.

Enter the user name and the password on the login page of the IMST after entering the drive IP address. To log in to the IMST successfully, enter a valid user name and the corresponding password, then click the submit button.

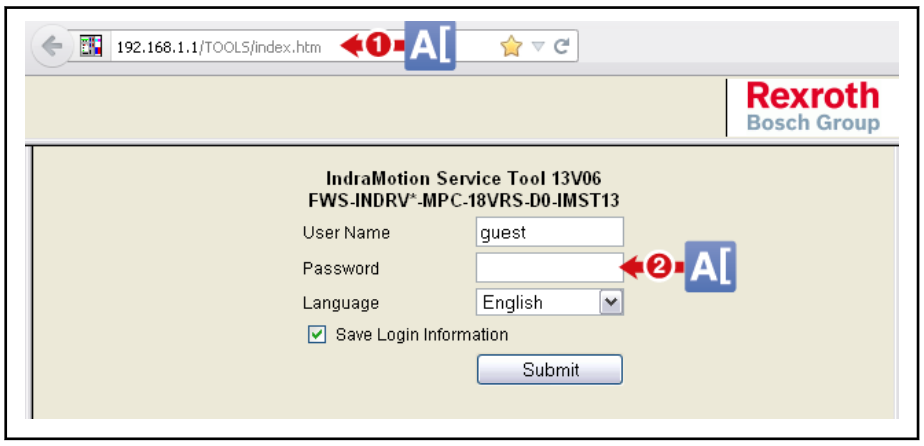

Fig. 5-3: IndraMotion Service Tool login page

For more information see also chapter 4.4 First login on page 32.

IndraMotion Service Tool

5.3.3 Header

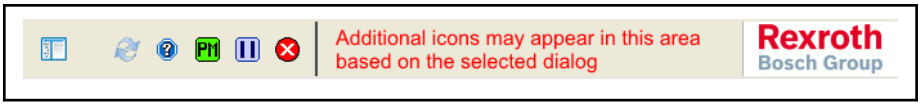

Fig. 5-4: IndraMotion Service Tool header

In the IMST header, the Bosch Rexroth logo is displayed on the right side and the standard toolbar of the IMST is displayed on the left side.

Standard icons	Description
Navigation icon	Use this icon to show or hide the navigation structure. Hide the navigation structure to use the entire width of the window for dialog display.
Cyclic reading icon Enabled Not enabled	Use this icon to enable and disable the cyclic reading of status and diagnostic data.
Help icon	This icon opens the diagnostic help. If there is no help available when the IMST is called, this icon is not displayed.
Device status icon PM OM	Displays the current device status. Authorized users may change the device status. The following device statuses may be displayed: PM - parameter mode OM - operating mode
PLC status icon PLC Run PLC Stop PLC Init	Displays the current PLC status.
Error/warning icon Error icon Warning icon	Displays the current error or warning state if one of the connected drives reports an error or warning. Select this icon in the case of an error to display the respective error source.

Tab. 5-4: Standard icons in the

The dialog-specific icons that are additionally displayed in the header are explained by tooltips and are therefore not explained in detail.

5.3.4 Tooltip functionality

Tooltip descriptions

The IMST provides tooltip descriptions for the icons in the toolbar and for fields and buttons displayed in the dialogs. The tooltips for icons in the toolbar describe the functions of the icons. The tooltips for fields or buttons show the drive parameters displayed at this position.

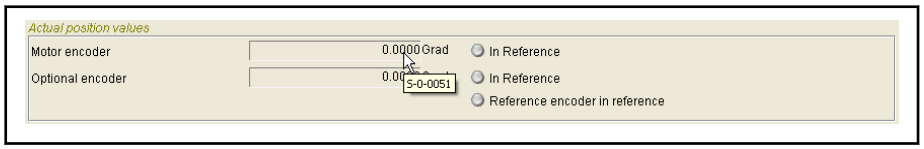

Fig. 5-5: Tooltip display in a dialog

5.3.5 Structure

System directory

The system directory contains all the information on the entire drive system. The dialog for the hardware overview is opened by default when the IMST is started. The sercos (CCD) branch is also displayed. All service tasks concerning the entire drive system are stored in the service folder. The service directory is only visible for authorized users. All system diagnostics are stored in the diagnostics folder.

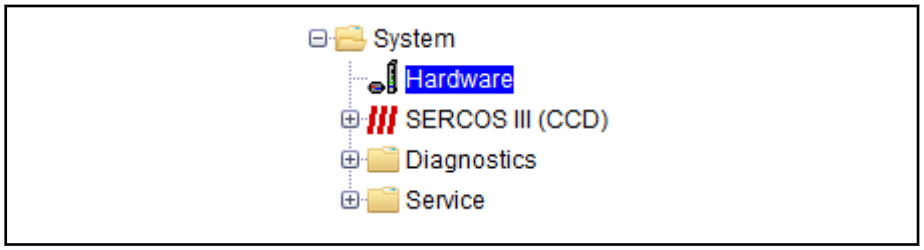

Fig. 5-6: IndraMotion Service Tool system directory

Device directory

The device directory lists all devices available in the drive system. Each device branch contains a service and a diagnostics directory. The service directory is only visible for authorized users and lists all service applications of the respective device. The diagnostics directory contains all device diagnostics available due to the device configuration.

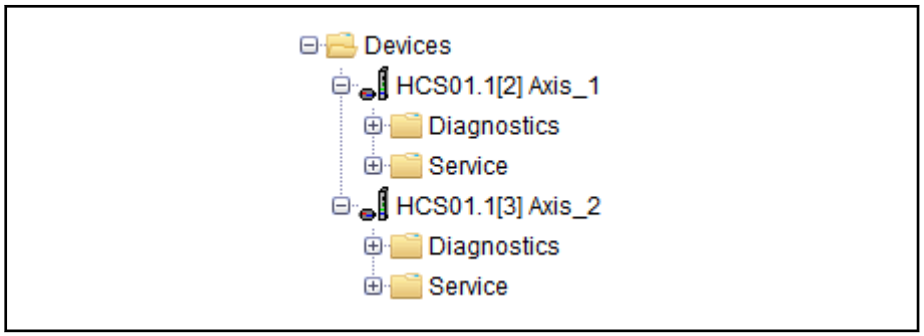

Fig. 5-7: IndraMotion Service Tool device directory

6 IndraDrive Service Tool

6.1 General information

The IndraDrive Service Tool (IDST) is a web-based single-device tool that provides a high-speed Ethernet connection to an IndraDrive Cs device. Using the IDST, end users and service technicians can log in to the drive system and read diagnostic information on the system.

In addition, authorized users can use the IDST to handle various service tasks, such as replacing drive components, loading parameters or updating the drive firmware.

The IDST does not require installation or setup. All the files and tools needed are stored on the drive. The IDST requires the **MPC-18VRS** drive firmware.

The drive web server is password-protected and requires user access to the drive network. To access the web server and/or the IDST, enter the IP address of the drive into the address bar of the browser. As soon as the connection is established, the login page of the IDST is loaded in the browser.

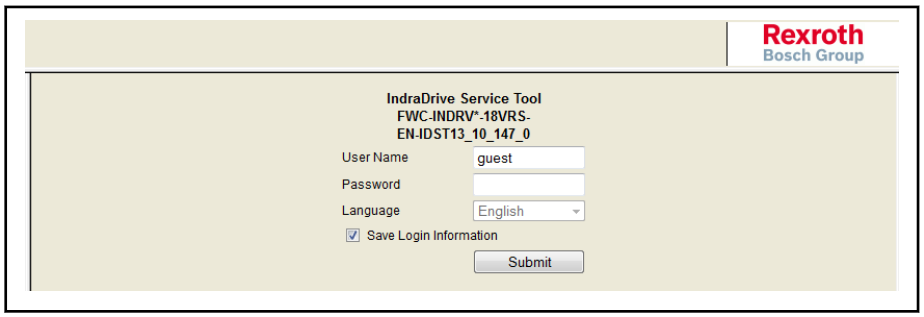

Fig. 6-1: IndraDrive Service Tool login page

6.2 System requirements

6.2.1 Hardware

The following hardware components are required to access the IDST:

Hardware	Description
Personal computer	A desktop computer or laptop with a high-speed Ethernet connection
Drive system	IndraDrive Cs

Tab. 6-1: Hardware specification

Establish a direct Ethernet connection between the PC and the drive using an Ethernet cable.

IndraDrive Service Tool

6.2.2 Firmware

The drive system requires the following firmware versions:

- FWA-INDRV*-**MPx-18VRS**
- For MPC-18VRS:
  - Without inserted microSD card
  - When a microSD card has been inserted, there must be no IMST program code

6.2.3 Software

The following software versions are required to communicate with the IDST:

Software	Description
Operating system	Microsoft Windows XP or higher
Internet browser	As of Internet Explorer 8 Note As of Firefox 3.5 Note

Note The IDST officially supports Internet Explorer and Firefox. Proper functioning of the IDST cannot be guaranteed if other browsers are used. The representation of the dialogs may vary depending on the browser version.

Tab. 6-2: Software requirements

For further information on the Internet browser settings see also chapter 4.3 Browser settings on page 19.

6.3 Functionality

6.3.1 Overview

The IDST is a single-device diagnostic tool that allows the user to connect to IndraDrive devices It displays hardware details of supported components as well as information, e.g. firmware versions, serial numbers or manufacturer codes.

Users with additional rights may access additional IDST functions, such as replacing a controller.

Select an entry in the navigation structure to select the respective dialog.

6.3.2 User accounts

The following user accounts have already been created:

User name	Password
"service"	Service password, configured in "P-0-3933.0.0"
"guest" or "gast"	No password required

Tab. 6-3: User accounts

The available dialogs in the IDST navigation structure and the available IDST functionality depend on the currently logged in user. The "service" user has access to all dialogs and functions provided by the IDST. The "gast" or "guest" user can view the diagnostic information of the IndraDrive Service Tool.

Enter the user name and the password on the login page of the IDST after entering the drive IP address. To log in to the IDST successfully, enter a valid user name and the corresponding password, then click on the submit button.

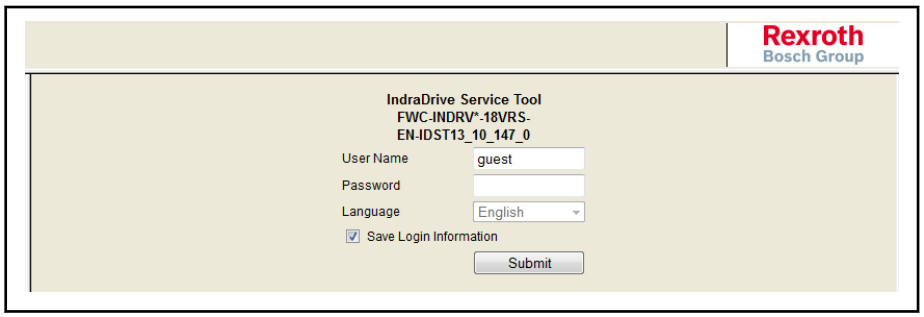

Fig. 6-2: IndraDrive Service Tool login page

For more information see also chapter 4.4 First login on page 32.

6.3.3 Header

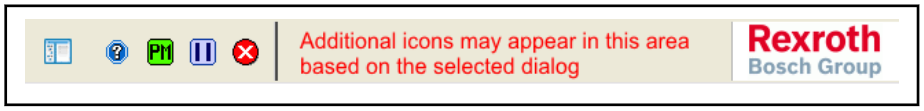

Fig. 6-3: IndraDrive Service Tool header

In the IDST header, the Bosch Rexroth logo is displayed on the right side and the standard toolbar of the IDST is displayed on the left side.

IndraDrive Service Tool

Standard icons	Description
Navigation icon 	Use this icon to show or hide the navigation structure. Hide the navigation structure to use the entire width of the window for dialog display.
Help icon 	This icon opens the diagnostic help. If there is no help available when the IDST is called, this icon is not displayed.
Device status icon 	Displays the current device status. Authorized users may change the device status. The following device statuses may be displayed: PM - parameter mode OM - operating mode
PLC status icon  PLC Run  PLC Stop  PLC Init	Displays the current PLC status.
Error/warning icon  Error icon  Warning icon	Displays the current error or warning state if one of the connected drives reports an error or warning. Select this icon in the case of an error to display the respective error source.

Tab. 6-4: Standard icons in the header

The dialog-specific icons that are additionally displayed in the header are explained by tooltips and are therefore not explained in detail.

6.3.4 Tooltip functionality

Tooltip descriptions

The IDST provides tooltip descriptions for the icons in the toolbar and for fields and buttons displayed in the dialogs. The tooltips for icons in the toolbar describe the functions of the icons. The tooltips for fields or buttons show the drive parameters displayed at this position.

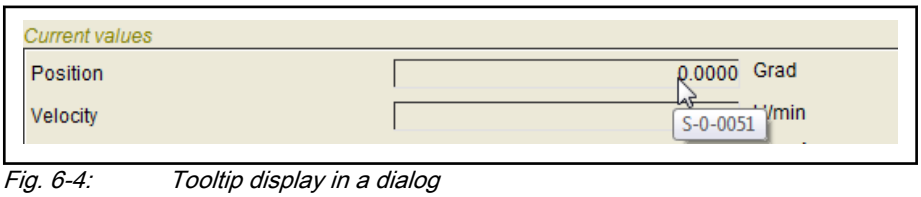

Fig. 6-4: Tooltip display in a dialog

6.3.5 Structure

Device directory

The connected device is displayed in the navigation structure. The device branch contains a service and a diagnostics directory. The service directory is only visible for authorized users and lists all service applications of the device. The diagnostics directory contains all device diagnostics available due to the device configuration.

Fig. 6-5: IndraDrive Service Tool device directory

7 Service and support

Our worldwide service network provides an optimized and efficient support. Our experts offer you advice and assistance should you have any queries. You can contact us **24/7**.

Service Germany

Our technology-oriented Competence Center in Lohr, Germany, is responsible for all your service-related queries for electric drive and controls.

Contact the **Service Helpdesk & Hotline** under:

Phone:	**+49 9352 40 5060**
Fax:	**+49 9352 18 4941**
E-mail:	service.svc@boschrexroth.de
Internet:	http://www.boschrexroth.com

Additional information on service, repair (e.g. delivery addresses) and training can be found on our internet sites.

Service worldwide

Outside Germany, please contact your local service office first. For hotline numbers, refer to the sales office addresses on the internet.

Preparing information

To be able to help you more quickly and efficiently, please have the following information ready:

- Detailed description of malfunction and circumstances resulting in the malfunction
- Type plate name of the affected products, in particular type codes and serial numbers
- Your contact data (phone and fax number as well as your email address)

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Notes

The Drive & Control Company

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Bosch Group

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