MTHP4
User Manual
2.7
ENGLISH

Updated for MiniTouch HP4, firmware version 1.65 (October 2011)

Congratulations on your purchase. MTHP4 is one of the most advanced, compact and user-friendly inkjet controllers available.

This manual covers the usage of the controller. Before using the product, please read the manual carefully.

Please also refer to:

Manual	Content
Installation Manual	Technician's guide to installation of this product.
Quick Guide	Technician's guide to setting up this product.
Remote Communication for the Mini series	Commands for ethernet and RS232 connections.
MiniDraw for HSAJet MTHP4	Optional software for creating and uploading print jobs.

This manual covers MTHP4 with firmware 1.65

CE Declaration

EC Declaration of Conformity

Manufacturer:

Company Name:	HSA Systems ApS
Address:	Mileparken 16 DK 2740 Skovlunde Denmark
Tel	+45 44 94 02 22
Fax	+45 44 94 03 33

hereby declare that

Product

No.	MTHP4
Name:	MTHP4, MTHP4PSU
Year:	2009

- is in conformity with

- COUNCIL DIRECTIVE of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC)

- COUNCIL DIRECTIVE of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (73/23/EEC)

was manufactured in conformity with the following national standards that implements a harmonised standard:

EN 50081-1
: Electromagnetic compability - generic emission standard. Part 1: Residential, commercial and light industry.

EN 50081-2
: Electromagnetic compability - generic emission standard. Part 2: Industrial environment.

EN 50082-1
: Electromagnetic compability - generic immunity standard. Part 1: Residential, commercial and light industry.

EN 50082-2
: Electromagnetic compability - generic immunity standard. Part 2: Industrial environment.

EN 55022
: Limits and methods of measurement of radio disturbance characteristics of information technology equipment.

EN 60555-2
: Disturbances in supply systems caused by household appliances and similar electrical equipment - Part 2: harmonics.

EN 60555-3
: Disturbances in supply systems caused by household appliances and similar electrical equipment - Part 3: voltage fluctuations.

EN 60950
: Safety of information technology equipment including electrical business equipment.

Position: Manager

Name: Per Sørensen

Company: HSA Systems ApS

HSA Systems ApS
Mileparken 16
DK-2740 Skovlunde
+45 4494 0222
www.hsasystems.com

Safety Instructions

- The MTHP4 is a controller unit for inkjet printing. Only use this device for the intended use.
- Do not subject the controller to strong shocks or vibrations.
- Only operate touch screen with finger or dedicated stylus. **Never** use tools like screwdrivers, keys, ball-point pens or similar. The glass screen or the touch layer may be damaged
- Install the MTHP4 in the recommended installation environment only.
- Only use the MTHP4 with **HSA SYSTEMS F-type print heads for HP**. If the controller is used with a different type of print head, the print head will be destroyed.
- Only use the MTHP4 with the original power supply. Wrong voltage level will destroy the controller or cause it to malfunction.
- Connect power supply to input voltage 85-265 VAC only
- Follow the wiring instructions in the installation manual carefully. Wrong wiring could destroy the controller unit or cause it to malfunction
- Shut down MTHP4 properly before turning off the power supply. Power loss during normal operation may result in memory card write failure and data loss.
- Do not clean controller with strong solvents.
- Do not let liquids get in touch with any electrical parts.
- The MTHP4 is only to be taken apart or repaired by trained personnel.
- Do not forget your administrator password, or delete the administrator account.

Table of Content

Introduction

Features and performance

Features

- Text, barcode and graphical objects
- Static , counter, date/time, shift codes and system content
- Prompts
- Real time printing
- Data logging
- Print queue
- 4 configurable hardware outputs
- 4 configurable hardware inputs

Performance

- Number of pens: Up to 4 pens.
- Printing speed: depending on resolution, 35 m/min at 600 dpi.
- Resolution: Variable in print direction, in 18 steps from 75 to 2400 dpi
- Manual row select
- Print length: up to 2700 mm.

Interface

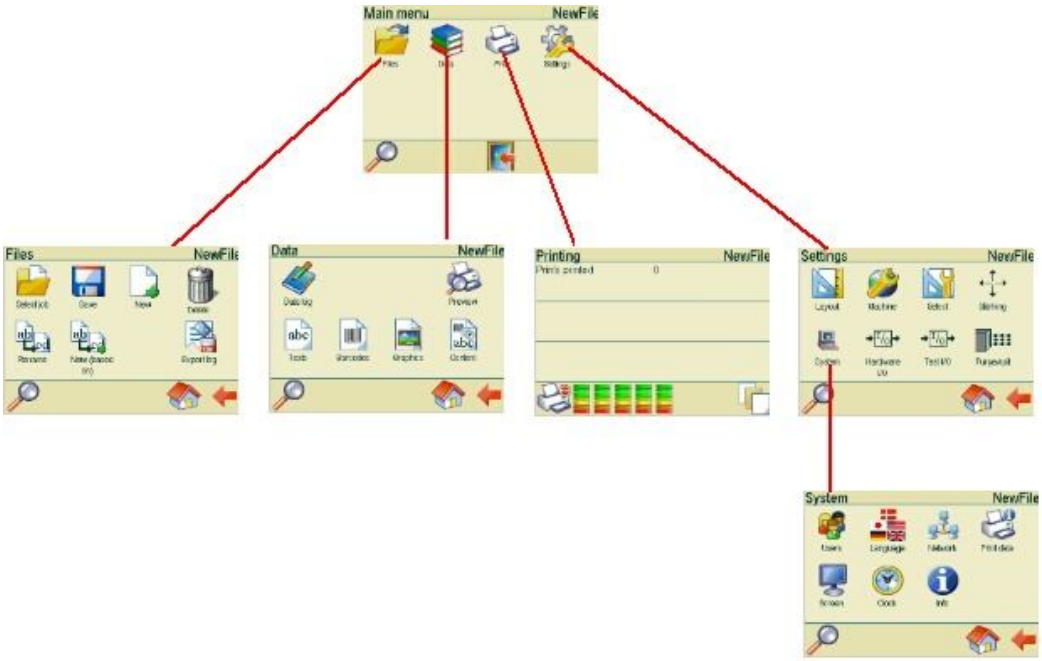
- Touch screen
- Documented protocol for remote operation (Ethernet and RS232)
- External PC software for creation of print jobs

Hardware

- Quadrature encoder supported
- Power supply 85-240V included

Navigation

The MTHP4 has a flat hierarchical menu. The shortcuts are organized in a tree link structure.



At the bottom of each screen, a menu with navigation shortcuts can be found.

	Save changes and proceed.
	Delete object (cancel add) and go back.
esc	Do not save changes. Go back to previous menu.
	BACK to previous menu.
	HOME. Return to the main menu.
	Quick find. Quickly locate an application by entering the first letter.

Using the keyboard

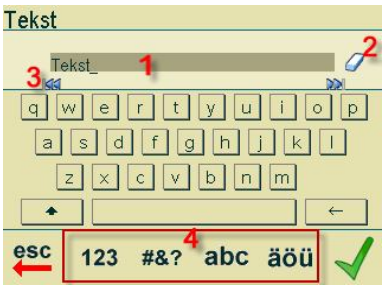
When you need to enter text into the MiniTouch, you are presented with an on-screen keyboard typically like the following:

1: the text you have entered

2:clear text input and start over (erasor)

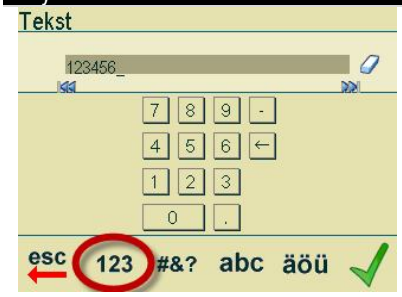
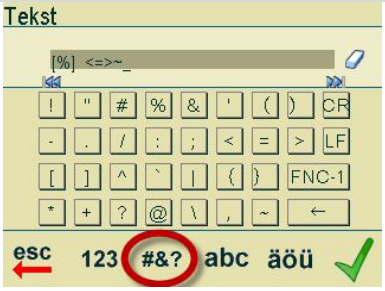
3: if text string is longer than a screen (approx. 40 characters) these arrows jump a screen backwards and forward

4: keyboard style



You typically start with the qwerty keyboard, but you can switch to other keyboards at any time.

Apart from QWERTY you have

Keyboard	Description
	Numerical keyboard, for entering digits
	Sign keyboard for entering common punctuation and some special characters. CR / LF is a line feed used in some fields FNC1 is a special character for barcodes

Accented characters keyboard.
NOTICE:
The characters here depend on the font you have selected, since the encoding is stored with the font. Thus, if you have a font with "Greek" encoding, you will see greek characters here instead of west european.

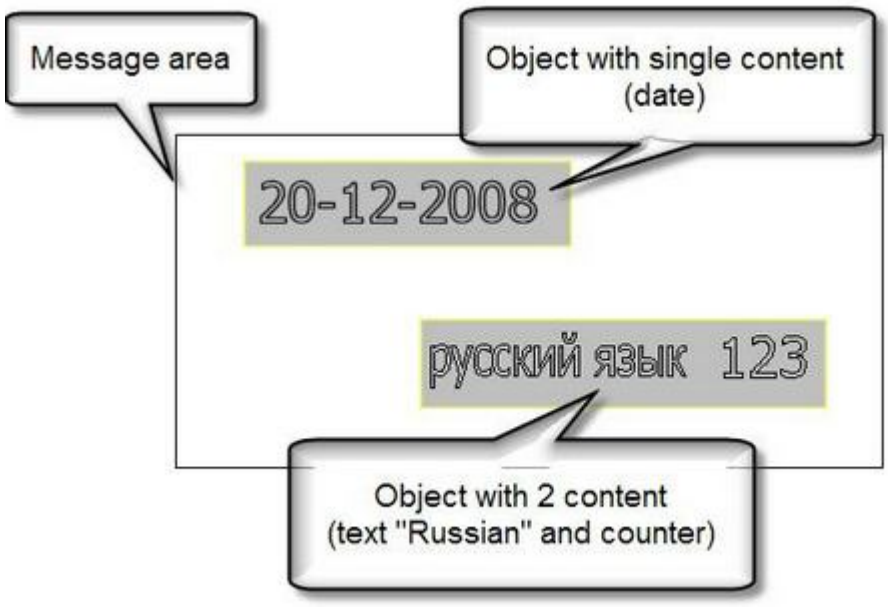
Typically you will have a choice between
West european
East european (Poland etc)
Greek
Turkish
Baltic
Cyrillic

What are layout, object & Content?

On the MTHP4 layouts, objects and content constitute your print job. It is important to understand the difference. The following will explain:

Your layout is like a white piece of paper where you place content. Objects are placeholders for content. They are like post it notes on your paper. On the post it note you write something. That is your content.

You can see the principle illustrated here:



When you create a layout, it is a blank piece of paper.

When you place an object on your layout, content will be created at the same time and the two will be linked together. Later you can edit the links to display different content.

If you wish to edit your object or your content later, this must be done separately.

There are 3 types of objects.

Text objects	Displays content as text or numbers.
Barcode objects	Displays content as barcode.
Graphical objects	display a logo, a line or a box. Not linked to a content

There are 6 types of content.

Content type	Meaning
Static text	A static text is content that is the same on every print.
Counter	Counters increment every time the start sensor is activated.
Date/time	Displays the date and/or time based on the system clock.
Systemdata	Displays information from the current (MTHP4) system. Select username, linename, filename, print number or validator name.
Shiftcodes	Change content according to predefined rules.
Indentifier	Application identifier for EAN 128 barcode.

Limits to the system

Property	Limit
Number of folders on internal memorycard	Unlimited.
Number of layouts	50 layouts in each folder on the internal memory card.
Number of objects in one layout	40 text objects. 10 barcode objects. 10 graphical objects (Max. 50 altogether)
Number of contents in one layout	16 static texts. 10 counters. 10 date/time. 4 system data. 10 shiftcodes. 10 identifiers.
Number of fonts in one layout	10 fonts. (Max. 50 fonts altogether).
Number of locales in one layout Language files	5 locales (Max 50 locales altogether). 50 language files altogether.
String lengt:	Object/content name: 15 characters. Content 127 characters.
Printing speed	Frequency of print head 15 kHz. Resolution is variable, so maximum speed depends on chosen resolution. Theoretical maximum speed in 75 x 300 dpi close to 600 m/min. 600x600 dpi Speed limit is 37 m/min 300x300 dpi Speed limit is 148 m/min 150x300 dpi Speed limit is 296 m/min 300x300 dpi (One row) Speed limit is 74 m/min
File transfer rate	USB 400KBit/second Ethernet 4000kBit/second RS232 115kbit/second
Length of prompt question	21 characters

Loading and printing

> This section will briefly introduce you to basic operations of the MiniTouch controller, so the user is able to log in, load a layout and start print function.

Login to the system

If MTHP4 is password protected a login screen will be shown when you start the controller.

Graphical login is default. When graphical login is enabled, all user accounts on the unit will be represented by an icon.

The default user account is admin. The default password is admin. It is recommended to change the default for security reasons.

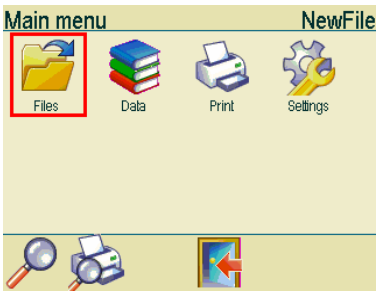
If more than 8 user accounts have been setup, a scroll bar will appear.

To login in, press an icon to select a user account. Next type in the password.

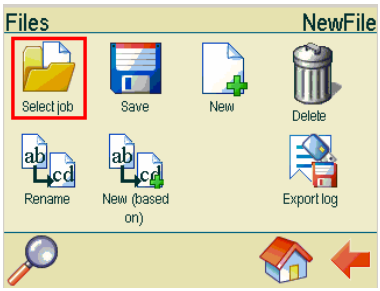
Press green check mark when done or ESC to cancel and go back to select another user account.

How to load and print a layout

Select "files" in the main menu.

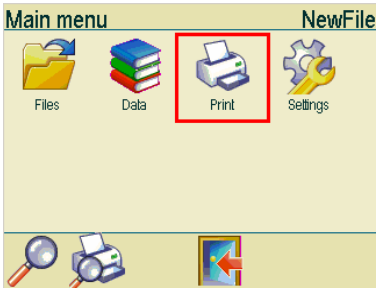


Press "Select job".



Select a layout from the list.

The layout will load, and you will return to main menu. Press "print" to enter print mode.

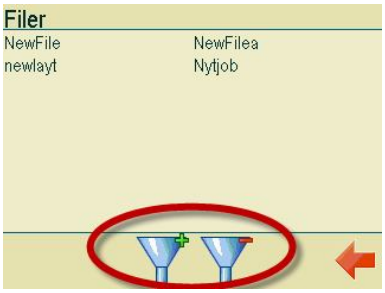


Filter the list

On the file list - or any other list in the controller - you can apply a filter to show fewer choices.

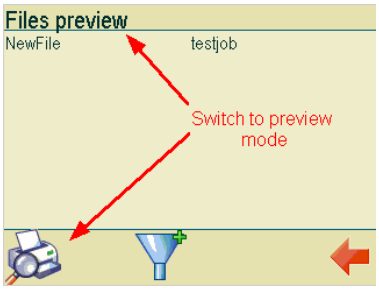
Example: The file list has many entries. Click the filter+ icon

In the keyboard, now enter "n". The result is a list with entries starting with "n"



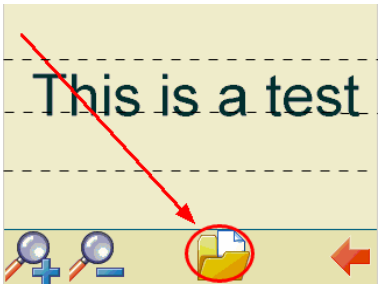
Preview your layout before loading.

Switch to preview mode by pressing the printer icon in the bottom left corner.



Select a layout from the list. Next a preview will be displayed. If you have installed more than one pen on your system, the pens will be divided by dotted lines in the preview. The dotted lines are only visible on the preview screen and will not be printed.

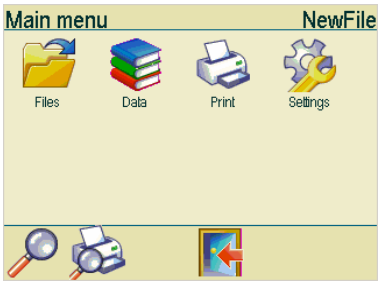
If you press the directory icon, the layout will load and you will return to the main menu. If you press the red arrow, you will return to the list of layouts.



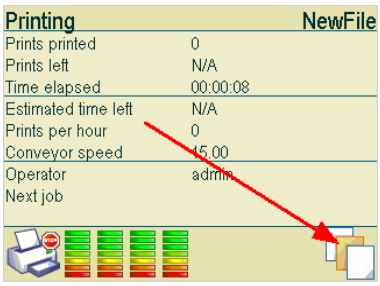
How to add layouts to the print queue

The print queue allows you to change print job swiftly.

To add a layout to the print queue, enter print mode from the main menu.

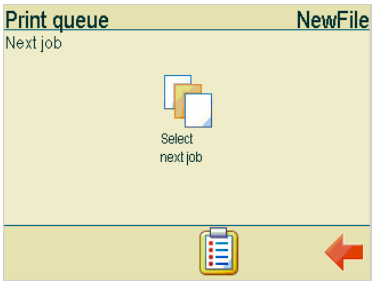


Press the icon in the bottom right corner.

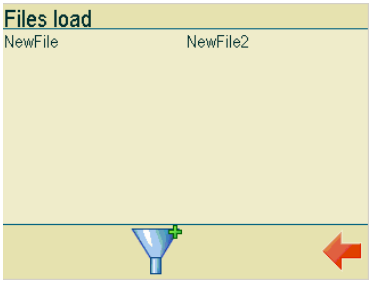


(In print mode, 8 types of print data can be displayed. Read more in the System settings chapter.)

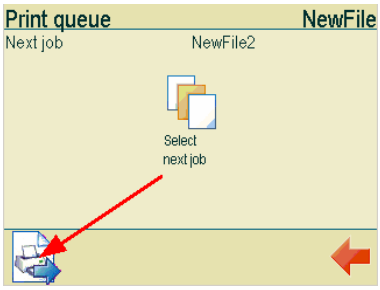
Next, press "Select next job".



Select a layout to add to the queue.



To stop printing the current layout and go to the next print job in the queue, press the icon in the bottom left corner.



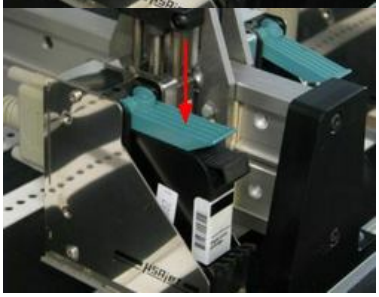
Press the red arrow to leave the print queue.

How to change a pen

1. Open latch and position pen as shown on picture.

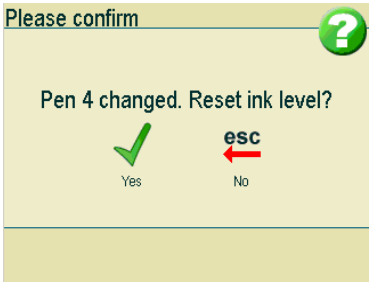
2. Press pen down.

3. Press pen back.



4. Close latch and press down until it locks.

When you close the latch, the following prompt will appear on the screen.



The MTHP4 calculates current ink level in each pen(%).

YES. Ink level is set to 100 %.

NO. Present ink level is unchanged.

In print mode each pen will be represented by a colored bar at the bottom of the screen.

The colored bars indicate ink level.

If the latch is open, the colored bars will be marked by a red square .

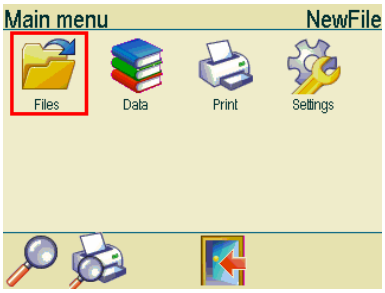

Printing
NewFile
Prints printed
0

Manage your layout

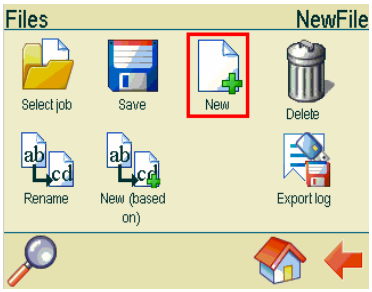
> This section will detail how to manage layout files and create new layout files

How to create a new layout

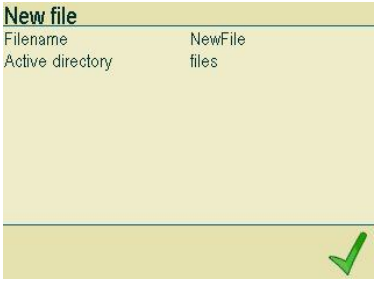
Select "files" in the main menu.



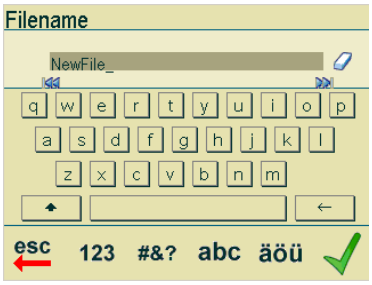
To create a new layout, press "new".



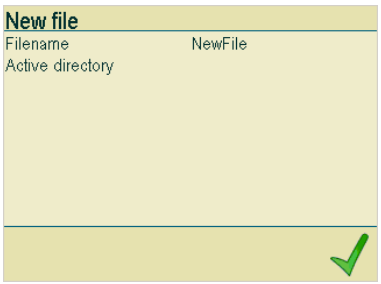
Press "filename" to enter a file name for the new file.



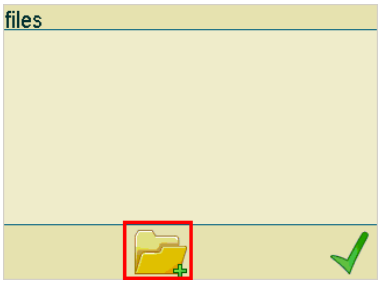
Enter a new filename in the text field. Press the green check check mark to finish. You can use maximum 7 characters for the file name.



To change active directory press "active directory". Active directory is where your file will be saved on the internal memory card. Each directory level can contain 50 entries, where an entry is a layout or another directory. Effectively, you can have 2500 layouts with a 2 levels of subdirectories.



Next, press the "new directory" icon at the bottom of the screen.

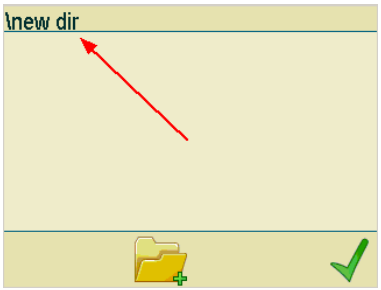


Enter new directory name .

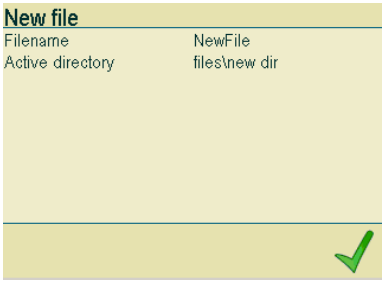
Press green check mark to continue.

On the next screen you have changed location to the new directory. The new directory name will be shown at the top of the screen.

Press the green check mark to return to the previous screen.



Press the green check mark to finish.

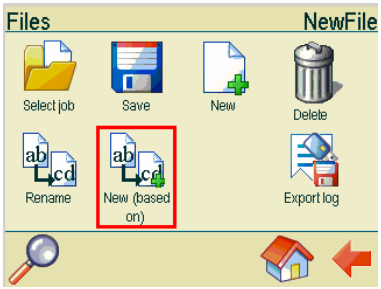


Now your file will be created and will be the active file. It will be empty (no objects), and will have parameters based on the machine parameters. You are now ready to create content.

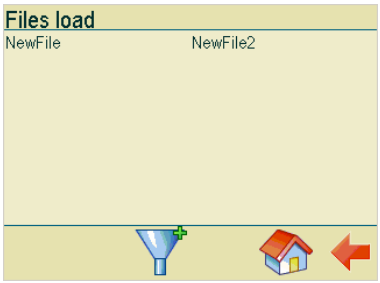
Create a new layout, based on another

The option "New (based on)" will save a layout under a new name. This option is an advantage if you want to create a new layout using the settings from another layout.

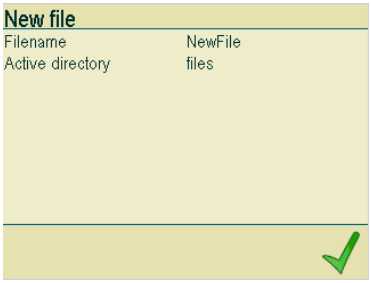
Select "New (based on)"



Select source layout.



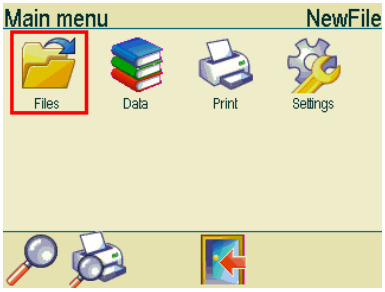
Enter name for the new layout. Press the green check mark to continue.



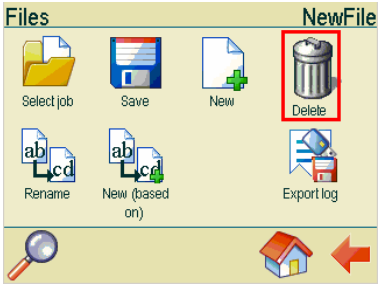
The MTHP4 will automatically save your new layout to the internal memory card

How to delete a layout

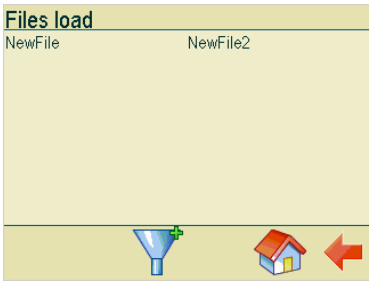
Select "files" in the main menu.



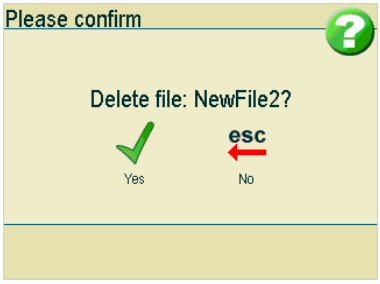
To delete a layout, select "delete".



Select a layout to delete.



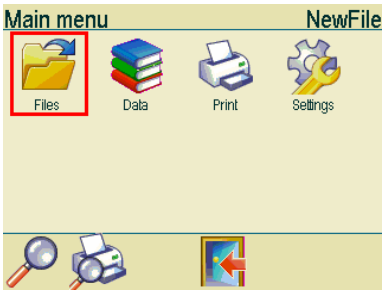
Press Yes to confirm.



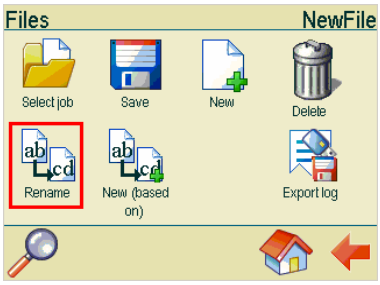
Notice that if you delete the active (current) layout, it will still remain in memory and can actually be saved again.

How to rename a layout

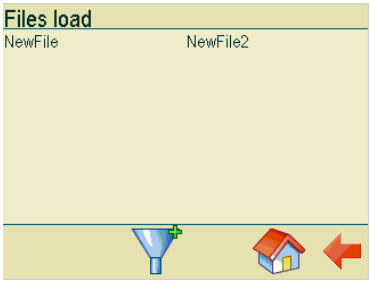
Select "files" in the main menu.



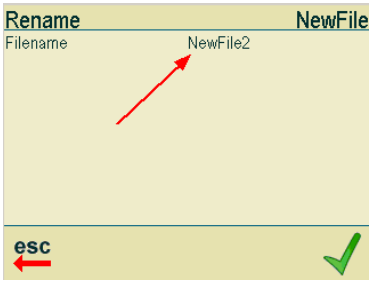
To rename a layout, select "rename".



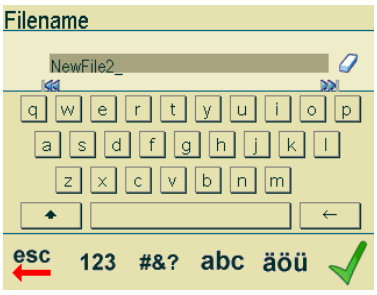
Select layout to rename.



Press filename.



Enter new layout name.



Press the green check mark to continue.

Add content to your layout

This section details how to add content to your layout.

As detailed above, there are 3 types of objects: text, barcode and graphics. Text and barcode objects can contain one of 6 different content types.

When adding objects like illustrated here, you will create BOTH an object, and a corresponding content, linked to the object.

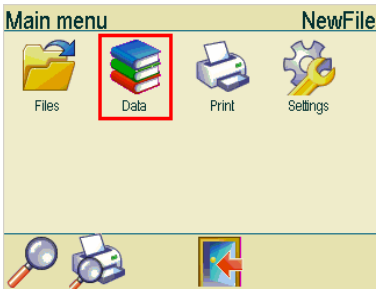
The procedure for adding objects with content is the same for text and barcode objects, and will only be described in detail for text objects.

Text objects

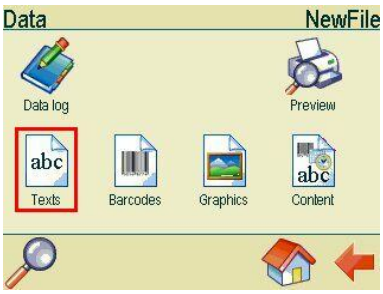
Text objects display the content inside as TEXT - letters and numbers. There is no limit on the type of content that can be added to a text object.

How to add objects

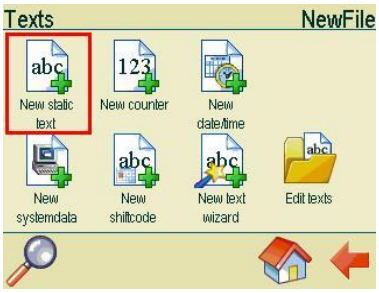
Objects are added using the "DATA" menu.



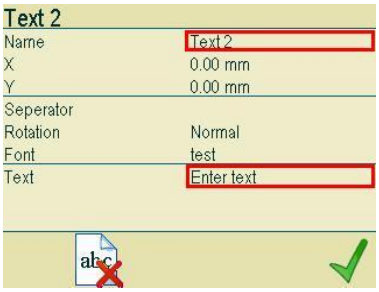
From here you can add different types of object as described earlier



Under the object type, you can add content along with the object. Marked here is a text content.



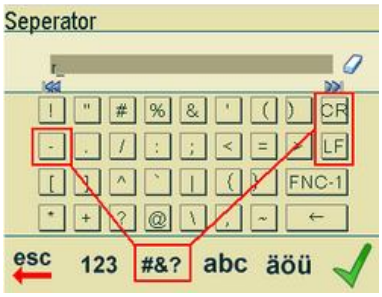
Doing so will display the properties for the object.



General properties for objects

Many of the properties are general for all objects regardless of content.

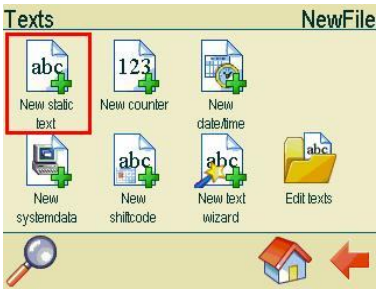
The following properties list will not be repeated for each content type.

Property	Description	
Name	Descriptive name, must be unique to the layout, and can not be empty.	
X	Position in the print direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel)	
Y	Position in the vertical direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel) If the object is positioned outside the canvas the message "Warning object out of canvas" will be shown.	
Separator	 You will find "CR", "LF" and "-" in the special characters menu.	Separates multiple content Options: "CR", "LF"(linefeed), "-", (Space) "-" will display objects like this (Counter)-(date). "LF" will display objects like this (Counter) (Date) "CR" will display objects like this (Counter) (Date) Space will display objects like this (Counter) (Date)
Rotation	Allows you to rotate the object in 90 degree steps. If the selected font cannot be rotated, [select font] will be shown in the font line. Please go to the font menu and select a different font that can be rotated.	
Font	Select font. You can use MiniDraw to create new fonts. No more than 50 fonts can be stored on the MTHP4 . Up to 10 fonts can be used in one layout.	

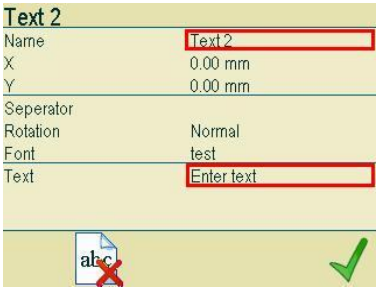
Adding text object with content

Text object with static content

Static text will not change automatically, and acts like a label in the message.



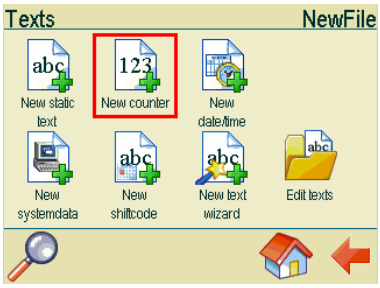
You can enter the text at last line.



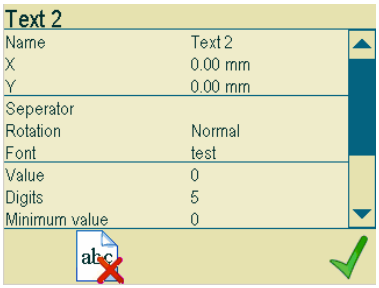
Property	Description
Text	String content - maximum 127 characters

Text object with counter

Select "New counter".



Enter parameters. Parameters are described below.



Press green check mark to finish.

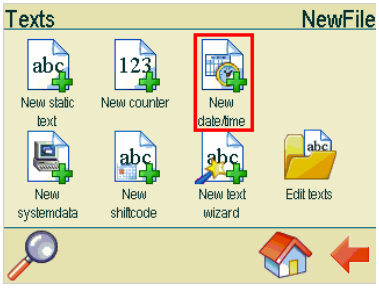
Parameter list(text object with counter)

Property	Description
Value	Current value at print mode start
Digits	Number of digits shown. The maximum number of digits is 10.
Minimum value	The minimum value displayed in the counter. Minimum value is −2,147,483,648, after which it will display maximum value.
Maximum value	The maximum value displayed in the counter Maximum value is +2,147,483,647, after which it will display minimum value. If the maximum value exceeds the selected number of digits, only the last digits will be displayed. Example: Digits = 3. Max = 1000. Counter will display 998, 999, 000, 001.
Lead-in	What should be in front of current value. Select either: Zero (displays 000123) Space (displays 123) Nothing(displays123)
Step value	Counter increments. With a setting of 3, the counter will display 0,3,6,9,12.....

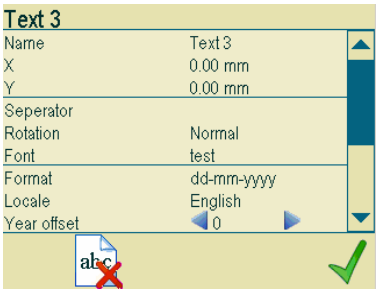
Step count	How many times the counter is repeating. This is independent from the message, repeat, set in the layout settings. If step count has been set to two, print will be 99,99,100,100,101,101. If layout repeat has been set to two and the counter repeat has been set to off, the print will be[99,100] [101,102] (Sensor signals enclosed in [ ])
Reset step on print start	Select this option to reset step count when you enter print mode.
Reset on print start	Continue counting at print mode start, or reset to a value
Reset value	The value to start from if “Reset on print start” is selected. May be equal to or different from minimum.

Text object with date/time

Select "New date/time".



Enter parameters. Parameters are described below.



Press the green check mark to finish.

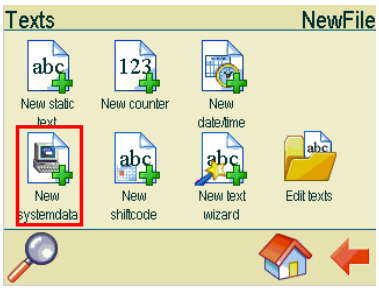
Parameter list(text object with date/time)

Property	Description
Format	Format determines how date and times is displayed. If you enter dd-mm-yyyy, the date will be displayed like 28-04-2009. Refer to the "date formats" in the reference sections for a full list of date codes. Anything entered that is not on the list, is interpreted literally (such as comma, full-stop, dash etc). Also strings that are in quotes are interpreted literally.
Locale	Determines long and short names for days and months. Press locale and select a locale file from the menu. The MTHP4 contains locales for various different languages.

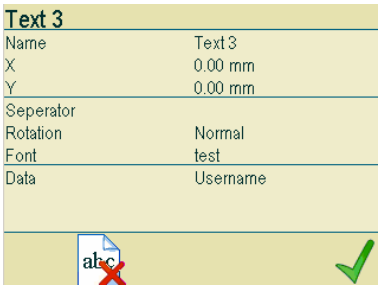
Property	Description
Offset	Select a different date and time than the one set by your system clock. You can make offset year, month, day, hour, minute and seconds, independently, and both forward and back. Use blue arrows to add/subtract one, or click the number to edit directly
Example	Not a setting, but the resulting (printing) date code, formatted with format pattern, locale and offset

Text object with systemdata

Select "New systemdata".



Enter parameters. Parameters are described below.



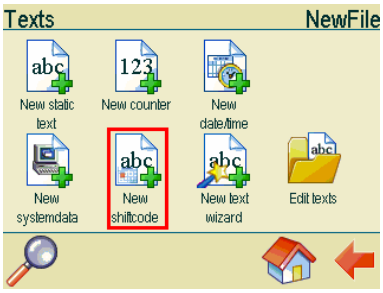
Press green check mark to continue.

Parameter list(text object with systemdata)

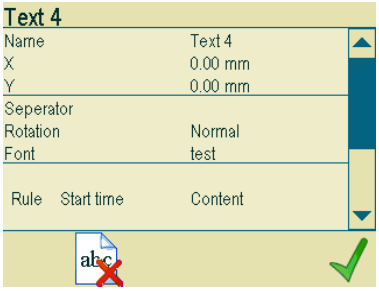
Property	Description
Data	Select data to display. Username: User currently logged in. Line name: Descriptive string. Value is set under machine parameters. Filename: File currently loaded. Print number: Number of current print. Validator name: Validator of message currently printing. Job print counter: how many prints done in the current job count

Text object with shiftcode

Select "New shiftcode".

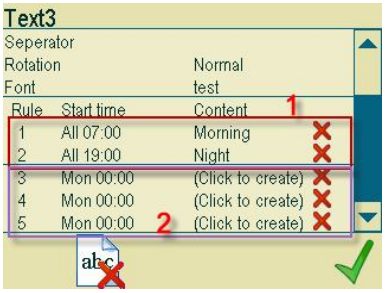


Enter parameters.

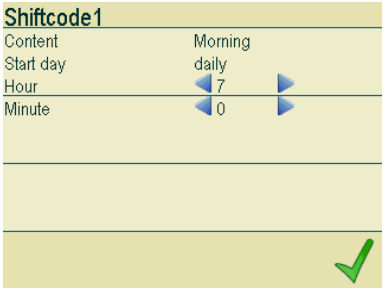


Without defining rules, the shift object will not show anything. Scroll down to see the rulesets.

The rulesets illustrated here have two active[marked 1] and three inactive [marked 2] rules.



Click on any of the 5 rules to edit it. Click on the "X" next to a rule to deactivate it.



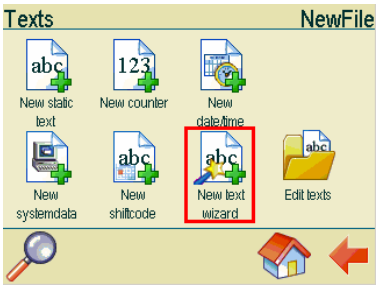
Property	Decription
Content	Enter content to display when the rule is active.
Start day	select between "daily" which is every day, or one of 7 weekdays.
Hour / Minute	When the rule should be active

Text object with multiple content

With the text wizard, you can create an object with more than one content. The different content does not have to be of the same type.

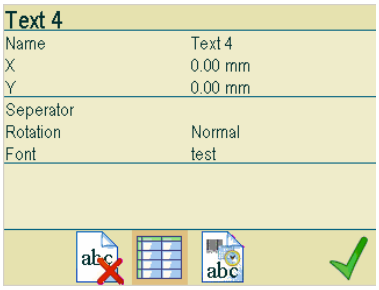
This is useful if you wish to hold together strings of different (varying) length, f.ex a date and a string.

Select "New text wizard".

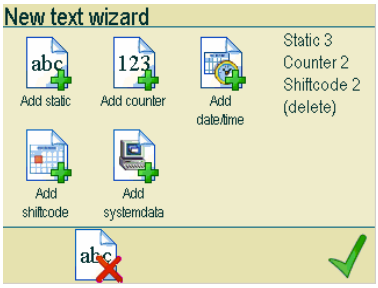


Add content. Added content will be displayed in the list on the right.

Each time you add content, you will be presented with the options for that content type, as when adding objects with content.



To remove content, press (delete) in the content list top right.



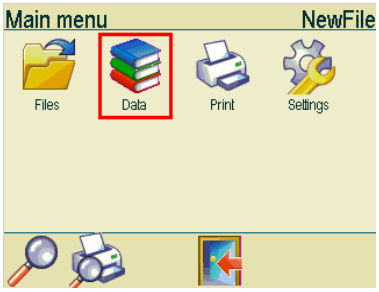
Press green check mark to finish.

Barcode objects

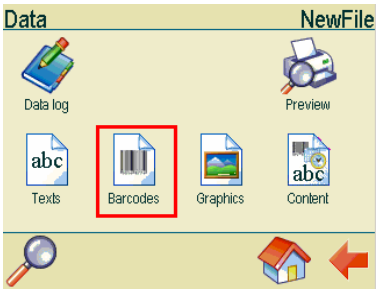
Barcode objects display the content inside as a barcode. You can place any type of content inside a barcode object, but you are only allowed to add the object if the resulting string is valid for the barcode symbology chosen. If f.ex 12 characters, numbers only is expected, you are not allowed to add a string or a longer/shorter number.

Properties

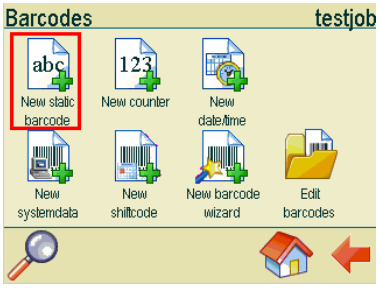
Select data in the main menu.



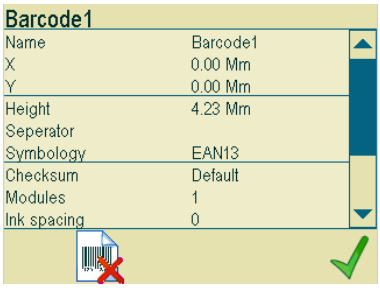
Select "Barcodes" .



Select content to add in barcode. As an example, static text content is selected here.



Enter parameters. Parameters are described below.



Press green check mark to continue.

Properties for the barcodes

Property	Description
Name	Descriptive name, must be unique to the layout, and can not be empty.
X	Position in the print direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel).
Y	Position in the vertical direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel) If the object is positioned outside the canvas the message "Warning object out of canvas" will be shown.
Height	Enter barcode height.
Separator	Optional, 1 character that is used to separate content. Example: you wish to concatenate Batch number and a counter. Put both in the same text object, and use e.g. space as separator. You will get an output like XCBVJF 3345.
Symbology	The barcode type. Select one of the options shown below. EAN8 EAN 13 UPC-A Interleaved 2 of 5 Code 3 of 9 Code 128 EAN 128 DataMatrix DataMatrix with GS1/EAN128 structure
Checksum	Change calculation of the check sum for the chosen barcode type.
Modules	Multiplication of barcode size. 1 is the smallest possible size barcode. Module size cannot be smaller than font size, otherwise the human readable font will not be readable. Recommended module size is 6 or above.
Ink Spacing	Add extra space between the black bars to compensate for ink bleeding into the printed material.
Extra Lines	This will add extra width to the black lines.
Human readable	Turns human readable part of barcode on or off.
Human Readable Font	Font type for the human readable part of the barcode. You can create new fonts with MiniDraw . No more than 50 fonts can be stored on the MTHP4 . Up to 10 fonts can be used in one layout.

Adding barcode object with content

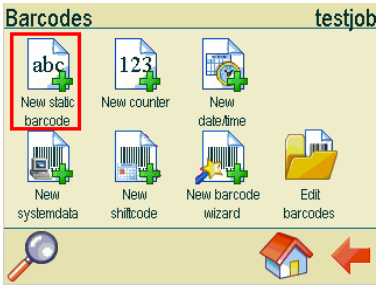
Barcode with normal content types

Adding normal content to barcodes works in exactly the same way as adding content to text objects. The only difference is – as mentioned above – that the resulting string MUST be according to the barcode specification.

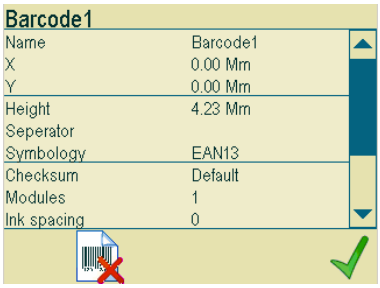
Please see above for content type parameters.

An example of static barcode content is given below

Select "New static barcode".



Enter parameters



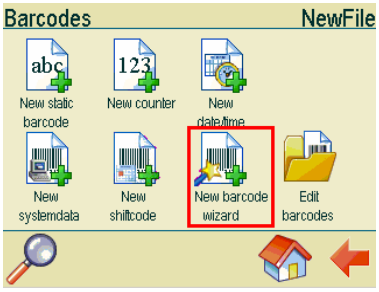
EAN 128 barcodes

Use the the barcode wizard to create EAN 128 structured barcodes. These contain data identifiers that tell what the following data is (semantic meaning), in order to differ between f.ex item number from weight and size.

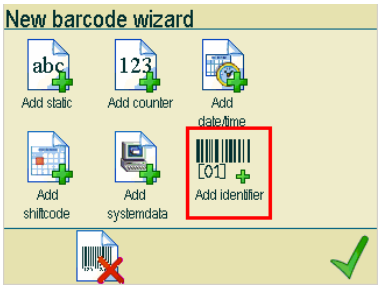
Identifiers and data must ALWAYS be in the order [identifier][data][identifier][data] etc

An example on how to create a EAN 128 barcode is shown below.

Select "New text wizard" from the barcodes menu.

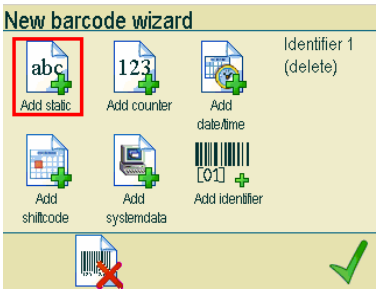


Select "add identifier".

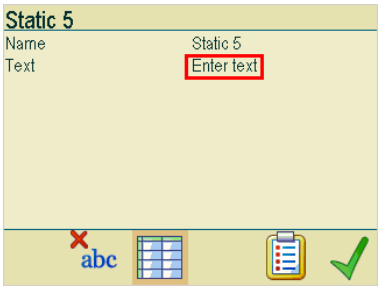


Set "ID code" to 1.

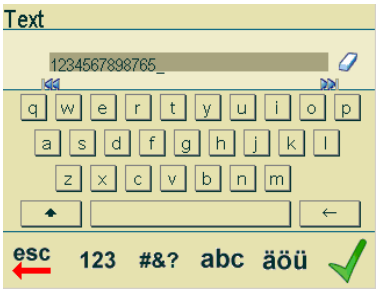
Select "Add static".



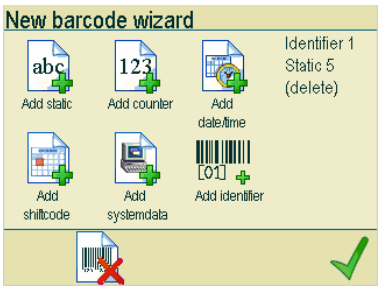
Select "Enter text".



Enter 13 numbers. (since ID 01 is defined as n02+13+1 check digit)

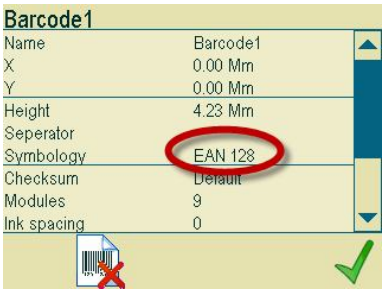


Select ok to enter barcode setup menu.



"Symbology" must be set to EAN 128 or DataMatrix (GS1).

Press green check mark to finish.

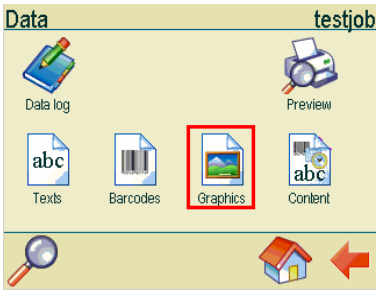


Graphical objects

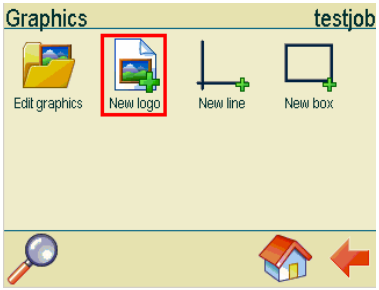
Graphical objects are not variable and don't display any information. But they can serve to make the layout visually more attractive, or to display things not possible with text.

Logos

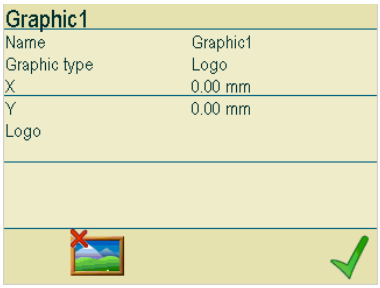
In the data menu, select "Graphics".



In the graphics menu, press the "New logo" button.



Enter parameters. Parameters are described below.



Press green check mark to continue.

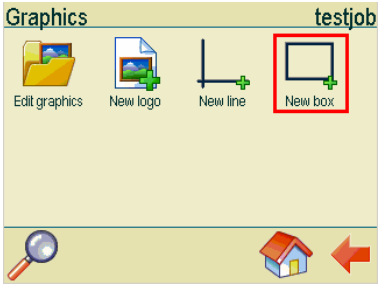
Parameter list(logos)

Property	Description
Name	Descriptive name, must be unique to the layout, and can not be empty.
Graphic Type	Chose between logo, line, or box.
X	Position in the horizontal direction, starting from upper left corner.The distance is set in current units (mm/inch/pixel)
Y	Position in the vertical direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel)
Logo	Press logo, to select a logo currently stored on the MTHP4 Logo files must be 2 colors maximum for best result. To upload new logos to the MTHP4 please install the MiniDraw software.

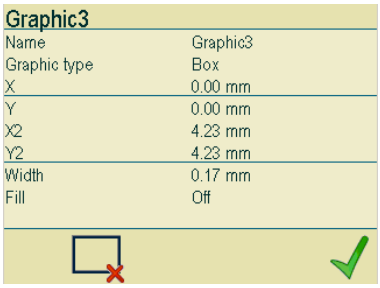
The MTHP4 has a maximum capacity of 10 graphical objects(logos, lines, boxes) in one layout (MAX 50 altogether).

Boxes

In the graphics menu, press the "New box" button.



Enter parameters. Parameters are described below.



Press green check mark to continue.

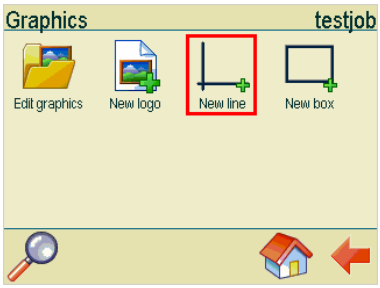
Parameter list(Boxes)

Property	Description
Name	Descriptive name, must be unique to the layout, and can not be empty.
Graphic Type	Chose between logo, line, or box.
X	Position in the horizontal direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel)
Y	Position in the vertical direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel)
X2	When graphic type is box, x2 is the x coordinate of the lower right corner.
Y2	When graphic type is box, Y2 is the Y coordinate of the lower right corner.
Width	Select the line width. Available for both lines and rectangles.
Fill	Fill the rectangle or not. Available only for rectangles.

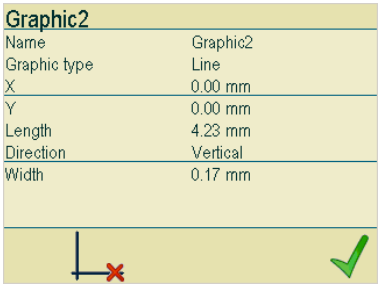
The MTHP4 has a maximum capacity of 10 graphical objects(logos, lines, boxes) in one layout (MAX 50 altogether).

Lines

In the graphics menu, press the "New line" button.



4. Enter parameters. Parameters are described below.



Pres green check mark to continue.

Parameter list (lines)

Property	Description
Name	Descriptive name, must be unique to the layout, and can not be empty.
Graphic Type	Chose between logo, line, or box.
X	Position in the horisontal direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel)
Y	Position in the vertical direction, starting from upper left corner. The distance is set in current units (mm/inch/pixel)
Length	The length of the line. Available only when line is selected as graphic type.
Direction	Select either vertical and horizontal lines.Available only when line is selected as graphic type.
Width	Select the line width. Available for both lines and boxes.

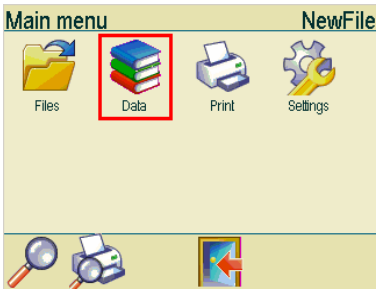
The MTHP4 has a maximum capacity of 10 graphical objects(logos, lines, boxes) in one layout (MAX 50 altogether).

Prompts

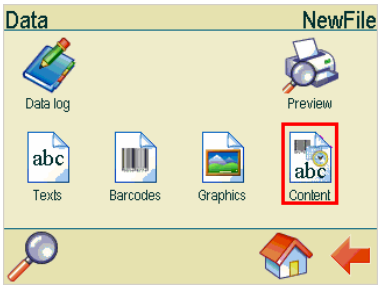
Prompts is not content by itself, but a way to force the user to input data at print start. Typically used where the designer does not know the content of this data in advance - or where it changes regularly.
Prompts are applied to the CONTENT, not the objects.

Setup prompts

Select data in the main menu.

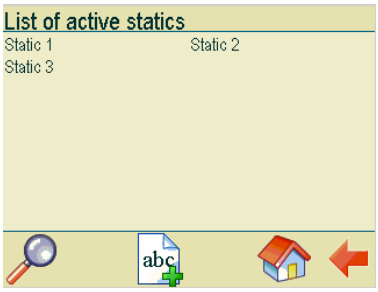


Select "content" in the data menu.

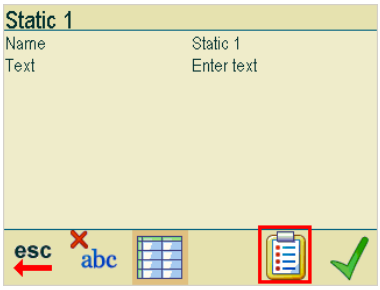


Select "edit statics". Statics is for fixed text. If you wish to be prompted for other content types, select Counter or Date/Time instead. You can not be prompted for system data, shift codes or identifiers as these are given automatically.

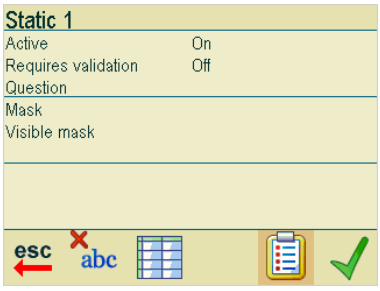
Select the content you want to change.



Press the prompt icon at the bottom of the screen



Edit prompt parameters. Parameters are described below.



Press green check mark to continue.

Prompt parameters:

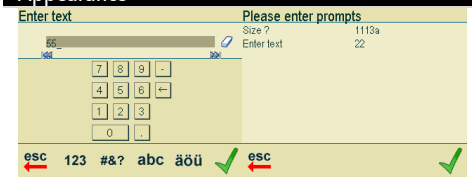
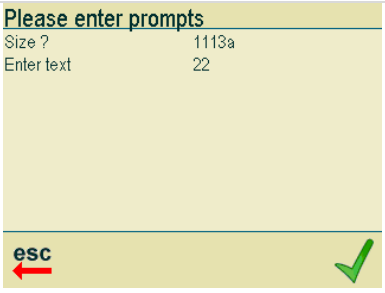
Property	Description
Active	To activate the prompt, select on.
Requires validation	When this option is set to on, the prompt cannot be accepted before a user with "validator" status has entered his password. Please refer to the chapter on user accounts.
Question	Enter a question to display, for instance

Property	Description
	"Enter batch no ?"
Mask	If you enter N, only numbers will be accepted as input. If you enter X, only characters will be accepted. If you have a mask on the prompt, the keyboard will change automatically during input, and you are locked to that keyboard. Example: NNNN will display the numeric keypad for entry of 4 characters. Notice: SPACE will allow you to use literals that you jump over.
Visible mask	Default value shown in input box. If you have chosen SPACE in mask above, the visible mask will be printed literally at that position and jumped over in input. Example Mask = NN[S]NN[S]NN Visible = 00-00-00 Input = 123456 Result = 12-34-56

Use prompts at print start

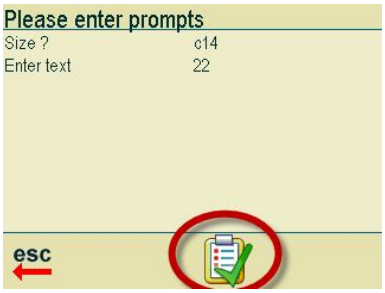
Prompts are used when you start print mode. You will be asked to enter the values for each of the content where you have activated prompts.

Depending on the prompt view mode selected in Settings->Screen->Prompt display, you may see the prompts as one of the following:

Appearance	Mode selected
	Single view Prompts are shown one by one, always in edit mode At the end you are presented with a list of values entered. You can click any of them again to edit, or accept all.
	List view Prompts are shown directly as a list of current values, click to edit one or accept all.

Validation

If one or more prompts have Validation=ON, the final list of prompts will look different. Instead of a green checkmark, it will have a checkmark over a prompt icon.



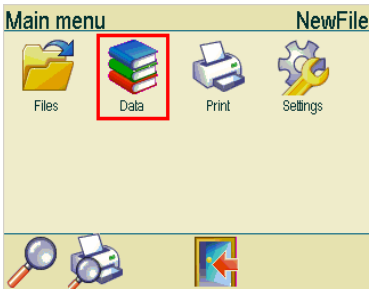
When you select this icon, you are taken to the login screen. Select here a user that has the role VALIDATOR activated. Enter password for that user. If login is succesful, the checkmark is again the green accept icon. Press it, and print starts - now with prompts validated.

Notice that if the user that starts print mode is ALSO a validator, the prompts will automatically be validated by that user, and no validation screen will appear.

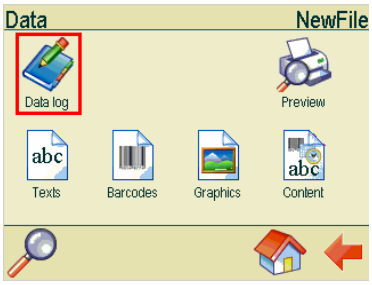
How to setup Data log

The data log allows you to select content from your layout and save the values to the internal printer logfile. You can add up to 8 different content objects and select a separator. Every time a print has finished, the data log text will be saved as one line in the printer log.
Activating data log may affect print performance.

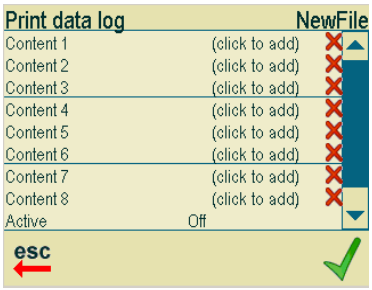
Select data in the main menu.



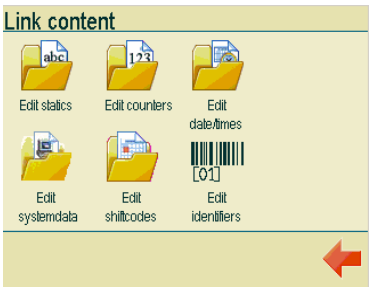
Select "data log" in the Data menu.



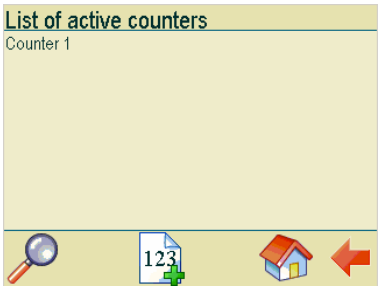
To add content to the data log, please select "(Click to add)".



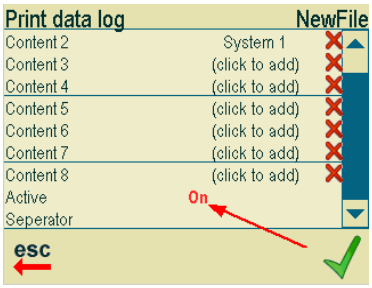
Next, select the type of content you want to add.



Select a file from the list of active content.

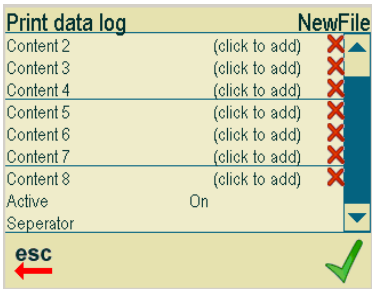


Change "active" to on.



Select separator to keep the selected content apart.

Type in a symbol or press space. Press the green check mark to continue.

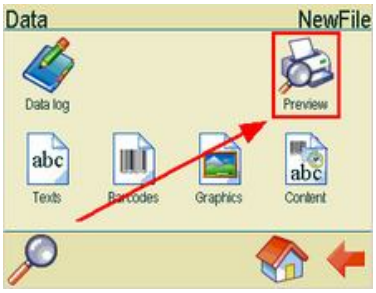


Press green check mark to finish.

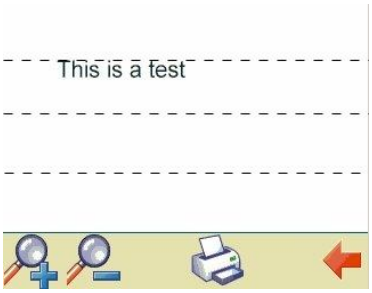
You can retract the files later. Please read the chapter "How to use the USB feature".

How to preview your layout

To display the layout before you start printing, please press the preview icon. You will find the preview icon at the bottom of the main menu or in the data menu.

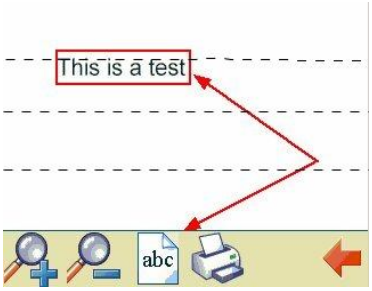


If more than one pen is installed on your system, the pens will be separated with dotted lines in the preview window. The dotted lines are only visible on the preview screen and will not be printed. To zoom in and out, press the magnifying glasses.

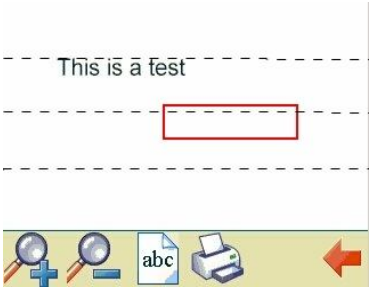


Press the printer to enter print mode. Press the red arrow to return to the data menu.

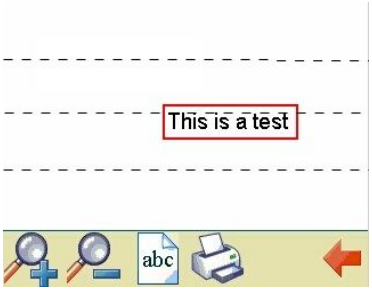
It is possible to access the object properties menu from the preview screen. Simply double click an object to select it. A selected object will be marked by a red square. When an object has been selected, the object properties icon will appear at the bottom of the screen. Press the icon to access the object properties menu. Please refer to the section "How to edit object properties" for further information on how to edit object properties.



You can also reposition the object right from the preview screen. Select an object and drag the square to a new location.



Let go. The content will automatically move to the new location.



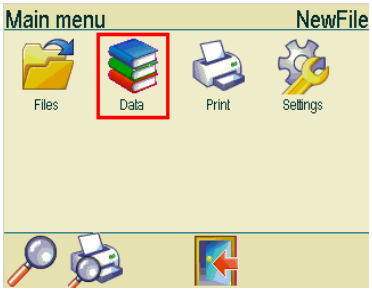
Edit the message

> This section details how to edit your layout (objects and content) to change properties in an existing message.

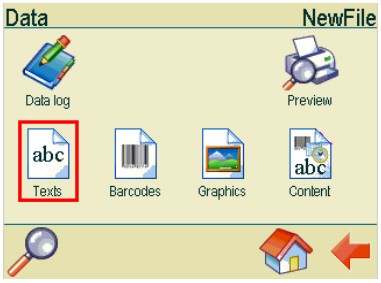
Edit object properties

Use this method to edit existing content based on a list of object names. An alternative and perhaps simpler method is to select the object from the preview screen (red border) then select object properties icon.

Select data in the main menu.

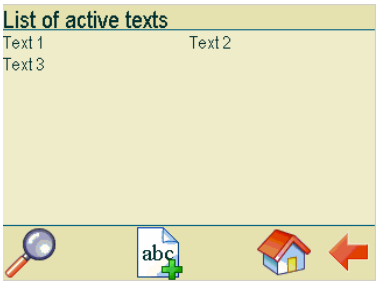


Select object type (text / barcode / graphic)

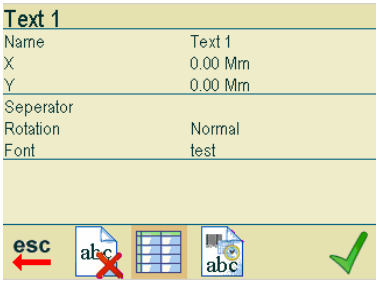


Press the Edit texts button.

Select a text from the list of active text objects.



Make the required changes. Parameters are described above.



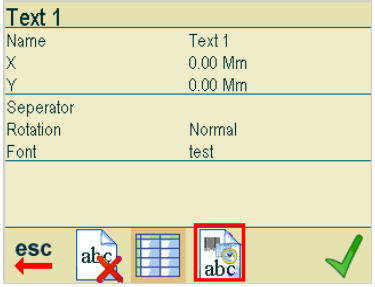
Add / modify links between objects and content

Objects and content are stored in two different locations. When you create object and content, you create a link between the two.

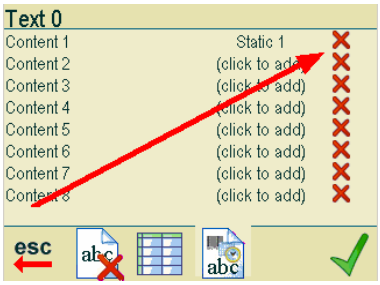
The link menu gives you the opportunity to change the content of an object.

Notice that editing of links between content and object ONLY is possible when "Simple Objects" for the user is off.

In the object properties, press the content icon.

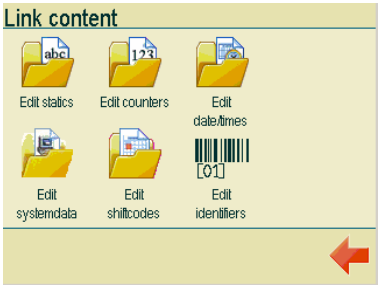


Press the red cross to delete link to content. This will not delete content itself.

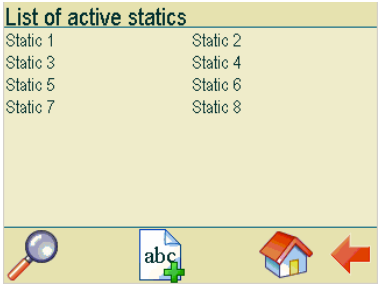


To link to different content, press the text (click to add).

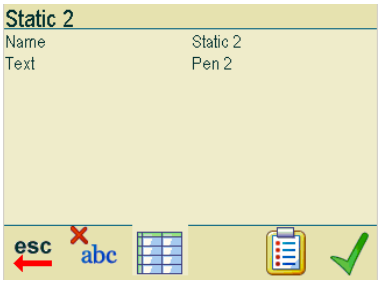
Enter one of the categories shown below .



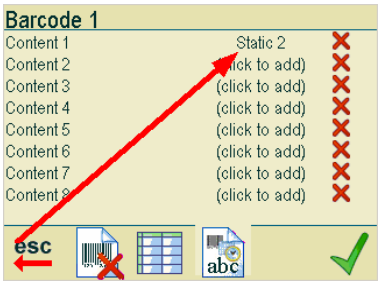
Select a name from the list.



To finish, pres the green check mark in the bottom right corner.



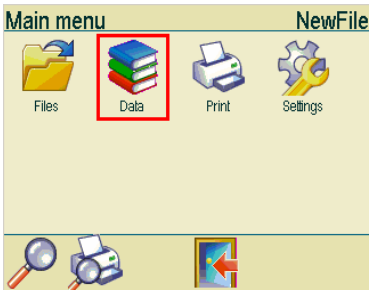
The selected content has now been added. You can add up to 8 contents to the same object.



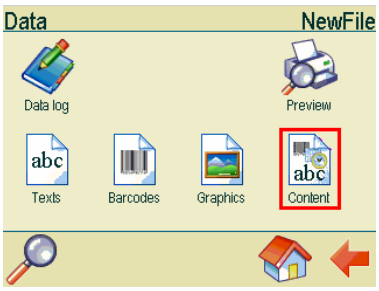
How to edit content properties

Using this procedure you can edit the content directly, regardless of which objects the content is linked to. Notice that editing content directly is disabled if simple objects is ON for the user.

Select data in the main menu.

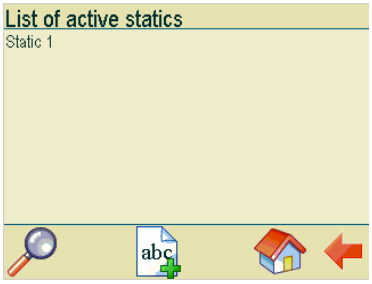


Next select "content".

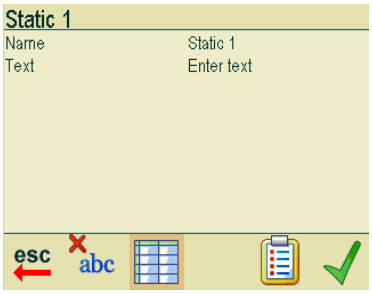


Select the type of content you wish to edit. As an example, "Static text" is selected here.

Select content from the list of content of that type



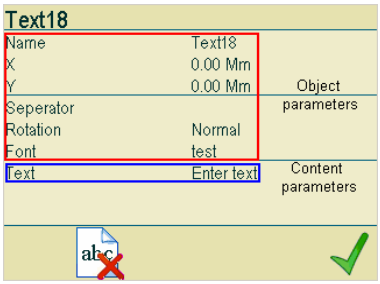
Make the required changes. Parameters are described above.



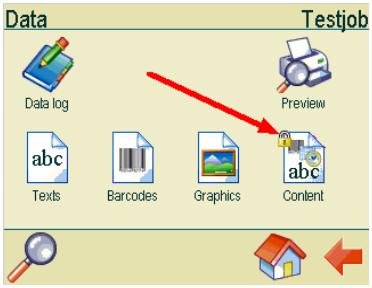
Press the green check mark to continue.

Simple objects

In simple objects mode, both object and content parameters are edited from the object menus. You will only be able to have ONE content per object.



If simple objects is set to on, the content menu will be locked.



Single objects is default if login has been disabled. Please refer to the chapter on screen settings.

You can enable simple objects in the user setting menu.

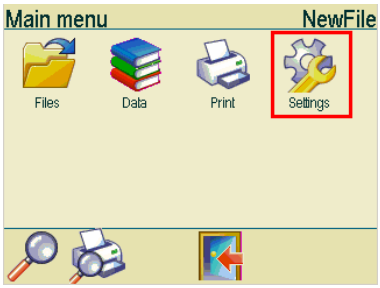
Change print settings

> Print settings is where all parameters for the printout is stored. Settings these right are crucial in order to get a good looking printout.
>
> Please also refer to installation manual

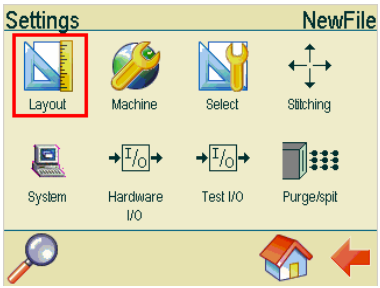
How to edit Layout parameters

Layout parameters are settings for each individual file you load. Most settings in the controller are stored system-wide as they related to the physical hardware you have, so layouts have few parameters.

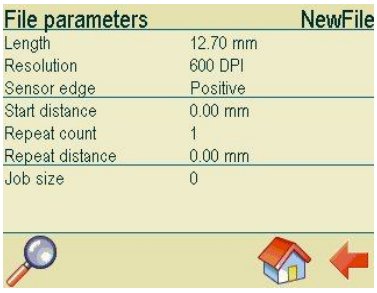
Select settings in the main menu.



To edit layout parameters, select "layout".



Layout settings are saved to the individual layout file.



NOTICE: THIS IS AN OUTDATED SCREENSHOT, which does not show variable DPI.

Length

The length of your layout. When new layouts are created, the length is read from the machine parameters setting.

Vertical resolution

In vertical resolution it's possible to select between the following:
300 dpi (row A)
300 dpi (row B)
300 dpi (alternating row A+B)
600 dpi

Horizontal Resolution

In horizontal resolution you can choose from 75 to 2400 dpi in 18 different steps. This allows you to choose very fast and cost-saving print (with a little lower quality), or very high resolution print (compromising speed and cost), or a setting in-between.

Use the arrows to select lower / higher DPI. The list will wrap, so the lower part of 75 dpi will be 2400 dpi.

The maximum possible line speed for the resolution chosen is indicated, example:
300 dpi / 2400 dpi (19 m/min)
This does not mean you can't print faster, but the resolution will be lower and the print will be stretched. Sometimes this can be desired.

Sensor edge

Set the sensor settings to positive or negative, depending on the type of sensor you are using. If you want printing to start when the sensor's signal goes active, the sensor edge should be positive. If you want printing to start when the sensor's signal goes inactive, the edge should be negative.

Start distance

Distance traveled from sensor signal to print starts.

Repeat Count

How many times the controller will print every time the sensor is activated. Notice that counters have their own repeat setting, meaning that if you want to print same counter values, you should also adjust counter repeat.

Repeat distance

Distance between two repeats, from end of one to the start of next. There will always be a minimal gap of 4 mm for all DPI modes except 1 row.

Job size

The number of prints to run before terminating automatically. If set to 0, the job must be stopped manually.

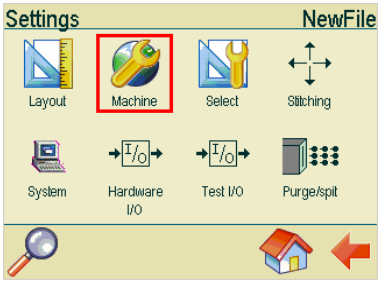
Job printed count

How many prints has been done in this layout already

How to edit Machine parameters

Machine parameters are where most of the setup related to printout is stored. Please refer to installation manual for a detailed explanation of parameters.

To edit machine parameters, select "machine".



Length

The total length of your layout.
Important: This is only the default layout length. This value will be copied to layout settings every time you create a new layout. If you want to change the length of your layout, go to layout settings.

Vertical resolution

In vertical resolution it's possible to select between the following:
300 dpi (row A)
300 dpi (row B)
300 dpi (alternating row A+B)
600 dpi

Horizontal Resolution

In horizontal resolution you can choose from 75 to 2400 dpi in 18 different steps. This allows you to choose very fast and cost-saving print (with a little lower quality), or very high resolution print (compromising speed and cost), or a setting in-between.

Use the arrows to select lower / higher DPI. The list will wrap, so the lower part of 75 dpi will be 2400 dpi.

The maximum possible line speed for the resolution chosen is indicated, example:
300 dpi / 2400 dpi (19 m/min)
This does not mean you can't print faster, but the resolution will be lower and the print will be stretched. Sometimes this can be desired.

Print direction

Print direction is the travel direction of your media. Select either Right->left, Left-> Right or bidirectional.
In bidirectional mode, your controller prints one line from left to right, then the following line from right to left.

Start direction

This option applies only to bidirectional printing and will only be displayed if bidirectional has been selected under "print direction".
Your print head must be set to go either Left->Right or Right->left when a sensor signal is detected. Select Input 1 -> Input 4 to set the print direction remotely. If the signal goes from low to high, the head will print from Left->right. If the signal goes from high to low, the head will print from right->left. Connect input 1-2 to the I/O connector. Connect input 3-4 on the control connector.

Print mode

Select either Velocity, Position Encoder or Modular Encoder. If you select the position option, encoder pulses will be used to calculate the speed. If modular is selected, firing of the nozzles is synchronized with the encoder pulses.

Velocity
This value must be set, if print mode is set to velocity. Please make sure the velocity equals the speed of your media and that your media moves with a constant speed during printing.

Encoder

This value must be set, if print mode is set to position. The value entered here is the encoder resolution. Resolution is calculated by dividing the circumference of the measuring wheel by the number of pulses per revolution generated from the encoder

Modular

This options must be set if print mode has been set to modular. If you enter 1, the nozzles will fire each time an encoder signal is received. If you enter 4, the nozzle rows will fire ones for every 4 encoder signals received.

Quadrature

Select quadrature to measure on the back edge of the encoder signal. This will double your pulses (single-channel encoder) or quadruple your pulses (double channel encoder). Divide distance per pulse accordingly.

Sensor edge

Set the sensor settings to positive or negative, depending on the type of sensor you are using. If you want printing to start when the sensor's signal goes active, the sensor edge should be positive. If you want printing to start when the sensor's signal goes inactive, the edge should be negative.

Start distance

An important part of setting up your system is to measure the distance between the start sensor and the head. This is to ensure the product is printed at the right spot. Remember the value must correspond to the physical setup.

If bidirectional printing is selected, two options are available, start distance Left->right and start distance Right->left. Select a start distance for the Left->right travel direction and one for the Right->left travel direction.

Repeat Count

How many times the controller will print every time the sensor is activated. Notice that counters have their own repeat setting, meaning that if you want to print same counter values, you should also adjust counter repeat.

Repeat Distance

Distance between two repeats, from end of one to the start of next. There will always be a minimal gap of 4 mm for all DPI modes except 300x300 dpi (One row).

Endless

If endless is selected, the controller will continue printing as long as the photo cell input is active.

Buffer mode

The buffer is a location in the controller memory that holds data waiting to be printed when printing of other data is in progress.
You can choose between the following settings:

Normal buffer
The controller will always keep 1 or 2 images in the buffer, ready for next print. Choose this option for best performance and high speed print of f.ex dates or fixed text. The controller will never be “behind” in this setting.

No buffer
The image is always generated only when the start sensor is released. This will guarantee that you always print up to date information – typically you will use this mode if printing the accurate time / date is important.

User managed buffer
Nothing is stored in the print buffer unless specifically done by the operator (using RS232 , ethernet connection or a hardware input). Use this mode if it is important to be in full control of which data is printed.

Alarm on buffer empty

This option is only available in user-managed buffer mode.
Choose how to alert if the buffer is empty (no print stored) and the start sensor is released.

None
You will not get an alarm at all

Screen
There will be an error message on the screen to which the operator must acknowledge

Network
Only send error message via network

Both screen and network
Send message via network and give operator an error message

If you choose to have an alarm, the system will activate the general alarm (fault) condition, which can be taken out on an output. There is an input setting to clear alarm, allowing the operator to acknowledge using an external push-button.

You can take out the specific error (buffer empty) using any (one or more) of the 4 outputs.

Please consult installation manual for instructions on how to wire the output connector.

Stop on buffer empty

This option is only available in user-managed buffer mode.
Choose what to do if the buffer is empty (no print stored) and the start sensor is released.

Off
Do not stop print on buffer empty
This will pass the product UNPRINTED since there is no print stored. Also known as a “blank print“. This can be desired for undisturbed print process, if blanks are later taken out.

On
Stop print on buffer empty
This will immediately stop print mode. In this setting no blank prints are allowed. This is desired if blanks can’t later be filtered out.

Start block distance and end block distance

The purpose of block distance is to prevent the sensor from being triggered twice. For instance if the media is an envelope with a window, the sensor will "believe" the front edge of the window to be the back edge of the media. Thus the back edge of the window will trigger the sensor again.

If you are printing on medias of equal length, you can enter the media length as your start block distance and set the end block distance to 0. However this is not possible if you are printing on medias of various size. If that is the case, your start block distance should be a little longer than your start distance. Set the end block distance to 1cm or less.

Line name

What you enter here will be displayed when you create an object with systemdata content and select linename as your data.

Parameter selection

For the following 3 parameters the controller can be set to use either machine parameters or layout parameters:

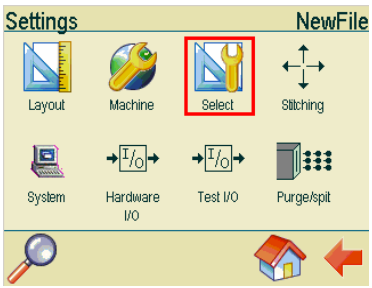
Resolution (Resolution)

Sensor Settings (Sensor edge and sensor distance)

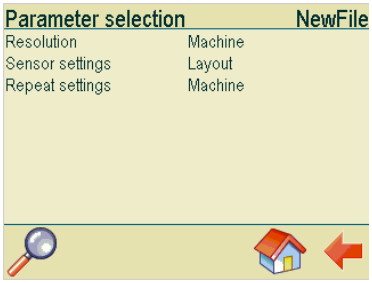
Repeat Settings (Repeat count and repeat distance)

Head Setup (offsets, voltage settings and ink amounts)

Choose "select" in the settings menu.



For each parameter, select either "layout" or "machine".

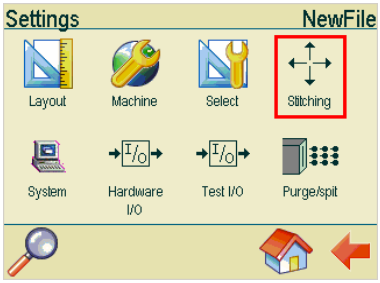


NOTICE: THIS IMAGE DOES NOT SHOW HEAD SETUP SETTING

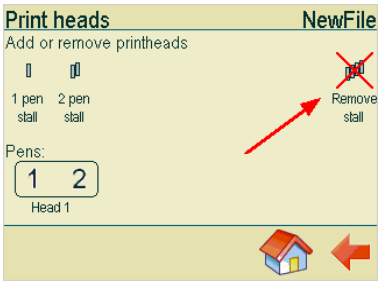
How to setup your print head(s)

Print Head parameters and type are selected in the stitching menu. It is very important that these settings are accurate. The settings here must very accurately match your physical hardware configuration.

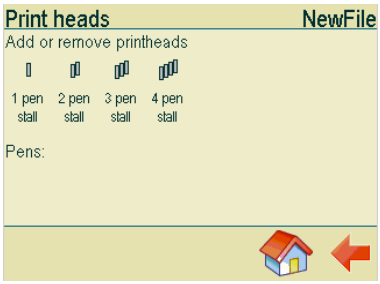
Choose "Stitching" in the settings menu



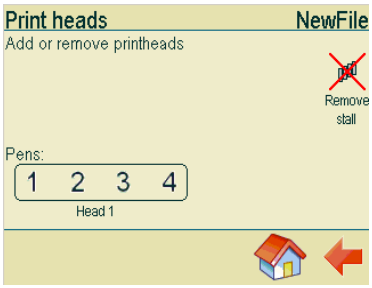
Choose "Remove stall" to remove default configuration



Select a head.



You will return to the previous menu with the changes now in effect.



You can install up to 4 pens. This means you can print with any combination of print heads that will add up to maximum 4. Examples

1+1 pens [2]

1+1+1+1 pens [4]

2+1 pens [3]

2+2 pens [4]

3+1 pens [4]

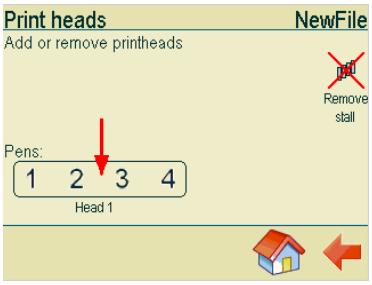
However, the MTHP4 has only one printer port. To install more than one physical head, please order a head distributor with your MTHP4.

Example of head distributor

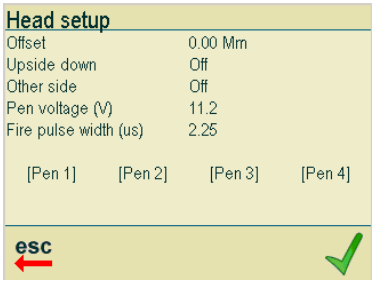
Kindly refer to installation manual.

Print head options

Next, set up the head. Select the head to enter the head setup menu. If you have multiple physical heads, you must do this for each of them.



Make the required changes.



Offset

Head offset is only relevant if you have more than one head on your system. If this is head one, offset must be set to zero.
If this is head two, offset is the distance from the the first nozzle row of the first pen in the first head to the first nozzle row of the first pen in the second head.

Upside Down

This option will mirror the image horizontally. Select this option if you are printing "up" instead of down.

Other side

This option will mirror the image vertically. Select this option if the head is printing from the other side of the conveyor.

Mirrored

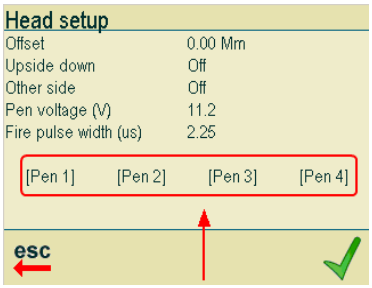
This option will make the head print in reverse (mirror). Use this option if the print media is transparent, like f.ex a web or clear plastic.

Pen Voltage and Fire pulse width

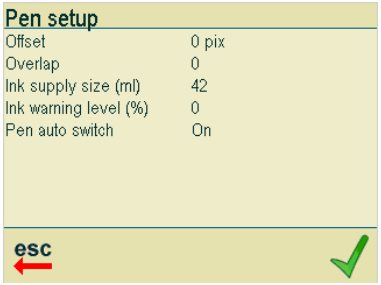
These settings can greatly influence the quality of your printout. Please refer to settings in the Quick start manual.

Setting up the pen

Select a pen to enter the pen setup menu. The number of pens displayed depends on the head size. It will be from 1 to 4 pens. The settings may be different for each pen.



Make the required changes. Press the green check mark to continue.



Offset

Offset for this pen in the current head. Offset for the first pen will be zero. offset for the second pen will be the distance from the first nozzle row in the first pen to the first nozzle row in the second pen. This is typically a distance off 600 pixels.

Overlap

The number of nozzles that are turned off. Will compensate for a small overlap of nozzles.

Ink supply Size (ml)

How much ink at 100% (full) is available to this pen

Ink warning level

Change this setting if you want the MTHP4 to display a warning when the ink level(measured in %) is low.

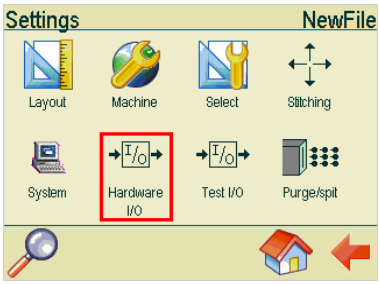
Pen auto switch

This option allows you to disable the pen auto switch. The pen auto switch is located in the head. When a pen is loaded, the switch will be triggered and pen status will be set to "online". If the switch is malfunctioning, the pen is set to "offline" even when a pen has been loaded. In case of a faulty switch, turn pen auto switch off.

How to setup input and output

The MTHP4 has four output and four input channels.

Select hardware i/o in the settings menu.



For each output, select one of the following:

Property	Description
Off	No output
Print Mode	ON when the unit is in print mode.
Printing	ON when the unit is actively printing a message.
Low Ink	ON when one of the pens has low ink warning.
Error	ON when controller is overheating.
Signal generator	Generates a special purpose signal to control external relays, devices or similar.
Buffer empty	You tried to print if the buffer is empty

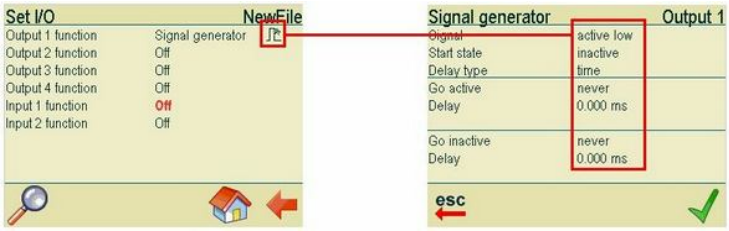
For each input, select one of the following:

Property	Description
Off	Input is ignored.
Purge	A signal will cause the printer to purge.
Start/stop print	A signal will initiate printing. The printer will stop printing if printing is in progress.
Spit enable(active low)	Activate remote spit when signal goes low.
Spit enable(active high)	Activate remote spit when signal goes high.
Reset alarm	Reset alarm condition. Use this to allow acknowledge by push-button

In addition, one of the inputs may be used to select the direction for bidirectional printing.

Signal generator setup

The signal generator is a special output function that allows you to do very powerful chains of events. For example, you can set a signal for 50 ms after 500 mm, and another for 150 ms after 2 seconds. The up to 4 signal generators can be used to control stackers, ejectors, PLCs, cameras etc. Or even the MiniTouch itself!



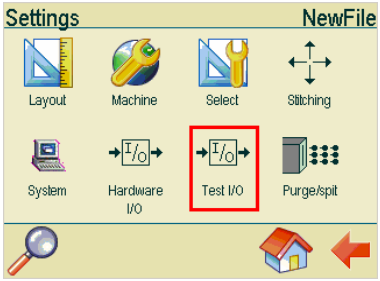
Setting	Meaning
Signal	Set signal to go high or low on activation.
Start state	Set default state to "active" or "inactive"
Delay type	Set delay type to "time"or"distance".
Go active	Select trigger event on print start on print done on start sensor on input 1-4 After delay Never
Delay	Enter a time value in ms (0 to 600000ms) or a distance pixels(o to 1000000 pixels) to delay signal activation.
Go inactive	Select event to set inactive on print start on print done on start sensor on input 1-4 After delay Never
Delay	Enter a time value in ms (0 to 600000ms) or a distance pixels(o to 1000000 pixels) to delay signal deactivation

Press green check mark to continue.

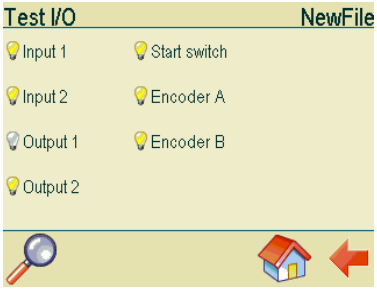
How to test your equipment

When the MTHP4 is being installed, you can check that all hardware connected to the controller is working as expected.

Select Test I/O in the settings menu.



On this screen you will find the start switch, the encoder plus the input and output channels.



NOTICE: THIS IMAGE IS NOT SHOWING ALL POSSIBLE TESTS !

When a signal is ON, the light bulb will light up.

Example:

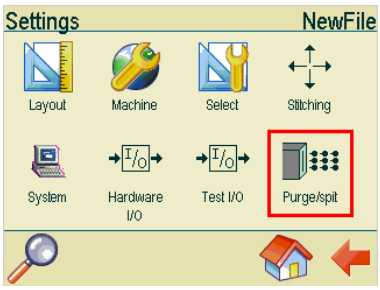
Activate your start switch. If the controller receives a signal from the start switch, the light bulb will light up. Start your conveyor. If the controller receives a signal the lightbulbs "encoder a" and "encoder b" will start flashing.

Click the lightbulb icon to toggle the output signals

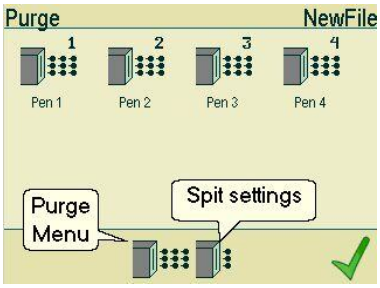
How to purge the pens

Purge and spit are used as maintenance tools to keep the ink from clogging the nozzle rows. Spit is a continuous firing of all channels.

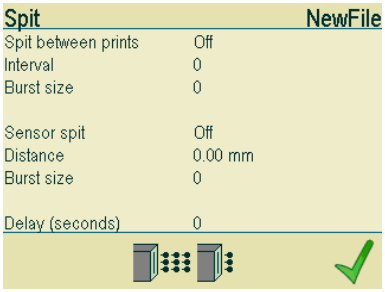
Select purge/spit in the settings menu.



In the purge menu, you can purge each head in your head(s).



At the bottom of the screen, you can enter the spit settings menu. Spit is short firing of all channels, typically few drops per channel very fixed period of time.



Select spit between prints to fire a few nozzles between each print.

Property	Description
Interval	Number of seconds between each spit.
Burst size	Number of times each nozzle fires.

Select sensor spit to spit every time the photocell is triggered.

Property	Description
Distance	How far from the photocell you want the spit.
Burst size	Number of times each nozzle fires.

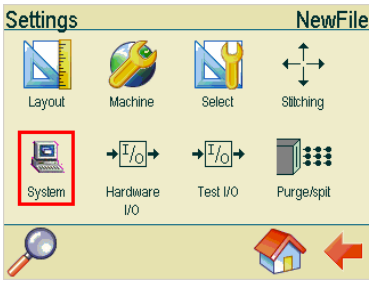
The delay is the number of seconds from one spit to the next. If the sensor is triggered more frequently, the nozzles will not fire. For instance, with a 2 second delay, the system will never spit with less than two seconds between prints.

How to change system settings

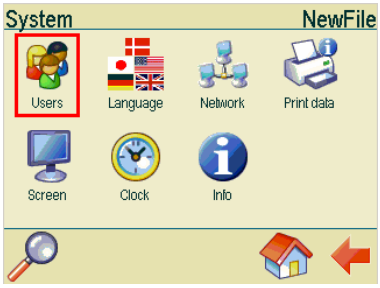
> System settings have influence on the “look and feel” of the controller, but not directly on the printout.
>
> This is where users are edited, the menu language is changed, and clock and network settings are changed.

Edit user accounts

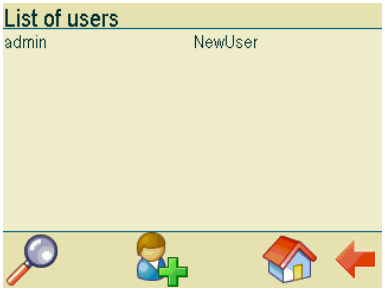
In the settings menu, select "system".



Select "users" in the system menu.



A list of active user accounts will be displayed. Select a user account to edit.



You now have the following options:

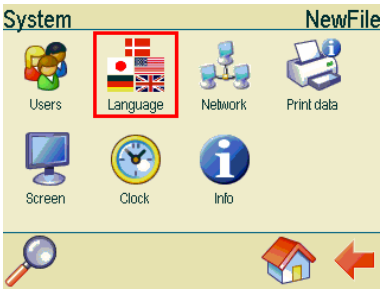
Property	Description
Username	Select a name for the user account.
Password	Enter a password for the user account.
Validator	The user can "sign" prompts where validation is required.
Admin	The user can change any parameter and access all menus.
File access	The user can load files, saves file and add new files.
Object access	The user can edit objects and content
Parameter access	The user can change parameters in the settings menu.
Load access	The user can only load and print layouts.
Simple objects	In simple object mode, content properties will be edited from the object properties menu.

	When simple objects is on ,user cannot access content menu. If "no login" is selected simple objects is default.
Icon	Select an icon to display when graphical login has been selected.

If you want to create a new user account, select the "new user" icon at the bottom of the screen.

Change the language

Select "language" in the system menu.

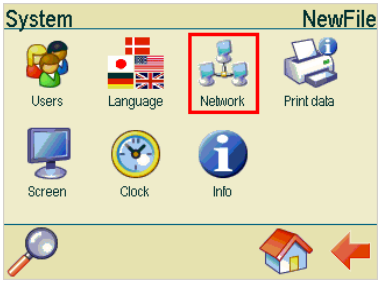


In the language menu, select which language to use for the MTHP4 interface. Press a language name to switch to that language. You will return to the main menu with the new language in effect.

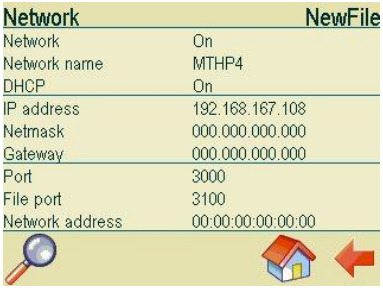
If your language is not on the list, you can make your own. HSA SYSTEMS provides the tools necessary to upload a new language.

Change network settings

Select "network" in the system menu.



Network settings allows you to configure your MTHP4 for communication with the local area network.

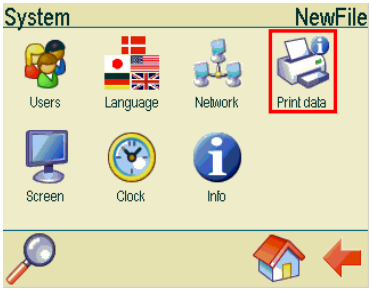


Parameter list

Property	Description
Network	Enable or disable network option.
Network name	Used to identify the unit, when connected to the Communicator software.
DHCP	If this option is set to on, theMTHP4 will search the network for a DHCP server, to automatically obtain an IP address, netmask and gateway. To add an IP address manually select "off".
IP address	Standard settings for IP access. Works just like with a PC network. Typical settings are: IP = 192.168.1.10 Netmask = 255.255.255.0 Gateway = 192.168.1.1
Netmask	
Gateway	
Port	This port is used when the MTHP4 is operated by remote control.
File port	Port for sending files to the machine
Network address	A unique address that cannot be changed. Mac addresses allow network administrators to allow or disallow the MTHP4 access to a network.

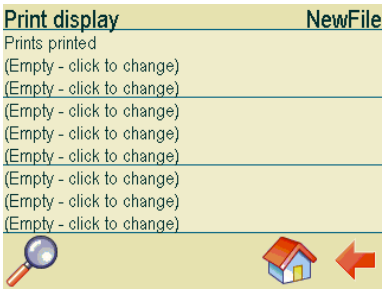
Display print data

In the system menu, select "print data".



This screen lists the data currently selected. You have 9 lines available which may all be empty or filled with a type of print data.

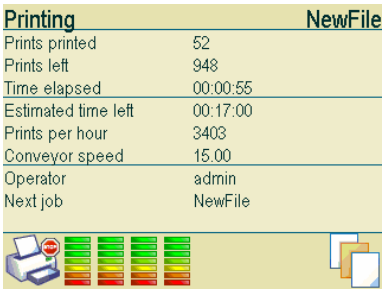
Press a line to toggle between print data or (Empty).



Select from the variables shown below.

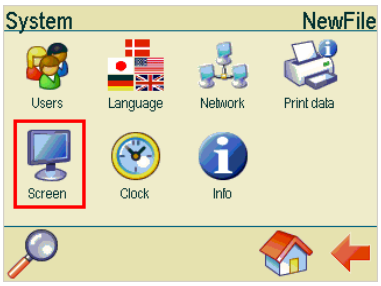
Variable	Explanation
Prints printed	Number of prints printed.
Job printed	Number of prints in current job
Prints left	Prints left in the current job. It will only display a value if a maximum job size has been set.
Time elapsed	The time in hour:minute you have been in print mode.
Estimated Time left	If a counter has "stop at maximum",or the job has a limited size, this is the time left before that number is reached - estimate based on previous number of prints pr hour.
Prints per hour	Your "Average Speed".
Conveyor Speed	Current Conveyor speed, in meter/minute.
Operator	The operator who is currently logged in.
Next Job	If a print job has been queued, this is the next job.

In print mode, the messages will be displayed like this.



Change screen settings

Select the "screen" in the system menu.

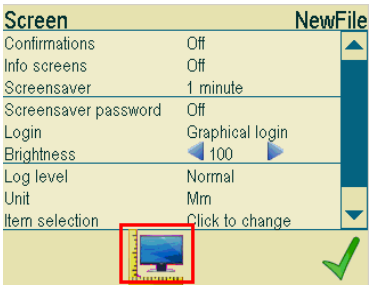


The screen menu has the following options.

Property	Description
Confirmations	If this option is selected, you will be asked to confirm, for instance if you delete a file.
Info Screens	This option will display info screens when a command has been carried out.
Screensaver	The time that elapses before the screen saver starts.
Screensaver Password	If screensaver password is set to on, the user must enter the password to regain access to the MTHP4
Login	Select graphical login (user accounts shown as icons), Text Login (enter username and password) or No Login. Notice that if No Login is selected, this forces “Simple Mode” operation.
Brightness	Select screen brightness. (0..100)
Log Level	What data is saved to the internal log file. Choose between none, minimum, normal or maximum log level. A detailed list is in the reference section
Unit	Measurement units. Choose between mm, inch or pixel.
Item Selection	"Click to change" will allow you to edit the parameters and activate menus immediately. "Click to select" will highlight the parameter and menu first. Select again to activate.
Prompt display	When entering print mode, prompts can be listed or shown one by one.

Calibration

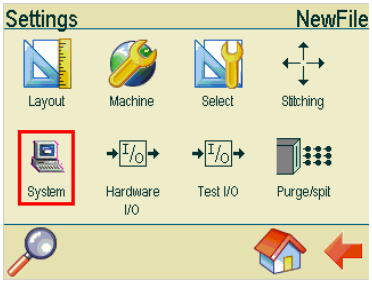
Since the MTHP4 has a touch screen, it is essential that the controller "knows" which icon you are pressing. With a screen calibration, you can make sure the touch function is accurate. To calibrate, press the calibration icon at the bottom of the screen. Press the blue squares. There are 5 in total.



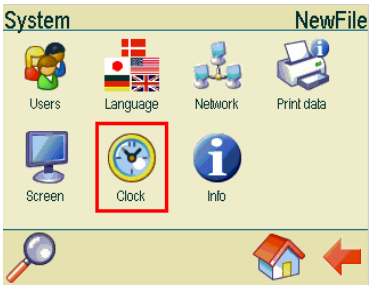
When you calibrate, you are presented with 5 blue dots. Press these with a stylus until they go black. If you don't touch the screen for some time, the calibration will fail with a timeout.

Set system clock

In the settings menu, select "system".



Select "Clock" in the system menu.



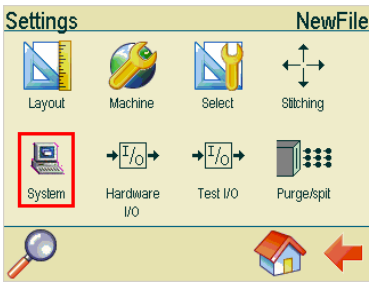
The available options are:

Property	Description
Current date	Current date. This is entered in your local format, which will depend on menu language chosen.
Current time	Current time in your area. (hh:mm:ss)
Use DST	If set to on, the controller compensate for Daylight Saving Time.
DST on	The date when Daylight Saving time starts.
DST off	The date when Daylight Saving time ends.

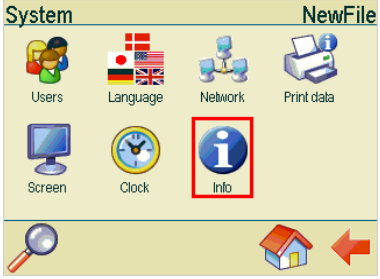
Objects with date/time content are synchronized with the system clock therefore it is important that the settings are correct.

Display system info

In the settings menu, select "system".



Select "info" in the system menu.



This menu does not allow you to set anything, but information such as software version could be useful if you should ever contact the manufacturer.


Information
NewFile
MiniTouch type
HP4 Basic
Software version
HSAJet MiniTouch v1.64
Build date
Aug 8 2011
FPGA version
5.2.07
System uptime (hours)
0
s/n: 9356-80200202

Use the USB feature

How to upload Layout and resources from USB

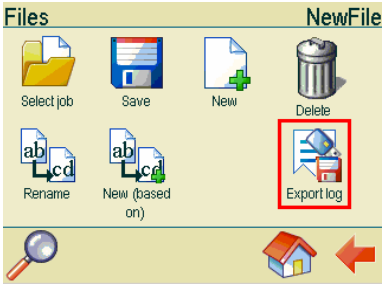
You can create a print job with the software MiniDraw and upload it to the MTHP4 from USB. To load print jobs from a USB key, please insert the key into the USB slot. The MTHP4 will search for available scripts in the root of the flash drive, and display them on the screen.

Click on the script to execute and confirm when prompted

For instructions on how to create print jobs and save them to USB, please refer to the MiniDraw Manual.

How to export log files to USB

Two log files are stored on the internal memory card. The content of the data log is stored in one logfile. Please refer to the section "How to setup Data log". In the second logfile system events are recorded. There are 3 different log levels. Please refer to the section "Screen settings". You will find a list of systems events in the reference section. The logfiles can be extracted and saved to a USB key. Insert a USB key in the USB slot on the MTHP4 . Select "Export log". This will start the extraction process.



The extraction process is completed when the "busy symbol" is gone.

The log files will be saved on the USB drive as

LOGFILE.LOG for system events

PRINTER.LOG for print data log

How to update firmware

To update from a USB key, please complete the following steps.

Obtain the update files from your supplier.

Copy all USB update files to the USB key.

Insert memory stick in MTHP4.

Wait for a list of files to display on the MTHP4.

Load firmupd.tsc script.

Wait for the system to reboot.

You can also update firmware from your pc. To update firmware from your pc, please setup an ethernet connection. The procedure is described in the reference section.

Next install the software MiniDraw and follow the instructions in the MiniDrawmanual.

Power Supply Unit

1. On/Off button

2. Power supply input.

3. Power supply output. Uses a 15-pin 1:1 SUB-D cable. Maximum length 5 m.

4. There is a light indicator for each fuse used on the system.

   5 v
   12 v
   HV

If the light goes out, the fuse is blown. They can be changed by the user. Unscrew the fuse holders to remove fuses.

Please only replace with the following fuses:

5V -> 250 v, 1 Amp, Slow blow

12V -> 250 v, 1 Amp, Slow blow

HV -> 250 v, 2 Amps, Slow blow

Reference Section

List of date formats

Variable	Explanation
y,yy,yyyy	Year (1, 2 or 4 digits)
m	Month number (no leading zero). January = 1
mm	Month number (leading zero). January = 01
mmm	Jan
mmmm	January
#w	Week number (no leading zero)
#W	Week number (leading zero). Week 01 is first week with a Thursday (ISO)
d	Day of month (no leading zero)
dd	Day of month (leading zero)
ddd	Short name for day (such as mon for Monday)
dddd	Full name for day (such as Monday)
#d	Number of weekday. First day of week is 1. Day chosen by Locale.
#j	Day of year (no leading zero). January 1 = 1
#J	Day of year (leading zero). January 1 = 001
h,hh	Hour (with and without leading zero)
n, nn	Minute (with or without leading zero)
s, ss	Second (with or without leading zero)

When using date codes mmm/ mmmm / ddd / dddd the name of the day / month is taken from the selected Locale. Each date object can use one Locale only, but separate date objects may use different Locales.

Weeknumbering is stored in your Locale setting. Most Locales follow the ISO-8601 standard, however US/UK Locales do NOT. Every 5-6 years week numbering will be different for the two Locales.

List of system events

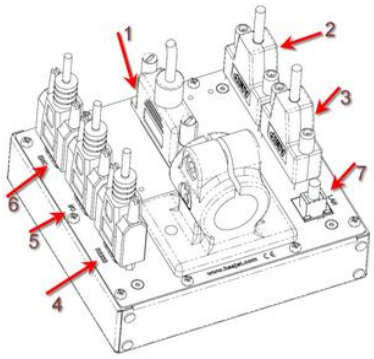
If loglevel has been set to minimum, the actions with minimum log level will be logged.

If loglevel has been set to normal, actions with minimum log level and normal log level will be logged.

If loglevel has been set to maximum, all actions will be logged.

Log level	Action	Log level	ACTION
Maximum	Entering prompts	Normal	Remote shutdown
Maximum	New value	Normal	Prompting
Maximum	Entered value	Normal	Stopping print
Maximum	Entering prompts for next job	Normal	Data edit (object)
Minimum	Logged on	Normal	Data edit (content)
Minimum	Failed login	Normal	Editing finished
Minimum	Shut down	Normal	Create object (wizard)
Minimum	Log out	Normal	Create object with content
Minimum	Remote log out	Normal	Edit object/content
Minimum	Starting print	Normal	Delete object/text
Minimum	New file	Normal	Edit shift content
Minimum	Load file	Normal	Delete shift content
Minimum	Load file to print queue	Normal	Change font
Minimum	Delete file	Normal	Change locale Date/time
Minimum	Load file template	Normal	Edit logo
Minimum	Renaming file	Normal	Save file
Minimum	New user added	Normal	Language changed
Minimum	User deleted	Normal	Calibration
Minimum	Edit user	Normal	Spit settings changed
Minimum	Screen settings changed	Normal	Printhead edit
Minimum	Switching job	Normal	Pen edit
Minimum	Data log file edit	Normal	Logs exported
Minimum	Pen auto switch on/off	Normal	Logs reset
Minimum	Firmware update initiated		
Minimum	FPGA update initiated		
Minimum	Logged on (remote)		
Minimum	Failed remote login		
Minimum	Log out(remote)		
Minimum	Load file (remote)		
Minimum	System reboot(remote)		

Overview of Connectors



Insert pen into the head and lock it

Necessary equipment		
1	Connect to print head, or to print head switch box	SUB-D 25 1:1
3	Connect controller to power supply	SUB-D 15 1:1
5	Connect start sensor to I/O. This connector is also used for input 1+2 and output 1+2	SUB-D 9 pin female
Optional equipment		
6	Encoder connector	SUB-D 9 pin female
7	Ethernet connection	RJ45 female socket
4	RS232 connector	SUB-D 9 pin male
2	Control connector, for additional input/output	SUB-D 15 pin male

For wiring diagrams on connectors, please refer to installation manual.

How to reset system

Conflicting system settings will sometimes cause the system to stall. This problem can be solved by resetting the controller.

Warning: The following procedure will reset all settings. Settings such as sensor and encoder settings must be reentered manually.

To reset the MTHP4 restart the unit and apply pressure with you finger in the bottom left corner of the screen approx 1 cm from the corner.

The screen will show a line of dots moving from N to Y.

To finish, remove your finger and press the screen once.

Data Exchange

Around 90-95% of the functions in MiniTouch can be controlled externally using RS232 or Ethernet. This includes changing parameters, loading files and changing content.

Please refer to document on "Remote Communication with MiniTouch"

Support

For product support, please contact HSA SYSTEMS Customer Service department

HSA SYSTEMS CUSTOMER SERVICE DEPARTMENT

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