

MANUAL

**IST-HH20**  
**HANDHELD (250 KHZ)**



CE



With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

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# 1 Introduction

## Congratulations

You have chosen a device manufactured by Pepperl+Fuchs. Pepperl+Fuchs develops, produces and distributes electronic sensors and interface modules for the market of automation technology on a worldwide scale.

## Symbols used

This manual contains different symbols that draw your attention to information or instructions.



### **Note!**

This symbol brings important information to your attention.



### **Action**

This symbol marks an acting paragraph.

The following chapters contain the most important instructions:

- Basic operation: see chapter 6.2
- Description of the most important tasks: see chapter 7
- Complete description of all menu entries: see chapter 9

If you have any queries regarding the device, accessories or advanced functions, please contact:

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D-68307 Mannheim  
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e-mail: [fa-info@de.pepperl-fuchs.com](mailto:fa-info@de.pepperl-fuchs.com)

## 2 Declaration of Conformity

This product has been developed and manufactured in accordance with applicable European standards and directives.



**Note!**

A Declaration of Conformity can be requested from the manufacturer.

The manufacturer of this product, Pepperl+Fuchs GmbH, in D-68307 Mannheim, Germany, has a certified quality management system in accordance with ISO 9001.



### 2.1 Declaration of Conformity

The device has been tested for compliance with FCC regulations Tests confirmed that all valid FCC rules and regulations have been complied with.



**Note!**

The device may not be used in the vicinity or in combination with another antenna or a transmitter in order to meet the requirements stipulated in FCC RF exposure guidelines.

## 3 Safety

### 3.1 Symbols relevant to safety



**Danger!**

This symbol indicates a warning about a possible danger.

In the event the warning is ignored, the consequences may range from personal injury to death.



**Warning!**

This symbol indicates a warning about a possible fault or danger.

In the event the warning is ignored, the consequences may course personal injury or heaviest property damage.



**Caution!**

This symbol warns of a possible fault.

Failure to observe the instructions given in this warning may result in the devices and any connected facilities or systems develop a fault or fail completely.

### 3.2 Intended use

The Handheld was designed for identifying RFID code and data carriers within a defined frequency range and should be used for this purpose only. Examples of device applications include manual quality control and verifying maintenance work.

Operating the Handheld in a way different from that described in these instructions may have a negative effect on the reliability and function of the device and connected systems. Protection of operating personnel and the overall system is no longer guaranteed if the device is not used as specified.



**Caution!**

Modified or separate JavaScript programs

Data reading and writing processes may be influenced or disrupted.

- Do not modify the JavaScript programs provided by the manufacturer.
- Check whether the identification function of self-configured JavaScript programs is affected.



### 3.3 General notes on safety

Installation and commissioning of all devices must be performed by a trained professional only.

When packing the device for storage or transport, use materials that will protect the device from bumps and impacts and protect against moisture. The original packaging provides the best protection. Also take into account the permitted ambient conditions.

Do not open, burn or short-circuit the battery. The battery may ignite, explode, leak or heat up and become irreparably damaged.

Always charge the battery using approved cables.

The Handheld supports different interfaces such as Bluetooth, USB, RS 232 or PS/2. Always use correctly configured devices and the recommended original accessories to ensure reliable communication.

The operating company bears responsibility for observing locally applicable safety regulations.

Independent interventions and separate modifications are dangerous and will void the warranty and exclude the manufacturer from any liability. If serious faults occur, stop using the device. Secure the device against inadvertent operation. In the event of repairs, send the device to Pepperl+Fuchs.

Do not dispose of storage batteries with the household refuse.



Consumers are obliged by law to dispose of used storage batteries in accordance with regulations. You can hand in your used batteries at public collection points in your area or sales points where batteries of that particular kind are sold. You can also send your used batteries directly to us for disposal. Please remember that this service is only available within the scope of normal use. If you wish to send back your used batteries, please affix sufficient postage stamps and send to our address. There are no extra charges for disposal.

## 4 Product description IST-HH20

### 4.1 Use and application

#### Handheld

IDENTControl by Pepperl+Fuchs is a proven system designed for stationary RFID applications. A portable device for process monitoring (reading/writing functions, data carrier initialization) is provided with this Handheld.

One new feature is the cellphone design with keypad and display for intuitive operation. Frequently recurring actions can be performed by pressing one of two configurable keys. JavaScript provides a familiar cross platform programming language to enhance system functionality for the user.

In addition to a lithium ion storage battery, a large permanent memory and the option of 2.45 GHz band wireless communication based on the Bluetooth standard ensure maximum mobility.



#### Data carrier 250 kHz (inductive)

Data carriers from this frequency range achieve a higher reading speed than 125 kHz data carriers. ICC ... code carriers with a 28 bit fix code and IDC ... data carriers with a memory capacity of 1 kBit are available in various designs.

## 4.2 LED indicators and control keys

The device has the following LED indicators and control keys:



- 1 Status LED
- 2 LC display
- 3 Softkeys
- 4 Navigation keys
- 5 Trigger keys
- 6 Keypad
- 7 Interface
- 8 Battery compartment
- 9 Read/write head

### 4.2.1 Status LED

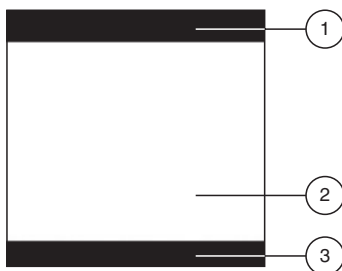
The status LED indicates the following states:

#### Meaning of the status LED

Status	Description
Lights up green	<ul style="list-style-type: none"> <li>The Handheld has been switched on.</li> <li>The interface has been modified.</li> <li>Data has been read or written.</li> </ul>
Flashing yellow	The Handheld has successfully completed a read or write command.
Red flashing	The Handheld has unsuccessfully completed a read or write command and reports an error.
Off	Read/Write head is inactive

### 4.2.2 Display




















The display on the device is divided into different areas:







- 1 Toolbar
- 2 Display
- 3 Softkey bar

The following table lists all the symbols on the toolbar and the functions they perform:

### Symbols in the toolbar



Symbol	Description
<b>Charging status</b>	
	The capacity of the battery is between 50 % and 100 %.
	The capacity of the battery is between 20 % and 50 %.
	The capacity of the battery is between 0 % and 20 %. Recharge the battery.
	Battery is charged.
<b>Connection status</b>	
	The Handheld is connected to an interface.
	RS 232 is selected as the active interface.
	PS/2 is selected as the active interface.
	USB is selected as the active interface.
	Bluetooth is selected as the active interface.
<b>Data transfer</b>	
	Data transfer in one direction: data is transferred from the Handheld to the connected computer. A response from the computer is not required.
	Data transfer in two directions: data is transferred from the Handheld to the connected computer. The Handheld then waits for a response from the computer.
	Keyboard mode: the Handheld is connected to the computer via a USB or PS/2 interface.
	Virtual COM port mode: the Handheld emulates an RS 232 interface via the USB interface allowing communication from the computer to the Handheld. A response from the computer is not required.
<b>Memory status</b>	
	0 % to 25 % of the internal memory is occupied.
	25 % to 50 % of the internal memory is occupied.
	50 % to 75 % of the internal memory is occupied.
	75 % to 100 % of the internal memory is occupied.
	The internal memory is full. You can no longer store data on the internal memory.
	Batch mode inactive. Data is not buffered in the internal memory.

Symbol	Description
<b>Input mode</b>	
	Numerical input mode - data entered using the keys appears in the form of numbers.
	Alphabetical input mode - data entered using the keys appears in the form of letters.
	Alphabetical input mode - data entered using the keys appears in the form of lower case letters.
	Symbol input mode - data entered using the keys appears in the form of symbols.






### 4.2.3 Key overview

The following table lists all keys on the device and the functions they perform:



#### Softkeys

Keys	Designation
	Left softkey
	Right softkey













#### Navigation keys

Keys	Designation
	Up navigation key
	Down navigation key
	Left navigation key
	Right navigation key
	Enter navigation key

Trigger keys

Keys	Description
	Left trigger key
	Right trigger key

Input keys

Keys	"Numerical" mode	"Alphanumerical upper case" mode	"Alphanumerical lower case" mode	"Symbols" mode
	Switches between "Numerical", "Alphanumerical upper case", "Alphanumerical lower case" and "Symbols" mode.			
	1	Space, 1	Space, 1	Space ) < _
	2	A, B, C, 2	a, b, c, 2	! * = `
	3	D, E, F, 3	d, e, f, 3	" + > {
	4	G, H, I, 4	g, h, i, 4	# , ?
	5	J, K, L, 5	j, k, l, 5	\$ - @ }
	6	M, N, O, 6	m, n, o, 6	% . [ ~
	7	P, Q, R, S, 7	p, q, r, s, 7	& / \ Space
	8	T, U, V, 8	t, u, v, 8	' : ] Space
	9	W, X, Y, Z	w, x, y, z	( ; ^ Space
	0	0	0	Scrolls through the different symbol pages
	For data input fields: delete the last character. Otherwise: ESC function (exits the menu without adopting the current settings.)			

### 4.3 Interfaces

The handheld has the following interfaces:



1 8-pin connecting socket

### 4.4 Scope of supply

The scope of supply includes:

- Handheld without storage battery or battery compartment cover
- CD with documentation (manual)



**Note!**

You will require other components in addition to the Handheld included in the scope of supply to complete assembly of the device. The basic equipment includes: Handheld, battery and charging station. Missing components can be ordered from Pepperl + Fuchs.



## 4.5 Accessories

Different connection cables, handles, mounts, storage batteries and a range of accessories for chargers and interfaces are available for this Handheld.

### 4.5.1 Connecting cable

The following connecting cables are available as an option:

Designation	Description
ODZ-MAH-CAB-B14	Connecting cable USB interface, length approx. 180 cm
ODZ-MAH-CAB-R2	Connecting cable RS 232 interface, length approx. 120 cm
ODZ-MAH-CAB-R6	Connecting cable PS/2 interface, length approx. 120 cm

### 4.5.2 Accessories for interfaces

The following interfaces are available as optional accessories:

Designation	Description
ODZ-MAH-B15	Bluetooth modem (without cable), preset to USB
ODZ-MAH-B15-R2	Bluetooth modem (without cable), preset to RS232
ODZ-MAH-B15-R6	Bluetooth modem (without cable), preset to PS/2

### 4.5.3 Handles

The following handles are available as an optional accessory:

Designation	Description
ODZ-MAH-GRIP1	Handle, without battery
ODZ-MAH-GRIP2	Handle, with integrated lithium ion battery, capacity 1950 mAh
ODZ-MAH-GRIP3	Handle, with integrated lithium ion battery, capacity 3900 mAh

### 4.5.4 Storage batteries

The following batteries are available as an optional accessory:

Designation	Description
ODZ-MAH-BAT	Lithium ion battery, capacity 1950 mAh
ODZ-MAH-BLANK	Battery blank (for cable operation)

#### 4.5.5 Chargers

The following chargers are available as an optional accessory:

Designation	Description
ODZ-MAH200-CHARGER	Charger for 2 lithium ion storage batteries
ODZ-MAH-CHARGER	Battery charging tray for handles with integrated lithium ion storage battery
ODZ-MAH200-SUPPLY + ODZ-MAH-CAB-CHARGE	Plug supply unit with cable for direct connection of the Handheld
ODZ-MAH-CHARGER-SINGLE	Charger for I*T-HH20 with integrated battery ODZ-MAH-BAT

#### 4.5.6 Brackets

The following brackets are available as an option:

Designation	Description
ODZ-MAH300-BRACKET	Table bracket for Handhelds with display

## 5 Installation

### 5.1 Preparation



#### Unpacking the unit

1. Check that all package contents are present and undamaged.  
If anything is damaged, inform the shipper and contact the supplier.
2. Check that all items are present and correct based on your order and the shipping documents.  
If you have any questions, please contact Pepperl+Fuchs.
3. Keep the original packing material in case you need to store or ship the unit at a later time.



#### Fitting the battery

Fit the battery as follows:

1. Turn the battery so that you can remove it as shown in the illustration.



2. Slide the plastic tab on the battery into the corresponding recess on the Handheld.



3. Push the locking device upwards and push in the battery.



4. Push the battery in the Handheld, hold in position and release the locking device so that the battery engages.



### Charging battery

Charge the battery as follows:

1. Connect the Handheld, including battery, to an interface cable.
2. Connect the interface cable to the switched-on computer.

When the Handheld is switched on, the symbols displayed in the toolbar indicate the charging status of the Handheld. Overview table "Symbols in the toolbar" on page 13



#### **Note!**

If you are operating the handheld via an RS 232 interface, connect the RS 232 interface power supply unit to the socket to charge the battery.



#### **Note!**

#### **Completely discharged storage batteries**

If the storage battery is completely discharged, you will have to wait at least 10 minutes before the Handheld is ready for operation again.

## 5.2 Handle installation



### Fitting the standard handle

Fit the handle to the Handheld as follows:

1. Insert the Handheld including battery in the mount on the handle.



2. Push the Handheld back until the plug on the handle enters the cable connection socket on the Handheld.
3. Press the Handheld firmly onto the plug until it is flush with the handle.



The Handheld is now fitted to the handle.



### Fitting a handle with cable connection

Fit the handle to the Handheld as follows:

1. Remove the battery from the battery compartment of the Handheld if necessary.
2. Carefully pull the rear, flexible part of the handle attached to the plug downwards.
3. Attach the cable connection socket on the Handheld to the plug on the handle.
4. Slide the plastic tab on the battery into the corresponding recess on the Handheld.



The Handheld is now fitted to the handle.

5. Push down the Handheld carefully until the locking device on the Handheld engages in the handle.
6. Connect the interface cable to the cable connection socket underneath the handle.

The Handheld is now ready for operation.



### Fitting a handle with integrated storage battery

A handle with integrated battery is also available for this Handheld as an optional accessory. Fit the handle to the Handheld as follows:

1. Remove the battery from the battery compartment of the Handheld if necessary.
2. Slide the plastic tab on the battery into the corresponding recess on the Handheld.
3. Push down the Handheld carefully until the locking device on the Handheld engages in the handle.

The Handheld is now fitted to the handle.



### Securing the interface cable against accidental removal

You have the option of fitting a protective cap in order to secure the interface cable against accidental removal. To do so, proceed as follows:

1. Connect the interface cable to the cable connection socket on the handle.
2. Guide the cable into the slot on the protective cap and push the protective cap towards the cable connection socket.
3. Ensure that you push the protective cap in the correct position over the interface cable.
4. Screw the protective cap to the handle using the screws supplied.



The interface cable is now secured against accidental removal.



#### **Note!**

For secure mounting of the Handheld, we recommend that you secure the Handheld using the screws supplied. Two holes have been drilled on the lower section of the handle for this purpose (see illustration).





### Removing the handle

Remove the handle as follows:

1. If you have secured the handheld with screws on the handle, remove the screws.
2. Push the locking device in the direction of the arrow and press the handheld out of the retainer.



The handle is removed.



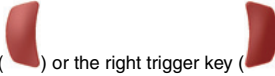
## 6 Commissioning



### 6.1 Switching on and off



#### Switching on the handheld

Switch on the Handheld as follows:



Press either the left trigger key (  ) or the right trigger key (  ) and hold for approx. 1 second.

The Handheld switches on.



#### **Note!**

The Handheld automatically switches to standby mode approx. 2 minutes after the key is last pressed.



#### **Note!**

The device switches on automatically when connected to the USB or PS/2 interface on your computer.










#### Switching off the Handheld

The Handheld switches off automatically if it remains idle for more than 2 hours.

## 6.2 Basic operation







### 6.2.1 Navigation through menus

Key	Function
Up navigation key (  )	Browse upwards in different menus and submenus
Down navigation key (  )	Browse downwards in different menus and submenus
Enter navigation key (  )	Select menu, submenu and individual menu entries
Left softkey (   )	Function depends on the menu. You can usually use this key to confirm a command (e.g. OK) or execute a command (e.g. read).
Right softkey (   )	Function depends on the menu. You can usually use this key to terminate or abort a command (e.g. ESC).









#### Activating/Deactivating menu entries

Activate/Deactivate a menu entry follows:

1. Press the up navigation key (  ) or the down navigation key (  ) to browse to the required menu entry.  
The menu entry currently selected is highlighted in black.
2. Press the Enter navigation key (  ) to activate the menu entry.  
An asterisk appears in front of the activated menu entry.
3. Press the Enter navigation key again (  ) to deactivate the menu entry.  
The asterisk in front of the deactivated menu entry disappears.
4. Press the left softkey (   ) to confirm your selection.

### 6.2.2 Data entry

Keys	Function
Input keys 0 to 9 (   to   )	Entering numbers or letters (depending on the mode selected).
SHIFT input key (  )	Switching between the different input modes. (The selected mode appears on the left of the toolbar on the Handheld.)
CLEAR input key (  )	For data input fields: delete the last character entered. Within menus: exit menu.

## 6.3 Operating modes



**Caution!**

Data loss

An incorrectly preset interface may lead to data loss.

Make sure that the Handheld is connected to the interface (USB, RS 232, Bluetooth) preset in the Handheld. If necessary, use another interface cable or modify the settings in the Handheld.

### 6.3.1 Wireless operation (batch mode)

For certain applications, wireless operation of the Handheld is recommended. As soon as you remove the interface cable (USB, RS 232 cable), or you are outside the range of a Bluetooth connection, the Handheld switches automatically to "Batch mode": In this mode, the data read is buffered in the internal memory of the Handheld. This allows you to transfer the data saved in the Handheld to a computer at a later time.



**Note!**

**Using batteries**

You will require a battery or a handle with integral battery to use the Handheld without a cable as well as for cable operation with RS232.

A battery is not usually required for cable mode via USB. However, this depends on the strength of the current supplied from the USB connection on the computer. If the computer does not supply sufficient current to the USB connection, you will require a USB hub with separate bulk power supply or a battery for the Handheld.





This optional accessory (see chapter 4.5) is available from Pepperl+Fuchs.

### 6.3.2 Cable operation: RS 232



#### Adjusting the settings for the RS 232 interface on the Handheld

Adjust the settings for the RS 232 communication interface on the Handheld as follows:

1. Select **Settings > Communication**
2. Activate the interface **RS232**.  
The **RS232** submenu opens.
3. Configure the relevant parameters.
4. Press the left softkey (   ) to confirm your entries.  
The interface is now activated.
5. Press the right softkey (   ) to exit the menu.



#### **Tip**

Further information on interface settings see chapter 9.3.7



#### Connecting the interface cable to the Handheld

To connect the interface cable to the Handheld, proceed as follows:

1. Turn the 8-pin DIN plug so that the arrows on the plug are pointing downwards.
2. Hold the Handheld in your hand with the controls facing upwards.
3. Insert the plug into the corresponding cable connection socket on the Handheld.
4. Press the plug firmly into the cable connection socket until the locking device audibly engages.  
The interface cable is now connected to the Handheld.



#### **Note!**

#### **Connection cable with fitted grip**



If you have mounted the Handheld to the optional grip, connect the interface cable to the cable connection socket on the grip.



#### Connecting the Handheld to the computer via the RS 232 interface cable

Connect the Handheld to the computer as follows:

1. Switch off the computer.
2. Connect the RS 232 plug on the interface cable to the RS 232 interface on the computer.
3. Connect the low-voltage plug on the power supply unit to the low-voltage socket on the RS 232 interface cable.
4. Connect the power supply unit to the mains power supply.
5. Switch on the computer.

The Handheld switches on automatically once you have connected it to the computer. The symbols  and  are displayed in the toolbar.

### 6.3.3 Cable operation: PS/2



Adjusting the settings for the PS/2 interface on the Handheld

Adjust the settings for the PS/2 communication interface on the Handheld as follows:

1. Select **Settings > Communication**.
2. Activate the **PS2** interface.  
A prompt appears asking you whether you wish to use the Handheld in PS2 mode.

3. Press the left softkey (   ) to confirm your selection.  
The interface is now activated.

4. Press the right softkey (   ) to exit the menu.



**Note!**

**Required PS/2 interface cable**

You will require a PS/2 interface cable with the following connectors to connect the Handheld to the computer:

- **8-pin DIN connector** for connection to the Handheld.
- **PS/2 socket** for connecting an external keyboard.
- **PS/2 connector** for connection to the computer.



Connecting the interface cable to the Handheld

To connect the interface cable to the Handheld, proceed as follows:

1. Turn the 8-pin DIN plug so that the arrows on the plug are pointing downwards.
2. Hold the Handheld in your hand with the controls facing upwards.
3. Insert the plug into the corresponding cable connection socket on the Handheld.
4. Press the plug firmly into the cable connection socket until the locking device audibly engages.

The interface cable is now connected to the Handheld.



Connecting the Handheld to the computer via the PS/2 interface cable

1. Switch off the computer.
2. If an external keyboard is connected to the computer, disconnect it.
3. If you are using a USB keyboard, connect the keyboard to the PS/2 socket on the interface cable using a suitable adapter. If you are using a keyboard with PS/2 plug, insert the plug directly into the PS/2 socket on the interface cable.
4. Connect the PS/2 plug on the interface cable to the keyboard port on the computer.
5. Switch on the computer.

The Handheld switches on automatically once you have connected it to the computer. The

symbols  and  are displayed in the toolbar.






Voltage is supplied to the Handheld via the PS/2 interface. An additional power supply unit is therefore not necessary.

### 6.3.4 Cable operation: USB



Adjusting the USB interface settings on the Handheld

Adjust the settings for the USB communication interface on the Handheld as follows:

1. Select **Settings > Communication**
2. Activate the interface **USB**.  
The **USB** submenu opens.
3. Press the Enter navigation key (  ) to activate the desired mode.
4. Press the left softkey (   ) to confirm your entries.  
The interface is now activated.
5. Press the right softkey (   ) to exit the menu.



**Tip**

Further information on interface settings see chapter 9.3.7



Connecting the interface cable to the Handheld

To connect the interface cable to the Handheld, proceed as follows:

1. Turn the 8-pin DIN plug so that the arrows on the plug are pointing downwards.
2. Hold the Handheld in your hand with the controls facing upwards.
3. Insert the plug into the corresponding cable connection socket on the Handheld.
4. Press the plug firmly into the cable connection socket until the locking device audibly engages.  
The interface cable is now connected to the Handheld.



**Note!**

**Connection cable with fitted grip**



If you have mounted the Handheld to the optional grip, connect the interface cable to the cable connection socket on the grip.



Connecting the Handheld to the computer via the USB interface cable

Connect the Handheld to the computer as follows:

Insert the USB plug on the interface cable into a free USB port on the computer. It does not matter whether the computer is switched on or off.

The Handheld switches on automatically once you have connected it to the computer. The symbols  and  are displayed in the toolbar.

### 6.3.5 Operating with Bluetooth

This Handheld has a wireless Bluetooth interface with a class 1 radio device that enables wireless point-to-point communication with other Bluetooth-compatible devices. If the other Bluetooth-compatible device also has a class 1 radio device, this results in a range of approx. 100 m in free field. The ranges of connections with a Bluetooth-compatible class 2 or 3 device are correspondingly shorter.

If the Handheld is outside the range, it saves the read data in the internal memory. The Handheld continues attempting to send the read data until the connection to the Bluetooth-compatible device is restored. As soon as the Handheld sends the data to the Bluetooth-compatible device, the data is deleted automatically from the internal memory.






**Note!**



You will require a MAC address to establish a connection between the Handheld and a Bluetooth-compatible device. This MAC address is usually printed next to the serial number on the Bluetooth device or in the manual accompanying your Bluetooth device.



#### Connecting the Handheld via Bluetooth

Establish a connection between the Handheld and a Bluetooth-compatible device (e.g. laptop with corresponding Bluetooth USB dongle) as follows:

1. Select **Settings > Communication**.
2. Activate the **Bluetooth** interface.  
The **Bluetooth** submenu opens.
3. Press the Enter navigation key (  ) to activate the desired mode.
4. Enter the MAC address in the data input field of menu entry BD\_MAC.
5. Press the left softkey (   ) to confirm your entries.

The connection between the two devices is established. Under certain circumstances, you may have to wait a few moments before the connection is established. The symbols  and  are displayed in the toolbar.

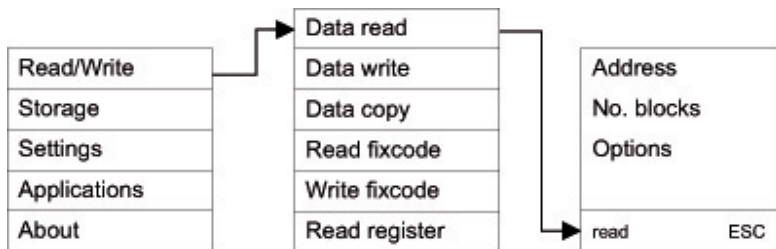


**Tip**

Further information on interface settings see chapter 9.3.7

## 7 Operation

### 7.1 Read data



The Handheld cannot read the data stored on a data carrier until you select the correct setting for the data carrier type, known as the **Tag type**.

The read data is saved in the Handheld or sent to the computer depending on the setting **Settings > Send/Log** (see chapter 6.3).

If you wish to add a time stamp to the read data, activate the menu entry **ON** in the **Settings > Time stamp** menu.

#### Address


In the data input field of the **Address** menu entry, you have the option of changing the start address.

Start addresses specify the location of the individual data blocks on data carriers. You can read out specific data blocks and transfer data by changing the start address.



#### Defining a start address



Define the start address as follows:

1. Select **Address**.
2. Enter the start address using the input keys.
3. Press the left softkey (  ) to confirm your entry.



#### Setting the number of blocks

The number of blocks determines how many data blocks the Handheld reads from the data carrier and how many data blocks can be written to the data carrier. Each block corresponds to 4 bytes.


1. Select **Read/Write > Data read > No. blocks**.
2. Refer to the table to calculate how many blocks you require to enter the relevant data.
3. Press the CLEAR input key (  ) to delete the quantity already entered.
4. Enter the number of blocks using the input keys.
5. Press the left softkey (  ) to conform your entry.





### Reading data on data carriers

Read data on a data carrier as follows:

1. Select **Read/Write > Data read**.
2. Position the read/write head on the Handheld directly beside the data carrier.
3. Press the left softkey (   ).

If the read process is successful, the status LED lights up yellow and then green. If you have activated the buzzer and the vibration alarm in the Settings menu, an acoustic signal sounds and the Handheld vibrates. The read data is then displayed in line with the selected data format. If the transfer was unsuccessful, the status LED briefly flashes red and a fault indication is issued. See see chapter 8



#### **Tip**

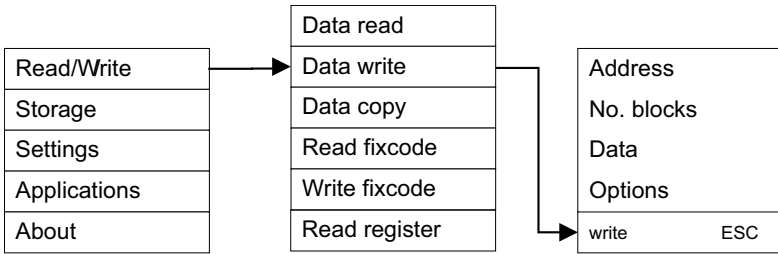
Other options see chapter 9.1.1



#### **Note!**

All data is displayed in the data format (ASCII, HEX, DEC) selected in the Data format submenu.

## 7.2 Writing data








The following table shows how to enter data into the Handheld.

### Data formats

Data format	Notes	Block quantity (maximum 32)	Format	Example
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	01	xxxx	HAND
		02	xxxx xxxx	HAND HELD
		03	...	
HEX (hexadecimal)	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	01	xx xx xx xx (spaces are not required)	11 22 11 22
		02	xx xx xx xx xx xx xx xx	11 22 11 22 1A 2B 3C 4D
		03	...	
DEC (decimal)	In decimal data format, numbers 0 to 255 are available.	01	xxx xxx xxx xxx (spaces are not required)	111 222 111 222
		02	xxx xxx xxx xxx xxx xxx xxx xxx	111 222 111 222 010 020 030 040
		03	...	






### Setting the data format

1. Select **Read/Write > Data write > Options > Data format**.
2. Press the Enter navigation key (  ) to activate the relevant data format.
3. Press the left softkey (   )
4. Press the right softkey (   ) to exit the Options menu.



### Setting the number of blocks








The number of blocks determines how many data blocks the Handheld reads from the data carrier and how many data blocks can be written to the data carrier. Each block corresponds to 4 bytes.

1. Select **Read/Write > Data read > No. blocks**.
2. Refer to the table to calculate how many blocks you require to enter the relevant data.
3. Press the CLEAR input key (  ) to delete the quantity already entered.
4. Enter the number of blocks using the input keys.
5. Press the left softkey (   ) to conform your entry.



### Transferring data to data carriers

Transfer data to a data carrier as follows:

1. Select **Write/Read > Write data > Data**.  
One or more data input fields are displayed (the number of data input fields displayed depends on the block quantity.)
2. Press the up navigation key (  ) and the down navigation key (  ) to navigate to the individual data input fields.
3. Enter the relevant data in the correct syntax for the data format selected using the input keys.
4. Press the CLEAR input key (  ) to delete individual characters. You can only delete the last character entered, not individual characters within the character string.
5. Press the left softkey (   ) to confirm your entry.  
If the character entered does not correspond with the syntax of the data format, a fault indication is issued and the value is not accepted.
6. Position the read/write head on the handheld directly beside the data carrier.
7. Press the left softkey (   ) to write the data to the data carrier.  
If the write process is successful, "OK" appears on the display and the status LED flashes green. If you have activated the buzzer and the vibration alarm in the Settings menu, an acoustic signal sounds and the handheld vibrates. If the transfer was unsuccessful, the status LED briefly flashes red and a fault indication is issued.

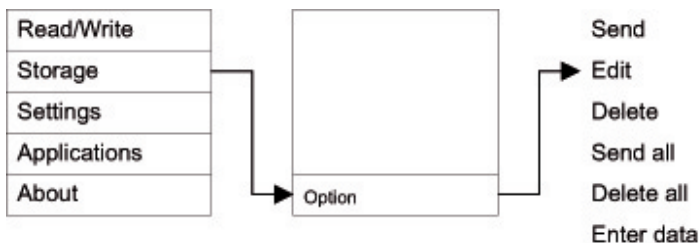


**Note!**

**Observe the input format**

Data bytes in hexadecimal data format must always contain 2 characters and data bytes in decimal data format must contain 3 characters.



## 7.3 Editing and entering data manually



### Editing data manually


Edit data that has already been entered as follows:

1. Select **Storage**.

2. Press the left navigation key (  ) or right navigation key (  ) to browse to the relevant data record.

3. Press the left softkey (  ) (  ) to open the options.

4. Select **Edit**.

5. Press the  key to delete individual characters. You can only delete the last characters entered, not individual characters within the character string.

6. Enter the required modifications using the input keys.

7. Press the left softkey (  ) (  ) to confirm your modification.

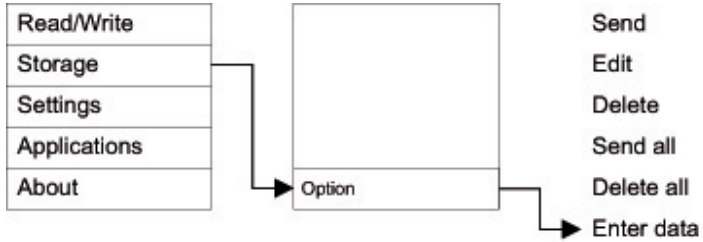
The value in the memory is edited.



### **Note!**




#### **Observe the input format**

Data bytes in hexadecimal data format must always contain 2 characters and data bytes in decimal data format must contain 3 characters.



### Entering data manually

Enter a new value as follows:

1. Select **Storage**.
2. Press the left softkey (   ) to open the options.
3. Select **Enter data**.
4. Enter the data record using the input keys.
5. Press the Enter navigation key (  ) to confirm your entry.  
The value is saved as a new data record.



**Note!**

**Observe the input format**

Data bytes in hexadecimal data format must always contain 2 characters and data bytes in decimal data format must contain 3 characters.

## 8 Troubleshooting

### 8.1 Error message "no tag"



Possible cause	Fault Rectification
No data carrier within reception range	Position the Handheld correctly or move the data carrier within the reception range.
Incorrect data carrier type setting	Set the correct data carrier type.

### 8.2 Error message "Connect failed!"



Possible cause	Fault Rectification
Incorrect interface setting	Select the correct interface and configure accordingly
No interface available	Connect the correct interface cable.

8.3 Error message "No stored data"



Possible cause	Fault Rectification
All data transferred and "Auto delete" mode active	-
No data in the memory	Read or enter data manually.

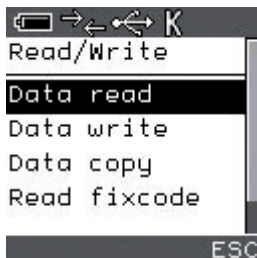
8.4 Error message "No Data to copy"



Possible cause	Fault Rectification
No data has been read in up to now.	Data stored in the memory cannot be copied in the "Copy data" menu. Read in the data in the Copy data menu and copy it directly from the menu.

## 9 Software description PF\_Ident

### 9.1 Read/Write menu



The following options are available in the **Read/Write** menu:

- Reading data on data carriers. (**Data read**)
- Writing data to data carriers. (**Data write**)
- Reading data on one data carrier and copying it to another. (**Data copy**)
- Reading the fix code on a data carrier. (**Read fixcode**)
- Program data carriers with a code that the fix code system can read in the same way as a code carrier (**Make ICC**)
- Reading the special fix code on a data carrier. (**Read spec. fix**)
- Writing special fix codes to data carriers. (**Write spec. fix**)
- (**Initialise tag**)
- Overwriting data carriers. (**Fill tag**)



#### **Note!**

#### **Save energy**

More power is required when the read/write head is switched on.

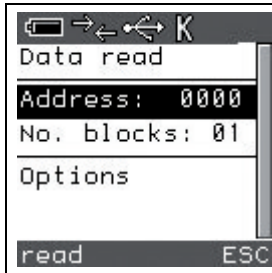
The read/write head on the Handheld switches on as soon as you execute a command in the **Read/Write** menu. This is indicated by the lit green LED. The read/write head is only switched off when you exit the relevant submenu.



### 9.1.1 Read/Write > Data read

In this menu, you have the option of reading data located on a data or code carrier.

#### Data read menu

	
Submenu	<b>Options</b>
Menu entry	Address No. blocks

#### Description of menu entries

##### Address



In the data input field of the **Address** menu entry, you have the option of changing the start address.

Start addresses specify the location of the individual data blocks on data carriers. You can read out specific data blocks and transfer data by changing the start address.



##### Defining a start address

Define the start address as follows:

1. Select **Address**.
2. Enter the start address using the input keys.
3. Press the left softkey (   ) to confirm your entry.

##### Number of blocks


In the data input field of the **No. blocks** menu entry, you have the option of changing the number of blocks.

The number of blocks determines how many data blocks the Handheld reads from the data carrier and how many data blocks are written to the data carrier. Each address block contains 4 bytes, i.e. in ASCII format, you can enter 4 characters for each block in the data input field of the **Data** menu entry, in hexadecimal data format 8 characters (2 characters each) and in decimal data format 12 characters (3 characters each).

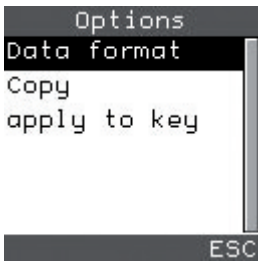


### Changing the number of blocks

Change the number of blocks as follows:

1. Select **No. blocks**
2. Press the CLEAR input key (  ) to delete the quantity already entered.
3. Enter the number of blocks using the input keys.

### Options submenu

	
Submenu	<b>Data format apply to key</b>
Menu entry	Copy

### Description of menu entries



#### Copy

You can use the **Copy** menu entry to transfer the data currently being read to the **Data write** menu.



#### Data copy

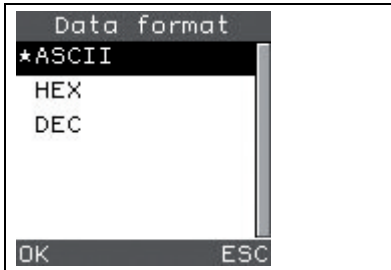
To use this option to copy data, proceed as follows:

1. Read in the data on one or more data carriers.
2. After reading in the last data carrier, press the right softkey (   ) to exit read mode.
3. Select **Options > Copy**.

If the copy process is successful, "Data assumed" appears on the display and the status LED lights up green. If the copy process fails, a fault indication is issued.

See see chapter 8

**Data format submenu**

	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu****Data format**

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.


**Description of menu entries****Data formats**

Data format	Notes	Format
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	xxxx (per block)
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	xx xx xx xx (spaces are not required) (per block)
DEC	In decimal data format, numbers 0 to 255 are available.	xxx xxx xxx xxx (spaces are not required) (per block)

**Note!****Changing the data format**

Modifications to the data format in this menu change the default setting **Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.

**apply to key submenu**



	
Submenu	--
Menu entry	left right handle

**Description of the submenu****apply to key**

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

**Instructions on Data read function****Reading data**

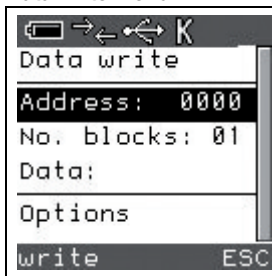
The entry **read** in the softkey bar prompts the read/write head on the Handheld to execute the **Data read** function. Data located on a data carrier or code carrier is read and either transferred to the Handheld memory or sent directly to a computer depending on the setting.

Detailed instructions see chapter 7.1

## 9.1.2 Read/Write > Data write

In this menu, you have the option of writing data to a data carrier.

### Data write menu

	
Submenu	<b>Options</b>
Menu entry	Address No. blocks Data

### Description of menu entries

#### Address



In the data input field of the **Address** menu entry, you have the option of changing the start address.

Start addresses specify the location of the individual data blocks on data carriers. You can read out specific data blocks and transfer data by changing the start address.



#### Defining a start address

Define the start address as follows:

1. Select **Address**.
2. Enter the start address using the input keys.
3. Press the left softkey (   ) to confirm your entry.

#### Number of blocks


In the data input field of the **No. blocks** menu entry, you have the option of changing the number of blocks.

The number of blocks determines how many data blocks the Handheld reads from the data carrier and how many data blocks are written to the data carrier. Each address block contains 4 bytes, i.e. in ASCII format, you can enter 4 characters for each block in the data input field of the **Data** menu entry, in hexadecimal data format 8 characters (2 characters each) and in decimal data format 12 characters (3 characters each).



### Changing the number of blocks

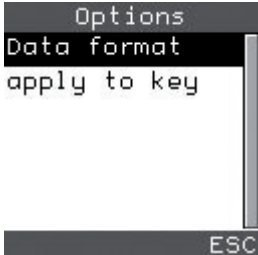
Change the number of blocks as follows:

1. Select **No. blocks**
2. Press the CLEAR input key (  ) to delete the quantity already entered.
3. Enter the number of blocks using the input keys.

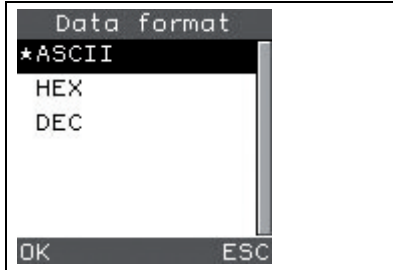
### Data

In the data input field of the **Data** menu entry, you have the option of entering data that you wish to write to the data carrier.

### Options submenu

	
Submenu	<b>Data format apply to key</b>
Menu entry	--

**Data format submenu**

	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu****Data format**

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.

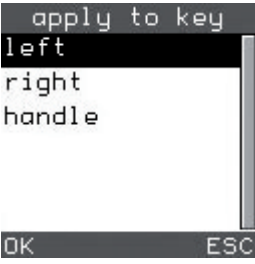
**Description of menu entries****Data formats**

Data format	Notes	Format
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	xxxx (per block)
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	xx xx xx xx (spaces are not required) (per block)
DEC	In decimal data format, numbers 0 to 255 are available.	xxx xxx xxx xxx (spaces are not required) (per block)

**Note!****Changing the data format**

Modifications to the data format in this menu change the default setting **Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.

**apply to key submenu**



	
Submenu	--
Menu entry	left right handle

**Description of the submenu****apply to key**

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

**Instructions on Write data function****Writing data**

The entry **write** in the softkey bar prompts the read/write head on the Handheld to execute the **Data write** function. The data is written to a data carrier entered in the Handheld beforehand.

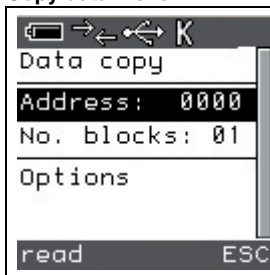
Detailed instructions see chapter 7.2



### 9.1.3 Read/Write > Data copy

In this menu, you have the option of copying a data record that you have just read in to one or more other data carriers

#### Copy data menu

	
Submenu	<b>Options</b>
Menu entry	Address No. blocks

#### Description of menu entries

##### Address



In the data input field of the **Address** menu entry, you have the option of changing the start address.

Start addresses specify the location of the individual data blocks on data carriers. You can read out specific data blocks and transfer data by changing the start address.



##### Defining a start address

Define the start address as follows:

1. Select **Address**.
2. Enter the start address using the input keys.
3. Press the left softkey (   ) to confirm your entry.

##### Number of blocks


In the data input field of the **No. blocks** menu entry, you have the option of changing the number of blocks.

The number of blocks determines how many data blocks the Handheld reads from the data carrier and how many data blocks are written to the data carrier. Each address block contains 4 bytes, i.e. in ASCII format, you can enter 4 characters for each block in the data input field of the **Data** menu entry, in hexadecimal data format 8 characters (2 characters each) and in decimal data format 12 characters (3 characters each).

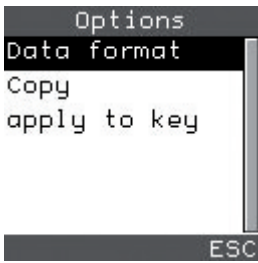


Changing the number of blocks

Change the number of blocks as follows:

1. Select **No. blocks**
2. Press the CLEAR input key (  ) to delete the quantity already entered.
3. Enter the number of blocks using the input keys.

Options submenu

	
<p>Submenu</p>	<p><b>Data format apply to key</b></p>
<p>Menu entry</p>	<p>Copy</p>

Description of menu entries



Copy

You can use the **Copy** menu entry to transfer the data currently being read to the **Data write** menu.



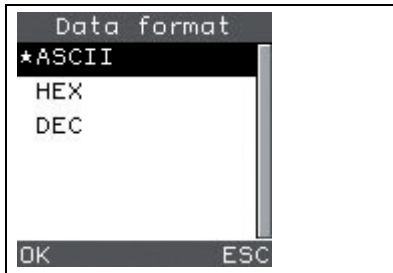
Data copy

To use this option to copy data, proceed as follows:

1. Read in the data on one or more data carriers.
2. After reading in the last data carrier, press the right softkey (   ) to exit read mode.
3. Select **Options > Copy**.

If the copy process is successful, "Data assumed" appears on the display and the status LED lights up green. If the copy process fails, a fault indication is issued.  
See chapter 8

**Data format submenu**

	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu****Data format**

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.


**Description of menu entries****Data formats**

Data format	Notes	Format
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	xxxx (per block)
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	xx xx xx xx (spaces are not required) (per block)
DEC	In decimal data format, numbers 0 to 255 are available.	xxx xxx xxx xxx (spaces are not required) (per block)

**Note!****Changing the data format**

Modifications to the data format in this menu change the default setting **Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.

**apply to key submenu**



	
Submenu	--
Menu entry	left right handle

**Description of the submenu****apply to key**

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**






Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

**Note!**

The trigger key configuration depends on which command was executed previously. If you executed a read command before opening the **apply to key** menu, a read command is assigned to the selected key. If you executed a write command, a write command is assigned to the selected key.

**Instructions on Copy data function****Copying data**

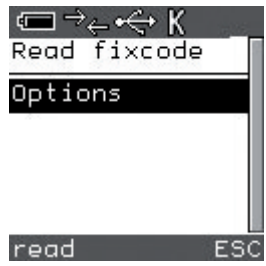
Copy a data record from one data carrier to another data carrier as follows:

1. Select **Read/Write > Data copy**.
2. Position the read/write head on the Handheld directly beside the data carrier from which you wish to copy the data record.
3. Press the left softkey (   ).  
The data record appears on the display.
4. Then position the read/write head on the Handheld directly beside the data carrier to which you wish to copy the data record.
5. Press the right softkey (   ).  
"OK" appears on the display.
6. Press the CLEAR input key (  ) to exit the function.

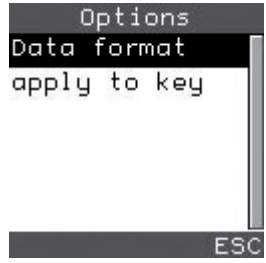
### 9.1.4 Read/Write > Read fixcode

In this menu, you have the option of reading the fixcode for a data carrier.

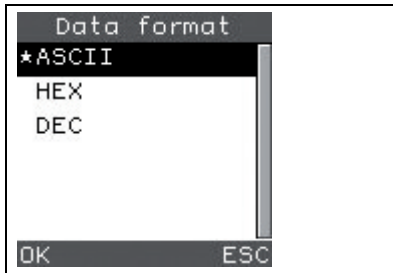
#### Read fixcode menu

	
Submenu	<b>Options</b>
Menu entry	--

#### Options submenu

	
Submenu	<b>Data format apply to key</b>
Menu entry	--

**Data format submenu**

	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu****Data format**

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.


**Description of menu entries****Data formats**

Data format	Notes	Format
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	xxxx (per block)
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	xx xx xx xx (spaces are not required) (per block)
DEC	In decimal data format, numbers 0 to 255 are available.	xxx xxx xxx xxx (spaces are not required) (per block)

**Note!****Changing the data format**

Modifications to the data format in this menu change the default setting **Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.

**apply to key submenu**

	
<p>Submenu</p>	<p>--</p>
<p>Menu entry</p>	<p>left right handle</p>



**Description of the submenu**

apply to key

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.



**Instructions on Read fixcode function**





### Read fixcode

Read the fixcode from a data carrier as follows:

1. Select **Read/Write > Read fixcode**.
2. Position the read/write head on the Handheld directly beside the data carrier.
3. Press the left softkey (   ).

If the read process is successful, the status LED lights up yellow and then green. If you have activated the buzzer and the vibration alarm in the Settings menu, an acoustic signal sounds and the Handheld vibrates. The read data is then displayed in line with the selected data format. If the transfer was unsuccessful, the status LED briefly flashes red and a fault indication is issued. See see chapter 8

4. Press the right softkey (   ) to exit the function.

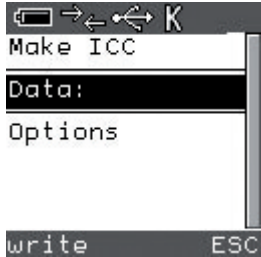
### 9.1.5 Read/Write > Make ICC

In this menu, you have the option of programming the data carrier IDC ... 1K to behave in the same way as ICC code carriers.

#### Make ICC

A unique code is allocated to code carriers used in the inductive fixcode system. The manufacturer guarantees that each code number is allocated only once for use in security-related applications where forgery protection is paramount. Forgery protection is not required in other applications. In contrast, code carriers with the same code are required to replace defective code carriers without having to modify the control software. When you work with several identical codes, the control is simplified in many applications. It must be possible to mix code and data carriers in applications of this kind, which means working with a read command that can read both code and data carriers. The read/write system uses separate commands to read data and code carriers. A read command for data carriers cannot read code carriers and vice versa.

#### Make ICC menu

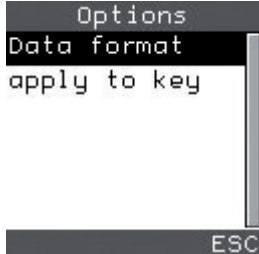
	
Submenu	<b>Options</b>
Menu entry	Data

#### Description of menu entries


##### Data

In the data input field of the **Data** menu entry, you have the option of entering data that you wish to write to the data carrier.

**Options submenu**

	
Submenu	<b>Data format</b> <b>apply to key</b>
Menu entry	--

**apply to key submenu**



	
Submenu	--
Menu entry	left right handle

**Description of the submenu****apply to key**

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.



**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

**Instructions on Make ICC function****Programming data carriers**

To program the data carrier to behave in the same way as a code carrier, proceed as follows:

1. Select **Read/Write > Make ICC > Data**.
2. The length of the entered data is 7 byte. Enter the first 3 characters in hexadecimal format and the last 4 numbers in decimal format using the input keys. This data must also be entered exactly in this sequence if a different data format is preset in the **Data format** submenu.
3. Position the read/write head on the Handheld directly beside the data carrier.
4. Press the left softkey (   ) to program the data carrier.

If the character entered does not correspond with the syntax of the data format, a fault indication is issued and the value is not accepted.

If the write process is successful, "OK" appears on the display and the status LED flashes green. If you have activated the buzzer and the vibration alarm in the Settings menu, an acoustic signal sounds and the Handheld vibrates. The read data is then displayed in line with the selected data format. If the transfer was unsuccessful, the status LED briefly flashes red and a fault indication is issued. See see chapter 8

**Note!****Observe the input format**

Data bytes in hexadecimal data format must always contain 2 characters and data bytes in decimal data format must contain 3 characters.


### 9.1.6 Read/Write > Read spec. fix

In this menu, you have the option of reading the special fixcode for a data carrier.

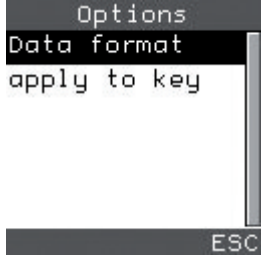
#### Special fixcode

Type IDC ... 1K data carriers can be programmed to read 24-bit information (the so-called "special fixcode") extremely quickly. This feature is useful for identifying containers in fully automatic storage facilities, for example.

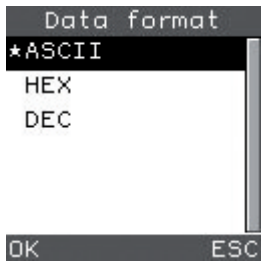
#### Read spec. fix menu

	
Submenu	<b>Options</b>
Menu entry	--

#### Options submenu

	
Submenu	<b>Data format apply to key</b>
Menu entry	--

**Data format submenu**

	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu**

Data format

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.

**Description of menu entries**

Data formats for the special fixcode

Data format	Notes	Format
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	xxxxxx (per block)
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	xx xx xx xx xx xx (spaces are not required) (per block)
DEC	In decimal data format, numbers 0 to 255 are available.	xxx xxx xxx xxx xxx xxx (spaces are not required) (per block)




**Note!**

**Changing the data format**

Modifications to the data format in this menu change the default setting **Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.

**apply to key submenu**

	
<p>Submenu</p>	<p>--</p>
<p>Menu entry</p>	<p>left right handle</p>



**Description of the submenu**

apply to key

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

**Instructions on Read spec. fix function****Read special fixcode**

Read the special fixcode of a data carrier as follows:

1. Select **Read/Write > Read spec. fix.**
2. Position the read/write head on the Handheld directly beside the data carrier.
3. Press the left softkey (   ) to read the special fixcode.

If the read process is successful, the status LED lights up yellow and then green. If you have activated the buzzer and the vibration alarm in the Settings menu, an acoustic signal sounds and the Handheld vibrates. The read data is then displayed in line with the selected data format. If the transfer was unsuccessful, the status LED briefly flashes red and a fault indication is issued. See see chapter 8




### 9.1.7 Read/Write > Read spec. fix

In this menu, you have the option of writing a special fix code to a data carrier.

#### Special fixcode

Type IDC ... 1K data carriers can be programmed to read 24-bit information (the so-called "special fixcode") extremely quickly. This feature is useful for identifying containers in fully automatic storage facilities, for example.

#### Write spec. fix menu

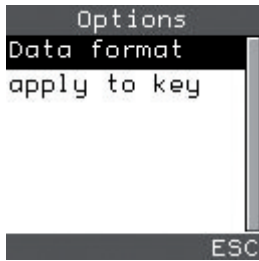
	
Submenu	<b>Options</b>
Menu entry	Data

#### Description of menu entries

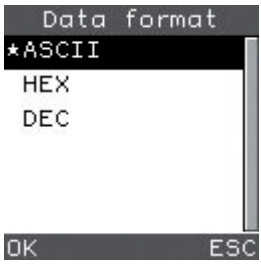
##### Data

In the **Data** field, you have the option of entering data that you wish to write to the data carrier.

#### Options submenu

	
Submenu	<b>Data format apply to key</b>
Menu entry	--

**Data format submenu**

	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu**

Data format

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.

**Description of menu entries**

Data formats for the special fixcode

Data format	Notes	Format
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	xxxxxx (per block)
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	xx xx xx xx xx xx (spaces are not required) (per block)
DEC	In decimal data format, numbers 0 to 255 are available.	xxx xxx xxx xxx xxx xxx (spaces are not required) (per block)




**Note!**

**Changing the data format**

Modifications to the data format in this menu change the default setting **Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.

**apply to key submenu**

	
<p>Submenu</p>	<p>--</p>
<p>Menu entry</p>	<p>left right handle</p>



**Description of the submenu**

apply to key

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

### Instructions on Write spec. fix function



#### Writing a special fixcode

Write a special fix code to a data carrier as follows:

1. Select **Read/Write > Write spec. fix > Data**.
2. Enter the relevant data in the correct syntax for the data format selected using the input keys.

3. Press the left softkey (   ) to confirm the entry.

If the character entered does not correspond with the syntax of the data format, a fault indication is issued and the value is not accepted.

4. Position the read/write head on the Handheld directly beside the data carrier.

5. Press the left softkey (   ) to write the special fix code to the data carrier.

If the write process is successful, "OK" appears on the display and the status LED flashes green. If you have activated the buzzer and the vibration alarm in the Settings menu, an acoustic signal sounds and the Handheld vibrates. The read data is then displayed in line with the selected data format. If the transfer was unsuccessful, the status LED briefly flashes red and a fault indication is issued. See see chapter 8



#### **Note!**

When a special fixcode is written to an IDC-...-1K data carrier, the data carrier is blocked. In order to write standard commands again, use the **Init. tag** command to lift this block.



#### **Note!**

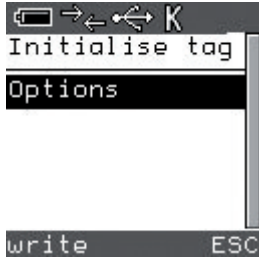
#### **Observe the input format**

Data bytes in hexadecimal data format must always contain 2 characters and data bytes in decimal data format must contain 3 characters.

### 9.1.8 Read/Write > Initialise tag

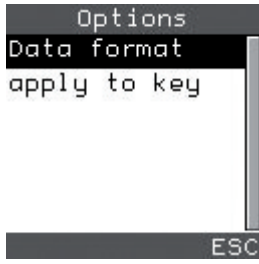
In this menu, you have the option of resetting the attribute bit of the data carrier. This function also lifts the block for conventional writing and reading of type IDC-...-1K data carriers that were set with a special fixcode.

#### Initialise tag menu

	
Submenu	<b>Options</b>
Menu entry	--

#### Description of menu entries

#### Options submenu

	
Submenu	<b>Data format apply to key</b>
Menu entry	--

**Data format submenu**

<pre> Data format *ASCII   HEX   DEC  OK          ESC </pre>	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu**

## Data format

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.

**apply to key submenu**

<pre> apply to key left right handle  OK          ESC </pre>	
Submenu	--
Menu entry	left right handle



**Description of the submenu**

## apply to key

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.

**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

**Instructions on Init. tag function****Resetting the attribute bit of a data carrier**


Reset the attribute bit of a data carrier as follows:

1. Select **Read/Write > Initialise tag.**
2. Position the read/write head on the Handheld directly beside the data carrier.
3. Press the left softkey (   ) to reset the attribute bit of the data carrier.

### 9.1.9 Read/Write > Fill tag

In this menu, you have the option of overwriting the complete data carrier with a separately defined character so that you can then format or delete it.

#### Fill tag menu


	
Submenu	Options
Menu entry	Data

#### Description of menu entries

##### Data

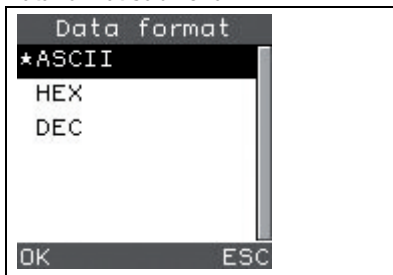
In the **Data** field, you have the option of entering data that you wish to write to the data carrier.

#### Options submenu

	
Submenu	Data format apply to key
Menu entry	--



**Data format submenu**

	
Submenu	--
Menu entry	ASCII HEX DEC

**Description of the submenu****Data format**

In the **Data format** submenu, you have the option of defining the format of data that you intend to read or write.


**Description of menu entries****Data formats for the Fill tag function**

Data format	Notes	Format
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.	x ASCII characters that cannot be displayed: /DEC (e.g. "/013" for CR)
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.	xx (spaces are not required)
DEC	In decimal data format, numbers 0 to 255 are available.	xxx (spaces are not required)

**Note!****Changing the data format**

Modifications to the data format in this menu change the default setting **Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.

**apply to key submenu**

	
<p>Submenu</p>	<p>--</p>
<p>Menu entry</p>	<p>left right handle</p>



**Description of the submenu**

apply to key

In the **apply to key** submenu, you have the option of assigning the command from the overriding menu to the trigger keys on the Handheld and the handle.

**Important:** the trigger key function is blocked when you open the **Settings** menu.






**Description of menu entries**

Key	Description
left	The command from the overriding menu is assigned to the left trigger key(  ).
right	The command from the overriding menu is assigned to the right trigger key(  ).
handle	The command from the overriding menu is assigned to the trigger key on the handle.

### Instructions on Overwrite tag function



#### Fill tag

1. Select **Read/Write > Fill tag > Data**.
2. Press the CLEAR input key (  ) to delete individual characters. You can only delete the last character entered, not individual characters within the character string.
3. Enter the value for overwriting the data carrier in the correct syntax for the data format selected using the input keys.
4. Press the left softkey (   ) to confirm the entry.  
If the character entered does not correspond with the syntax of the data format, an error message is issued and the value is not accepted.
5. Position the read/write head on the Handheld directly beside the data carrier.
6. Press the left softkey (   ).

If the read process is successful, "OK" appears on the display and the status LED flashes green. If you have activated the buzzer and the vibration alarm in the Settings menu, an acoustic signal sounds and the Handheld vibrates. The read data is then displayed in line with the selected data format. If the transfer was unsuccessful, the status LED briefly flashes red and a fault indication is issued. See chapter 8

## 9.2 Storage menu







In the **Storage** menu, you can save all read-in data records provided the corresponding setting has been enabled under **Settings > Send/Log**. The following options are available in the **Storage** menu:

- Browsing through stored data records.
- Sending individual/all data records.
- Editing data records.
- Deleting individual/all data records.
- Entering new data records.



### Selecting data records

The number of stored data records appears in the toolbar on the display (data record/all data records).

1. Press the left navigation key (  ) or the right navigation key (  ) to browse through the stored data records.
2. Press the left softkey (   ) to open the options.

### 9.2.1 Storage > Options

In this menu, you have the option of sending, modifying, deleting or manually entering data.

#### Options

<p>Submenu</p>		<p>--</p>
<p>Menu entry</p>		<p>Send Edit Delete Send all Delete all Enter data</p>

#### Description of menu entries





##### Send

This command gives you the option of sending the data record currently selected to the computer via the preset interface.



##### Sending data records

To send a data record to the computer via a preset interface, you must first select an interface in the **Settings > Interface** menu and connect the Handheld to the computer using an interface cable.

1. Press the left navigation key (  ) or the right navigation key (  ) to open the relevant data record.
2. Press the left softkey (   ) to open the options.

### 3. Select **Send**.

If the record is sent successfully, "[data record number] sent" appears in the status bar on the display.

### 4. Press the left navigation key ( ) or the right navigation key ( ) to open another data record.

### 5. Press the right softkey ( ) to exit the Memory menu.

## Edit

This command gives you the option of modifying the data record currently selected.



### **Note!**

#### **Observe the input format**

Data bytes in hexadecimal data format must always contain 2 characters and data bytes in decimal data format must contain 3 characters.



## Editing data records

Modify data records as follows:

### 1. Press the left navigation key ( ) or the right navigation key ( ) to open the relevant data record.

### 2. Press the left softkey ( ) to open the options.

### 3. Select **Edit**.

### 4. Press the CLEAR input key ( ) to delete individual characters. You can only delete the last character entered, not individual characters within the character string.

### 5. Enter the relevant data in the correct syntax for the data format selected using the input keys.

### 6. Press the left softkey ( ) to confirm your selection.

### 7. Press the right softkey ( ) to exit the Storage menu.









## Delete

This command gives you the option of deleting the data record currently selected.



### Deleting data records

Delete data records as follows:

1. Press the left navigation key (  ) or the right navigation key (  ) to open the relevant data record.
2. Press the left softkey (   ) to open the options.
3. Select **Delete**.  
A message does not appear on the display to confirm that the delete process was successful. The only indication is that the total number of data records shown in the status bar on the display decreases by one.
4. Press the left navigation key (  ) or the right navigation key (  ) to open another data record.
5. Press the right softkey (   ) to exit the Storage menu.





### Send all

This command gives you the option of sending all data records via the preset interface.



### Sending data

Send all data as follows:

1. Press the left softkey (   ) to open the options.
2. Select **Send all**.  
The data records are displayed one by one in extremely rapid succession and sent.
3. Press the right softkey (   ) to exit the Storage menu.







## Delete all

This command gives you the option of deleting all data records.



### Deleting data

Delete all data records as follows:

1. Press the left softkey (   ) to open the options.
2. Select **Delete all**.  
"Delete all data?" appears on the display.
3. Press the left softkey (   ) to confirm the prompt.  
"No data saved" appears on the display.
4. Press the right softkey (   ) to exit the Storage menu.

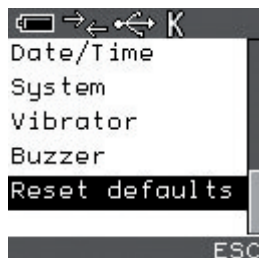
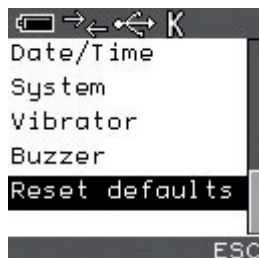
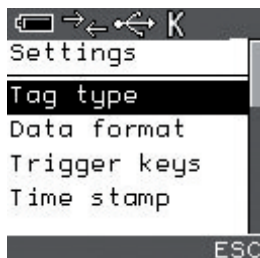
### Enter data

This command gives you the option of entering data manually in addition to the existing data.

Detailed instructions see chapter 7.3





## 9.3 Settings menu





You can adjust the following default settings in the **Settings** menu:

- Change tag type.
- Change data format.
- Assign functions to the trigger keys on the Handheld and the handle.
- Switch time stamp on and off.
- Select interface.
- Switch checksum on and off.
- Attach prefix and suffix to the data.
- Define send/save options.
- Select menu language.
- Adjust date/time.
- Adjust display settings.
- Set vibration alarm.
- Adjust buzzer volume.
- Restore factory settings.

**Tip**

Press the left softkey (   ) to select OK and adopt the settings permanently before exiting a submenu.

Press the right softkey (   ) to select ESC and discard the settings when exiting a submenu.

### 9.3.1 Settings > Tag type

In the **Tag type** submenu, you have the option of selecting the data carrier type.

#### Tag type menu

Submenu	--
Menu entry	50 ICC-... 52 IDC-... Other

#### Description of menu entries

##### Tag types 250 kHz

Tag type	Chip type	Designation P+F	Access	Bit	Fix code length
50	P+F	IDC-...1K	R/W Fixcode	1K 32	4
52	P+F	ICC ...	Fixcode	28	7
Other:					

Selecting the entry **Other** gives you the option of entering a data carrier type manually. All data carrier types from 00 to 99 can be entered.



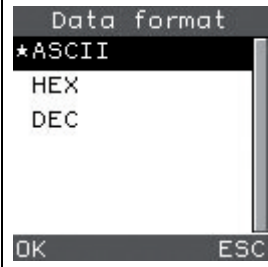
#### Setting the tag type

1. Select **Settings > Tag type**.
2. Press the Enter navigation key () to activate the desired tag type.
3. Press the left softkey () to confirm your selection.  
An asterisk appears in front of the activated menu entry.
4. Press the right softkey () to exit the menu.

### 9.3.2 Settings > Data format

In the **Data format** submenu, you have the option of choosing to read and write the data in ASCII, hexadecimal or decimal format.

#### Data format submenu

	
Submenu	--
Menu entry	ASCII HEX DEC

#### Description of menu entries

##### Data formats

Data format	Notes
ASCII	In ASCII format, numbers 0 to 9, letters A to Z and special characters stored in the Handheld are available.
HEX	In hexadecimal data format, numbers 0 to 9 and letters A to F are available.
DEC	In decimal data format, numbers 0 to 255 are available.

Alternatively, you can open this menu by pressing the two trigger keys simultaneously.



#### **Note!**

##### **Changing the data format**


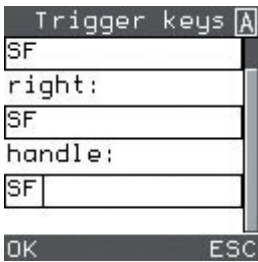
Modifications to the data format in this menu change the default setting

**Settings > Data format** of the Handheld. The format of the read and written data adopts the data format preset in this menu.



### 9.3.3 Settings > Trigger keys

In the **Trigger keys** submenu, you have the option of assigning commands to the trigger keys on the Handheld and the handle. Overview of available commands

#### Trigger key menu

		
Submenu		--
Menu entry		left right handle

#### Description of menu entries

Keys	Description
Left	The command entered in the data input field is assigned to the left trigger key (  ).
Right	The command entered in the data input field is assigned to the right trigger key (  ).
Handle	The command entered in the data input field is assigned to the trigger key on the handle

**Important:** the trigger key function is blocked when you open the **Settings** menu.

### 9.3.4 Settings > Time stamp

In the **Time stamp** submenu, you have the option of activating or deactivating the time stamp. The current date and time is automatically attached to the read data records in the format YYYY-MM-DD HH:MM:SS either in the memory or in the output program when the records are transferred automatically to the computer.



**Note!**

**Correct time stamp**

To generate the correct time stamp, set the current date and time under **Settings > Date/Time**.

#### Time stamp menu


Submenu	--
Menu entry	On Off

## 9.3.5

**Settings > Checksum**

In the **Checksum** submenu, you have the option of allocating a checksum to the data you wish to transfer. This checksum is inserted in front of the suffix and is used to check if the data was transferred without error.

**Checksum menu**

	
Submenu	--
Menu entry	On Off

### 9.3.6 Settings > Prefix/Suffix

In the **Prefix/Suffix** submenu, you have the option of adding a prefix or a suffix (after the time stamp) to the data you wish to transfer. Single characters or character strings (in ASCII format) can be added.



**Note!**

ASCII table see chapter 11

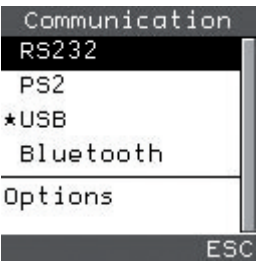
#### Prefix/Suffix menu

Submenu	--
Menu entry	Prefix Suffix

### 9.3.7 Settings > Communication

In the **Communication** submenu, you have the option of configuring interfaces and their parameters.

#### Interface menu

	
Submenu	<b>RS232</b> <b>PS2</b> <b>USB</b> <b>Bluetooth</b> <b>Options</b>
Menu entry	--

#### Description of menu entries

You can configure these parameters for the individual interfaces in the various operating modes:


Interface and operating modes	Description
<b>RS232</b>	
Baud	Specify the required baud rate here. Select one of the following values: <ul style="list-style-type: none"> <li>• 1200</li> <li>• 2400</li> <li>• 4800</li> <li>• 9600</li> <li>• 19200</li> <li>• 38400</li> <li>• 57600</li> <li>• 115200</li> </ul>
Data bits	Specify the required data bits here. Select one of the following values: <ul style="list-style-type: none"> <li>• 7</li> <li>• 8</li> </ul>



Interface and operating modes	Description
Stop bits	Specify the required stop bits here. Select one of the following values: <ul style="list-style-type: none"> <li>• 1</li> <li>• 2</li> </ul>
Parity	Specify the required parity here. Select one of the following settings: <ul style="list-style-type: none"> <li>• None</li> <li>• Odd</li> <li>• Even</li> </ul>
ACK	Select one of the following settings: <ul style="list-style-type: none"> <li>• 1way</li> <li>• 2way</li> </ul>
<b>PS2</b>	
<b>USB</b>	
Keyboard	In <b>Keyboard</b> mode, data is transferred from the Handheld to the computer and is then evaluated. During the transfer process, the Handheld behaves as if a USB keyboard was used to input the data.
Downloader	<b>Downloader</b> mode is used to transfer unformatted, unpacked data via the USB interface, more specifically to write new software onto the Handheld, for example.
Native 2way	<b>Native 2way</b> mode is used for bidirectional communication between the Handheld and application via the USB interface, more specifically when using the <b>Time stamp</b> and <b>Error check</b> functions, for example.
VCOM 1way	The <b>VCOM 1way</b> driver activates a virtual COM port. Data entered using the USB keyboard is ported to a serial application via the virtual COM port.
<b>Bluetooth</b>	
1way Max range	One-way communication from the Handheld to the computer. This operating mode offers a greater maximum range but is not as reliable. Only select this operating mode if you intend to use the Handheld within the maximum range or connect the Handheld to a device with no operating system (e.g. printer). One-way communication may lead to data loss even though the connection is stable.
1way Security	One-way communication from the Handheld to the evaluation unit. This operating mode offers a lower maximum range but is more reliable. Only select this operating mode if you intend to use the Handheld within the maximum range or connect the Handheld to a device with no operating system (e.g. printer). One-way communication may lead to data loss even though the connection is stable.

Interface and operating modes	Description
2way	Two-way communication between the Handheld and the evaluation unit. Data is transferred in packets as per protocol and achieves a reliable transfer because the Handheld always waits for a response from the evaluation unit before deleting data from the internal memory. The data is transferred again automatically if necessary. The two devices also continuously check whether the connection to the respective end device is still active (end-to-end handshake). Pepperl+Fuchs offers "XML router - BE" software for XML Bluetooth modems. This software is suitable for Windows PCs and Windows Pocket PCs. "XML Router - BE" also offers Bluetooth-to-keyboard-wedge communication for applications that require a keyboard port. Select <b>2way</b> operating mode when using the XML Bluetooth modem.
BD_MAC	BD_ADDR for the Bluetooth receiver

**Options submenu**

	
Submenu	--
Menu entry	auto connect auto discon. Timeout

**Description of the submenu**

Options

In the **Options** submenu, you have the option of configuring the interface to connect and disconnect automatically. You can also adjust the timeout setting (in ms) for the V commands.

### Description of menu entries

#### auto connect.

If the **Auto connect** menu entry is activated, the Handheld is connected automatically to the computer via the interface when the interface cable is attached.

#### auto disconnect

If the **auto disconnect** menu entry is activated, the Handheld is disconnected from the computer automatically after the data is transferred.

Activate this menu item if you wish to send data from several devices to the same Bluetooth modem.


#### Timeout

In the data input field of the **Timeout** menu entry, you have the option of entering the timeout value [in ms] for the V commands. V commands are used to send commands from the PC directly to the Handheld so that each terminal program and interface can be used. A timeout detects the end of the command. The preset timeout value of 500ms can be modified in the communication menu on the Handheld, i.e. if after the last character no other characters are received within the timeout, the command is evaluated and sent to the Handheld.

### 9.3.8 Settings > Send/Log

In the **Send/Log** submenu, you have the option of deciding how the read data is subsequently processed.

#### Send/Log menu

	
Submenu	--
Menu entry	Always send Always log Auto erase Auto upload


#### Description of menu entries

Function	Description
Always send	Read-in or input data is transferred immediately from the Handheld to the connected computer. The data is transferred regardless of <b>Always save</b> setting.
Always log	Read-in or input data is saved in the Handheld memory, regardless of whether it was sent to a computer or not.
Auto delete	Data from the Handheld memory is deleted once it is sent to a computer. If read-in or entered data is read and then sent directly from the Handheld to the computer and the option <b>Auto delete</b> is activated, the data is transferred and deleted immediately.
Auto upload	Data from the Handheld memory is sent to the computer immediately when a connection is established again. This option is only active when the Handheld is in batch mode.

### 9.3.9 Settings > Language

In the **Language** submenu, you have the option of selecting the menu language.



#### Language menu

	
Submenu	--
Menu entry	English German

### 9.3.10 Settings > Date/Time






In the **Date/Time** submenu, you have the option of setting the date and time for the time stamp

#### Date/Time menu

		
Menu entry		year month day hours minutes



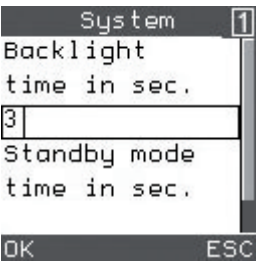
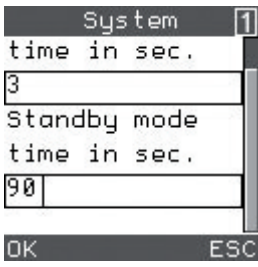
#### Entering the date and time

1. Press the up navigation key (  ) and the down navigation key (  ) to navigate to the individual data input fields.
2. Press the CLEAR input key (  ) to delete numbers already entered.
3. Enter the numbers using the input keys.
4. Press the left softkey (   ) to confirm your entries.

### 9.3.11 Settings > System






In the **System** submenu, you have the option of setting the display lighting time as well as the time limit before the device switches to standby mode.

#### System menu

		
Submenu	--	
Menu entry	Backlight time in sec. Standby mode time in sec.	



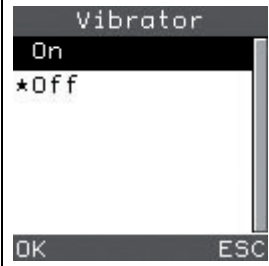
#### Adjusting the illumination time and standby time

1. Press the up navigation key (  ) and the down navigation key (  ) to navigate to the individual data input fields.
2. Press the CLEAR input key (  ) to delete numbers already entered.
3. Enter the numbers using the input keys.
4. Press the left softkey (   ) to confirm your entries.

### 9.3.12 Settings > Vibrator

In the **Vibrator** submenu, you have the option of activating or deactivating the vibration alarm for the device.

#### Vibrator menu

	
Submenu	--
Menu entry	On Off

### 9.3.13 Settings > Buzzer






In the **Buzzer** submenu, you have the option of adjusting the volume of the buzzer (in percent) and the signal duration (in ms) for successful reading and successful writing.

#### Buzzer menu

<pre> Buzzer 1 Volume: [0...100%] 100 Duration read: [ms] OK ESC </pre>	<pre> Buzzer 1 [ms] 200 Duration write [ms] 400 OK ESC </pre>	
Submenu	--	
Menu entry	Volume [0...100%] Duration read [ms] Duration write [ms]	



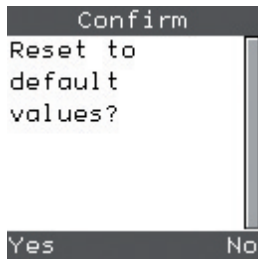
#### Adjusting the buzzer volume and signal times

1. Press the up navigation key (  ) and the down navigation key (  ) to navigate to the individual data input fields.
2. Press the CLEAR input key (  ) to delete numbers already entered.
3. Enter the numbers using the input keys.
4. Press the left softkey (   ) to confirm your entries.



### 9.3.14 Settings > Default settings

The "Default settings" command gives you the option of restoring all settings to the factory settings.



#### Default settings

Function	Default value
Assignment of trigger keys right/left keys and handle	SF
Data format ASCII/HEX/DEC	ASCII
Password mode	Off
Password	00000000
Time stamp on/off	Off
Interface	USB -> VCOM 1way
Interface -> auto connect	On
Interface -> auto disconnect	Off
Interface -> timeout for V commands	500 ms
Interface -> MAC address	""
Send / Save --> always send	On
Send / Save --> always log	Off
Send / Save --> auto delete	On
Send / Save --> auto upload	On
Language	English
Background lighting on/off and time	On, 3 seconds
Standby mode	90 seconds
Vibrator	On
Buzzer -> volume	100 %
Buzzer -> read time	200 ms
Buzzer -> write time	400 ms



### Restoring settings to their default values

1. Select **Settings > Default sett.**

"Reset to default value?" appears on the display

2. Press the left softkey (   ) to confirm the prompt.

## 9.4 Applications menu



All JavaScript applications saved on the device are displayed in the **Applications** menu. The two programs IxTmode.js and PF\_Ident.js are required to operate the device as a Handheld.

After selecting a JavaScript application, you have the option of launching the script (**Run**), displaying information on the version status of the script (**Version**) or deleting the script (**Delete**). You also have the option of defining the script as a default application (**Set as default**). This script is launched automatically when the device is powered up.



### **Caution!**

Modified or separate JavaScript programs

Data reading and writing processes may be influenced or disrupted.

- Do not modify the JavaScript programs provided by the manufacturer.
- Check whether the identification function of self-configured JavaScript programs is affected.



### **Note!**

#### **Creating a separate user interface**

If you intend to create your own user interface for the device, please consult Pepperl + Fuchs for further information.

## 9.5 **About** menu

The **About** menu includes information on the:

- Manufacturer
- Type designation
- Part number (**PrtNo**)
- Status of the firmware for the read/write head (**FW**)
- Status of the software PF\_Ident.js (**SW**)
- Hardware version (**HW**)
- Device serial number (**Reader ID**)
- MAC address (**BD Addr**)
- Software number of the Handheld firmware (**App**)
- Software number of the Handheld boot software (**Boot**)
- (**Radio**)
- (**OEM ID**)

## 10 Command reference

Command	Description
SR	Read data
SW	Write data
SF	Read fix code
SX	Make ICC
SS	Read special fix code
SP	Write special fix code
SI	Init. tag
S#	Overwrite tag
GS	Read tag type
CT	Set tag type

### Single Read Words (SR)

Command: **SR**<WordAddr><WordNum>

Response: <Status><Data>

Only one attempt is made to read <WordNum> data blocks from block address <WordAddr>.

### Single Write Words (SW)

Command: **SW**<WordAddr><WordNum><Data>

Response: <Status>

Only one attempt is made to write <WordNum> data blocks from block address <WordAddr>.

### Single Read Fixcode (SF)

Command: **SF**

Response: <Status><Data>

Only one attempt is made to read fixcode. The specified length of the fixcode depends on the data carrier type.

### Single write fix code/make ICC (SX)

Command: **SX** <FixType> <FixLen> <Data>

Response: <Status>

Only one attempt is made to write a fix code. The specified length of the fix code depends on the data carrier type.

**Single read special fix code (SS)**

Command: **SS**  
 Response: <Status><Data>

Only one attempt is made to read a "special fix code".

**Single program special fix code (SP)**

Command: **SP**<FixLen> <Data>  
 Response: <Status>

Only one attempt is made to write a "special fix code".

**Initialize data carrier (SI)**

Command: **SI**  
 Response: <Status>

This command lifts the block for conventional writing and reading for IDC-...-1K data carriers that were set with the SP command.

**Fill Data Carrier (S#)**

Command: **S#**<WordAddr><WordNum><FillSign>  
 Response: <Status>

The data carrier is filled with <WordNum> data blocks described by fill signs <FillSign> from the specified block address <WordAddr>.

**Get State (GS)**

Command: **GS**  
 Response: TT: <TagType>, TO:<Timeout>,  
 BD:<Baud>

This command is used to read out permanently stored read/write head settings.

**Change Tag (CT)**

Command: **CT**<TagType>  
 Response: <Status>

This command tells the read/write head which data carrier type it is communicating with. This setting is stored permanently.

## Legends for variables

<Baud>	4-6 characters in the preset data format Baud rate [in bit/s]
<Data>	<WordNum> times 4 bytes in the preset data format When communicating a data block, the bytes are transferred chronologically starting with the highest value and ending with the lowest value.
<FillSign>	1 character [ASCII]
<Status>	1 character [ASCII] ": command was executed without error. 'No tag': fault indication
<TagType>	2 characters in the preset data format Value indicates the number of the data carrier type.
<Timeout>	3 characters in the preset data format Interface timeout [in ms]. A fault indication is issued when this time elapses. '000' deactivates the timeout
<WordAddr>	4 characters [ASCII] Block start address in the data carrier for the relevant command. Range from '0000' to 'FFFF' depending on the data carrier type.
<WordNum>	2 characters [ASCII] Number of data blocks to read or write. Range from '00' to 'FF' depending on the data carrier type.

11 ASCII table

hex	dec	ASCII	hex	dec	ASCII	hex	dec	ASCII	hex	dec	ASCII
00	0	NUL	20	32	Space	40	64	@	60	96	'
01	1	SOH	21	33	!	41	65	A	61	97	a
02	2	STX	22	34	"	42	66	B	62	98	b
03	3	ETX	23	35	#	43	67	C	63	99	c
04	4	EOT	24	36	\$	44	68	D	64	100	d
05	5	ENQ	25	37	%	45	69	E	65	101	e
06	6	ACK	26	38	&	46	70	F	66	102	f
07	7	BEL	27	39	'	47	71	G	67	103	g
08	8	BS	28	40	(	48	72	H	68	104	h
09	9	HT	29	41	)	49	73	I	69	105	i
0A	10	LF	2A	42	*	4A	74	J	6A	106	j
0B	11	VT	2B	43	+	4B	75	K	6B	107	k
0C	12	FF	2C	44	,	4C	76	L	6C	108	l
0D	13	CR	2D	45	-	4D	77	M	6D	109	m
0E	14	SO	2E	46	.	4E	78	N	6E	110	n
0F	15	SI	2F	47	/	4F	79	O	6F	111	o
10	16	DLE	30	48	0	50	80	P	70	112	p
11	17	DC1	31	49	1	51	81	Q	71	113	q
12	18	DC2	32	50	2	52	82	R	72	114	r
13	19	DC3	33	51	3	53	83	S	73	115	s
14	20	DC4	34	52	4	54	84	T	74	116	t
15	21	NAK	35	53	5	55	85	U	75	117	u
16	22	SYN	36	54	6	56	86	V	76	118	v
17	23	ETB	37	55	7	57	87	W	77	119	w
18	24	CAN	38	56	8	58	88	X	78	120	x
19	25	EM	39	57	9	59	89	Y	79	121	y
1A	26	SUB	3A	58	:	5A	90	Z	7A	122	z
1B	27	ESC	3B	59	;	5B	91	[	7B	123	{
1C	28	FS	3C	60	<	5C	92	\	7C	124	
1D	29	GS	3D	61	=	5D	93	]	7D	125	}
1E	30	RS	3E	62	>	5E	94	^	7E	126	~
1F	31	US	3F	63	?	5F	95	_	7F	127	DEL



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