FACTORY AUTOMATION

Manual

IPT-HH9

Hand read/write devices
with PSION-Workabout
program description

PEPPERL+FUCHS

Contents

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1 Product overview read/write devices

IPT-HH9

The hand read/write device IPT-HH9 consists of a read/write upper component and the PSION-Workabout program.

Technically, the read/write upper component corresponds to the read/write device IPH-350-R2/R5.

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2 Description of programme

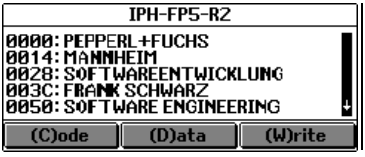
The programme for PSION-Workabout can be used to access IPH-FP5-R2/R5, IPH-HH6-R2/R5, IPH-FP5-R2/R4 and IPH-HH9-R5 read/write heads. R2 designs with serial interface must receive electrical power via an external power supply. Models with the TTL interface (R5) receive their electrical power via the TTL port of the PSION-Workabout. To prevent placing unnecessary loads on the batteries of the PSION, the TTL port is only activated if data is being transferred to the read/write head. This results in a delay of less than 1 second when executing read and write operations.

After the programme starts it automatically performs a read head detection. The detection process cannot be interrupted. Because of maximum response times of the ID system, the read head detection may last up to 15 seconds.

The programme is controlled by a window-based user interface that is explained in the following sections.

2.1 Main window

The main window contains all control elements needed to read data from the read/write head and transfer it to the read/write head.



Picture 1: Overview

The type of the connected read/write head appears in the upper part of the main window. Five texts lines are available in the display area to display data. If not all data can be displayed, a scroll bar appears on the right edge. The arrow pointing down indicates that additional data can be brought up into the visible display area. Two arrow keys (up and down) are used for screen control. Keys that are active appear in the scroll bar. The user can delete screen content by using the Delete key.

The three most important functions of the programme can be started from the button bar:

1. **(C)ode** The programme attempts to read the ID code of a code or data carrier within reading range. The result is shown in the display area.
2. **(D)ata** The programme reads data from a data carrier within reading range and displays the data.
3. **(W)rite** The programme writes data to the data area of a data carrier within reading range. The data can be entered using menu item read/write head - "Write data".

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2.2 Menu bar

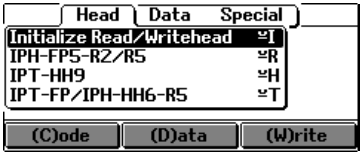
The menu bar is not always visible due to space limitations. Activating the menu key causes the menu bar to appear. Then menu items can be selected with the arrow keys and the Enter key. You can also bring up each menu item with a shortcut. The shortcut always consists of the PSION key and an alphanumeric key.

Almost all menu items open dialogues. You can navigate inside a dialogue with the arrow keys. The Enter key exits a dialogue and all data that was changed will be saved. The On/Esc key cancels any changes in the dialogue. Data that is changed will be lost. All data that is not set in dialogues is permanently saved in an initialisation file.

The various functions that can be started from the menu bar are described in greater detail in the following sections.

2.2.1 Read/write head

This item includes all functions for adjusting read and write parameters.



Picture 2: Read/write head menu

Initialize Read/Writehead (PSION+"L")

This function starts read/write head detection. The detection first tries to initialise type IPH-FP5-R2/R5. If that is not successful, initialisation of type IPH-HH6-R5 or IPH-HH9 is started. The detection process can last up to 15 seconds, since the maximum response times of systems must be taken into consideration. After initialisation of an ID system is successfully completed, the programme displays the version information of the corresponding read/write head. The following illustrations show the version status of read/write heads.

Picture 3: Version message IPT-HH9

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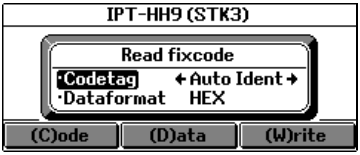
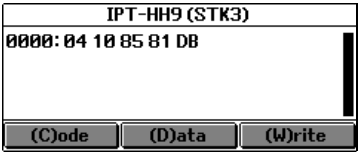
Read fixcode (PSION+"C")



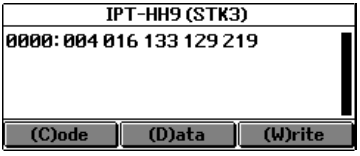
Picture 4: "Read fixcode" dialogue

Bringing up the "Read fixcode" menu item opens a dialogue in which the user can set the type of data carrier and how the display is displayed. Closing this dialogue starts a read process. The parameters entered here are also used by the programme when calling the "Read fixcode" function with the "(C)ode" button.

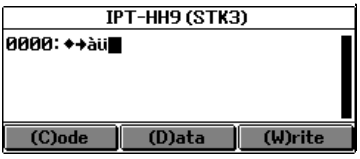
If the code carrier is set to "Auto Ident", any data carrier supported by the read/write head can be read. The user can choose between three data formats: HEX, DEC and ASCII. In hexadecimal representation, each byte that is read appears in the output as a two-digit hexadecimal number. Bytes are represented in decimal display as 3-digit decimal numbers. ASCII-representation shows the corresponding ASCII symbols. Figures 7, 8 and 9 show the same ID code for a tag of type IPC03 in hexadecimal, decimal and ASCII representation.



Picture 5: ID code in hexadecimal representation



Picture 6: ID code in decimal representation



Picture 7: ID code in ASCII representation

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Read data (PSION+"D")

Like "Read fixcode", the menu item "Read data" opens a dialogue where the parameters for the data carrier, data format, starting address and length of the data to be read can be set. "IPC03 DEFREAD" can also be selected as data carrier. This selects "Default Read" as the operating mode. That operating mode makes it possible to read one or two words very quickly because the memory area to be read is already determined on the data carrier and does not need to be transferred to the data carrier by the read/write head after it is read.

The start and end of the read range are saved in bytes 0 and 1 of the Control Word. As soon as the electrical power is supplied to the data carrier, it sends the data to the data area defined by the beginning and end of the read range. The data area can be entered with the command "Write data" and data carrier type "IPC03 CTRL-WORD" and written to a data carrier.

Picture 8: "Read data" dialogue

With the "Data format" parameter, the user can choose between HEX, DEC and ASCII format (see Figures 10, 11 and 12) as in the function "Read code". The starting address of the read process must be specified in hexadecimal format. The length of the data to be read is entered as a decimal number. Please note that the total of the starting address plus the data length must not be greater than 116. If necessary, the programme corrects the values during the read process.

If the option "Copy to write buffer" is set to "Yes", data that is read is stored and can be written to another data carrier with a write command. This makes it very easy to copy the data content of one data carrier to another data carrier.

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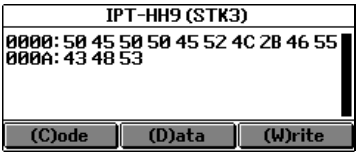
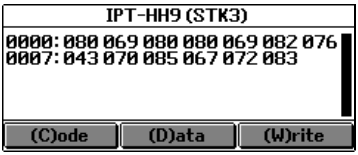
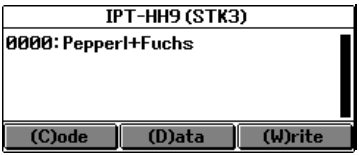


Picture 9: Data in hexadecimal representation



Picture 10: Data in decimal representation



Picture 11: Data in ASCII representation

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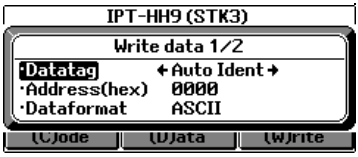
Write data (PSION+"S")

You can use the "Write data" menu item to a data carrier. The data to be written can be entered with the keyboard. Data that has been previously read can also be accepted without changes. This makes for an easy way to copy data carriers.

The first parameter to be set, just as for "Read data", is the data carrier type. A special feature is "IPC03 CTRLWORD". This command can be used to write the Control Word of an IPC03 data carrier. To do this, enter the beginning and end of the data range you want to read in "Default Read" mode. The beginning and end addresses should be entered in two-digit hexadecimal format. The addressing refers to 4-byte blocks, i.e. you can only set blocks consisting of 4, 8, 12, etc. bytes. The normal data range starts with Block 2, since the first and second blocks (0 and 1) are reserved for the password and Control Word.



Picture 12: "Write data" dialogue 1/2

Picture 13: "Write data" dialogue 2/2

The starting address corresponds to the address of the "Read data" dialogue. The length of the data to be written is calculated automatically by the programme. The user can enter as many as 116 characters in 6 lines. 20 characters can be entered in each of the first 5 lines, with 16 characters available in the last line. Lines that are not completely filled in are padded with blanks (ASCII 32). The starting address plus the number of characters to be written must not exceed 116. Any character entered beyond address 116 (0074 HEX) will be ignored by the programme.

- IPH-FP5-R2/R5 PSION+"P"
  IPH-HH6-R2/R5 PSION+"P"
- IPH-HH9 PSION+"H"

These two menu items can be used to coerce the application into a reading head mode. The programme attempts to initialise the appropriate read/write head. It switches into the mode whether or not it receives a response from the read/write head. The "Initialise read/write head" function blocks communication with a connected read/write head if the attempt to initialise a type fails.

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Password (IPH-FP/IPH-HH6-R5 only)

You can bring up the password with the "Password" command in the "Data" menu item. It is only available for read/write heads IPT-FP and IPH-HH6-R5.

The data carrier type IPC03 provides the "Default Read" operating mode. In this mode, the content of the Control Word determines the read area. The Control Word can be written with the "Write data" command. The Control Word can only be written if Password mode is active.

Password mode must be activated and the password must be entered when the command is entered. The password consists of 4 bytes, which must be entered in hexadecimal data format.

Writing the IPC11 fixcode (IPT-HH9 only)

This function is only available with the IPT-HH9 read/write head. A fixcode can be written to an IPC11 with this command. This code is read if you have set IPC02 as the data carrier type for code reading. The code can be overwritten again and again with the command "Write fixcode".

After running the command with the "Data" menu item, you must first set the data format in which the data to be written will be entered. Data can be entered as an ASCII character sequence, a hexadecimal number or a decimal number. Press "Enter" to go to the field for data input. A fixcode consists of 40 bits, which are entered as 5 bytes. You can enter either 5 ASCII characters or 5 bytes as a hexadecimal number or a decimal number. Hexadecimal numbers should be entered as 2-digit numbers, decimal numbers as 3-digit numbers. Bytes are separated by blanks ("Space"). Only ASCII characters can be entered without spaces between them. The code can be read with the "Read code" command after it has been written.

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2.2.2 Special functions

All programme services functions not directly associated with read/write head actions are grouped together under the general heading Special Functions.

Picture 14: "Special" menu

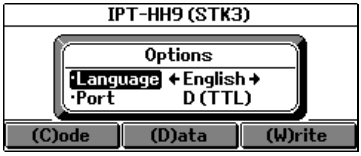
About (PSION+"I")

The "About" menu item shows version information and the Copyright dialogue. Other than that, it is of no significance in running the programme.

Picture 15: "About" dialogue

Options (PSION+"O")

The "Options" dialogue allows the user to make basic settings to the programme.



Picture 16: "Options" dialogue

Only German and English are available as languages in this version of the programme. If you change the language, the change takes effect as soon as you exit the dialogue. The "Port" determines the serial interface for communication with the read/write head. The programme can use either TTL interfaces or serial interfaces of PSION-Workabout. TTL interfaces are only activated during communication cycles, since the power supply of the read/write head is also provided by the same interface.

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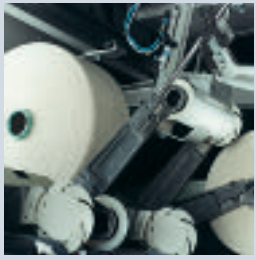

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Worldwide Headquarters
Pepperl+Fuchs GmbH · Königsberger Allee 87
68307 Mannheim · Germany
Tel. +49 621 776-0 · Fax +49 621 776-1000
e-mail: fa-info@de.pepperl-fuchs.com

USA Headquarters
Pepperl+Fuchs Inc. · 1600 Enterprise Parkway
Twinsburg, Ohio 44087 · USA
Tel. +1 330 4253555 · Fax +1 330 4254607
e-mail: sales@us.pepperl-fuchs.com

Asia Pacific Headquarters
Pepperl+Fuchs Pte Ltd. · P+F Building
18 Ayer Rajah Crescent · Singapore 139942
Company Registration No. 199003130E
Tel. +65 67799091 · Fax +65 68731637
e-mail: sales@sg.pepperl-fuchs.com

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