



# Instruction Manual

## CAMSCAN 3 5203

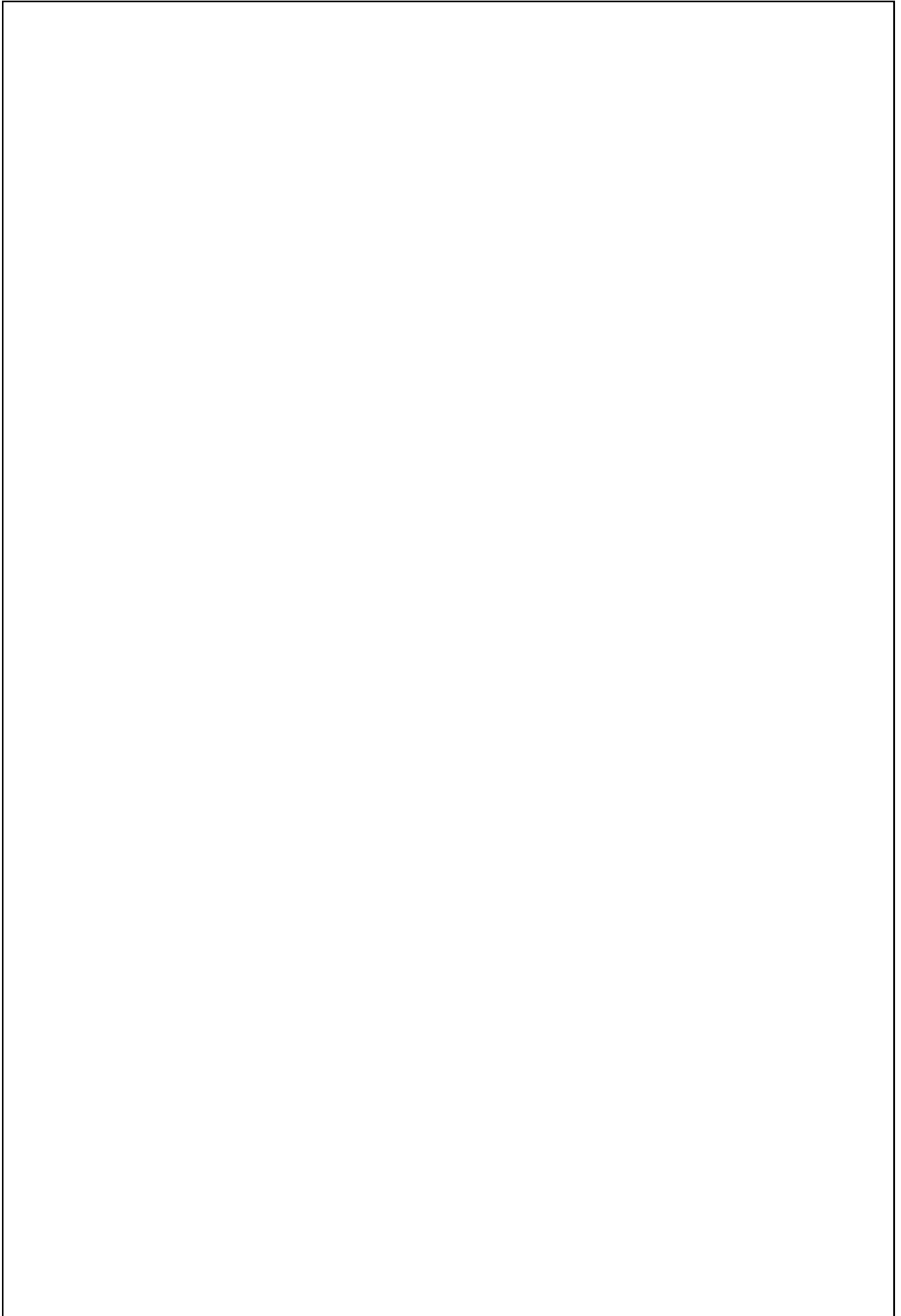
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## Table of contents

1	<b>Table of contents</b>	4
2	<b>Introduction</b>	6
2.1	General	6
2.2	Construction	6
2.3	Function	6
2.4	Features	7
2.5	Specifications	7
2.6	Service	8
2.7	Assembly Service	8
3	<b>Menu system</b>	9
3.1	Menu overview	9
4	<b>The screen layout</b>	10
4.1	Description of the key assignment	10
4.2	The alpha - numeric entry	11
4.3	The numeric entry	12
5	<b>Main screens</b>	13
5.1	Machine stopped	13
5.1.1	Screen for setting the thread count	14
5.2	Starting the machine	15
5.3	Machine in operation	15
5.4	Screen display after detecting a thread fault	16
6	<b>Operating modes AUTOMATIC and MANUAL</b>	17
6.1	Explanation of the term "sensitivity"	18
6.2	Explanation of "automatic mode"	19
6.3	Explanation of "manual mode"	20
7	<b>Test mode</b>	21
7.1	Test mode machine stopped	21
7.1.1	Level bar display during test mode	22
7.2	Test mode machine starting	22
7.3	Test mode machine in operation	23
8	<b>Login and Logout</b>	24
8.1	Operator login	24
8.2	List of operators	25
8.3	Creating and changing of a password	25

## Table of contents

9	<b>Menu</b>	26
9.1	Article menu when logged out (after logout)	26
9.2	Article menu when logged in (after login)	27
	Procedure for article construction	
9.2.1	Selecting the cameras	27
9.2.2	Selecting the measuring mode	27
9.2.3	Enter the thread count	28
9.2.4	Enter the exposure time	28
9.2.5	Setting "Recognised faults until stop"	28
9.2.6	Setting the sensitivity in the manual operating mode	28
9.2.7	Fault counter evaluation mode	28
9.2.8	Start delay	29
9.2.9	Measurement averaging	29
9.2.10	Type of standardisation	29
9.2.11	Selection of the illumination	29
9.2.12	Automatic offset for the measurements limit	29
9.2.13	Loading a saved article	30
9.2.14	Deleting an article	30
9.2.15	Saving an article	31
9.2.16	Saving an article under a new name	31
9.3	Procedure for article optimisation and control	32
9.4	Service	33
9.4.1	Setting of the camera's ranges	33
9.4.2	Changing the machine settings	34
9.4.2.1	Machine number	34
9.4.2.2	Automatic lamp activation	34
9.4.2.3	Stop distance warning	35
9.4.2.4	Automatic step size	36
9.4.2.5	Direct input of the camera's limits	36
9.4.2.6	Turning the counting direction of the cameras	36
9.4.2.7	Reversed displaying of the camera signals	38
9.4.3	Checking the network settings	38
9.5	User language setting	38
9.6	Expert mode	38
9.7	Factory reset	39
10	<b>System information</b>	40
10.1	Camera signal (CAMERA)	40
10.2	System Values (VALUES)	40
10.3	General internal information (INFO)	41
10.4	Article informationen (ARTICLE)	41
	<b>EC-Conformity Declaration</b>	42

## **2 Introduction**

### **PROTECHNA Digital Thread Counter CAMSCAN 5203**

#### **2.1 General**

A fast and reliable detection of defects in the yarn sheet, when thread breaks or an incorrect thread count are detected, helps to avoid losses (nominal/actual comparison). CAMSCAN 5203 monitors the warp sheet on beaming, warping, sizing, draw warping and similar machines.

#### **2.2 Construction**

CAMSCAN 5203 is a modular designed camera system with working widths from 21" to 85". Wider working widths are available on request.

#### **2.3 Function**

The cameras are mounted above the warp sheet, which is illuminated by LED lamps. In this way, each thread is checked individually. The resulting light pulses are received by the cameras and transferred to a computer for evaluation. Basically, a nominal/actual comparison between the preset and actual number of threads is carried out.

When CAMSCAN 5203 detects a lower thread count as expected, each thread is individually checked for presence and the machine is stopped after reaching an adjustable multiple evaluation value. When CAMSCAN 5203 detects a higher thread count as expected, the machine is also stopped after reaching the adjustable multiple evaluation value. This adjustable multiple evaluation value acts as an additional safety measure against false stops of the machine.

CAMSCAN 5203 displays the position of the missing thread if possible. When several threads are missing, the first detected missing thread position is displayed. The position of the fault will be shown on the screen of the control unit and on the external matrix display 8027 (optional). In addition, an optical fault signal is given by a signal lamp which is connected to the control unit.

All necessary settings are made with a robust membrane keypad directly at the control unit and are supported by intuitive user prompts on the screen. These settings and operational parameters (computer messages) are shown on the control unit's screen. The fault output is carried out via a relay contact and a semi conductor output.

## 2.4 Features

- Detection and counting of each thread in a yarn sheet
- Fast and reliable detection of defects in the yarn sheet
- Position display of the missing thread
- Adjustable multiple evaluation value to reduce false stops of the machine
- Display of the thread count to check of the counting function of each camera
- Display possibility for the reception level of each camera
- Easy parameter setting at the monitor with multi-function keys and menu system
- Possibility to create article-related records to avoid parameter entries
- Connection possibility for a large external LED multi-function display 8027 (optional)
- Ethernet interface for fast data transmission of operating parameters and evaluation data
- Detection of large obstacles in the yarn sheet (hand recognition)
- Prepared for a transmitted-light illumination unit
- Login and logout feature to prevent unauthorized parameter entries

## 2.5 Specifications

- **Working widths**  
up to 85"
- **Light source** (dependent on material)  
LED spot lights, fluorescent tube or infrared transmitted light
- **Reaction time**  
average 50 ms (dependent on material)
- **Gap between zones**  
> 5 mm
- **Gauge**  
E46 respectively 18 threads/cm
- **Power supply**  
115 V AC / 230 V AC  
50 Hz / 60 Hz
- **Power consumption**  
100 VA - 200 VA (dependent on lighting)
- **Outputs**  
Potential-free relay contact, semiconductor output

## **2.6 Service**

Service technicians are available for periodic maintenance and also for special requirements. However, very often small problems can be solved by a telephone call, a fax or an e-mail without the need of a visit by a service technician.

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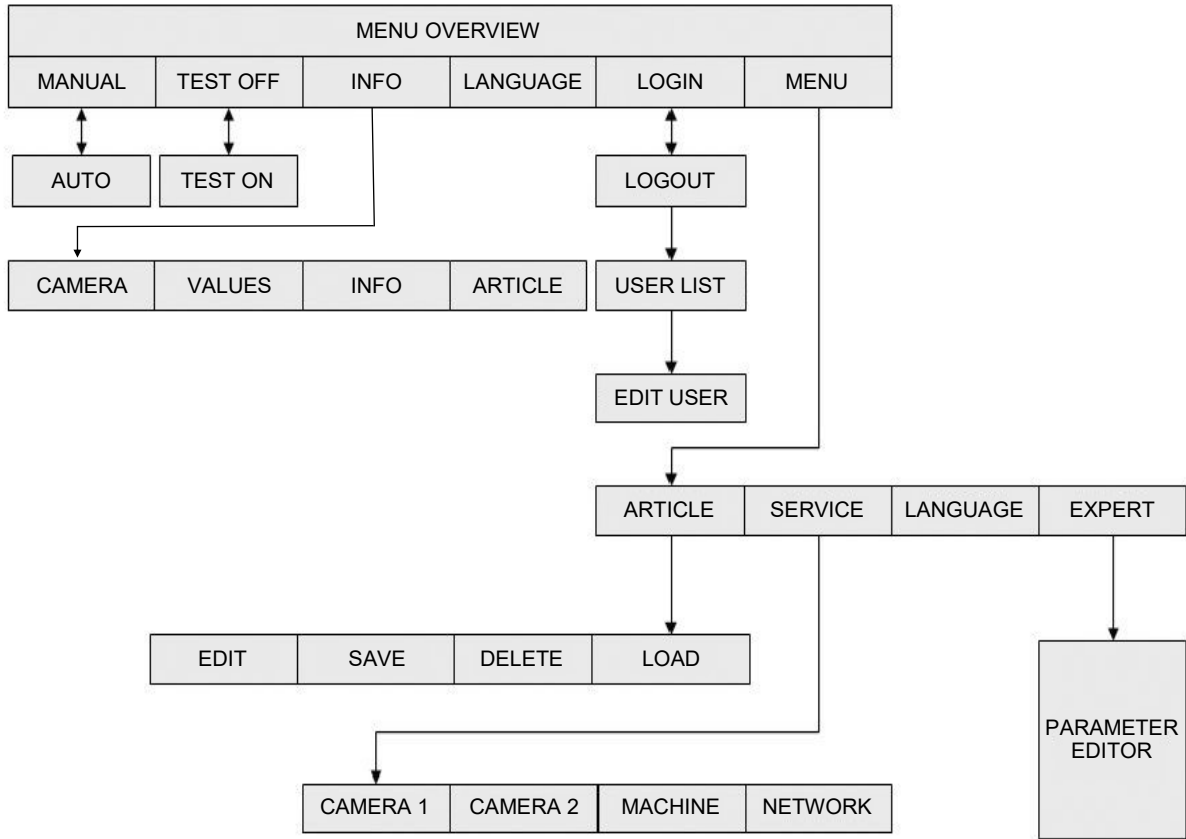
## **2.7 Assembly service**

We strongly recommend that at least the first installation of PROTECHNA devices should be carried out by one of our service technicians. This will ensure that the customer will benefit from a precise assembly and setting of the device as well as instruction on the correct method of use. This assembly service is available at minimal cost and normally available everywhere. Overseas customers should make contact with the relevant PROTECHNA agent in order to get details of service and assembly information.



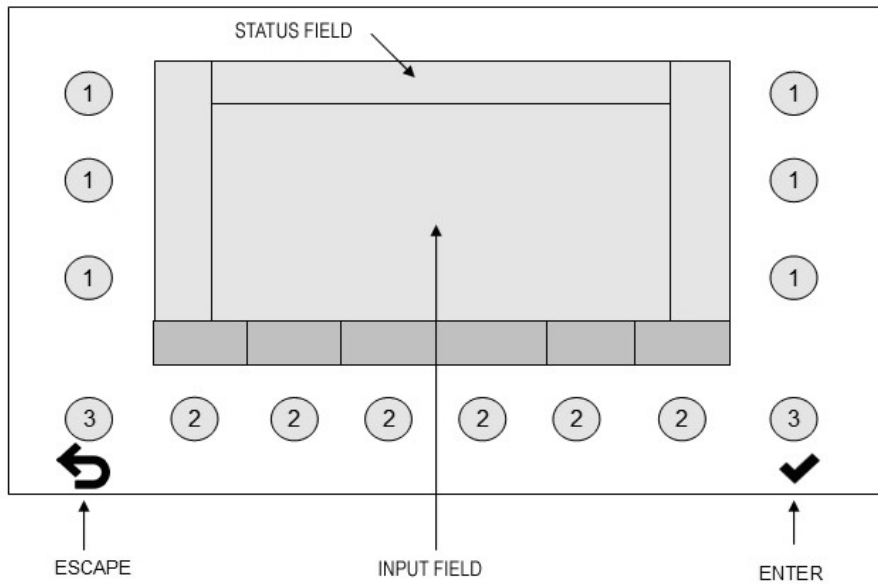
### 3 Menu System

#### 3.1 Menu overview



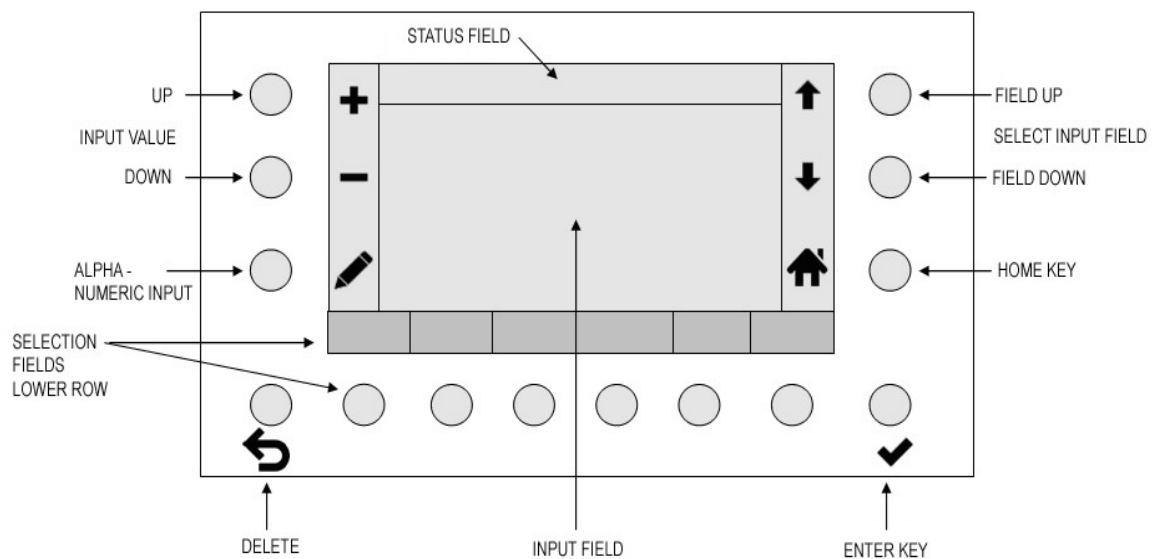
## 4 The screen layout

### 4.1 Description of the key assignment



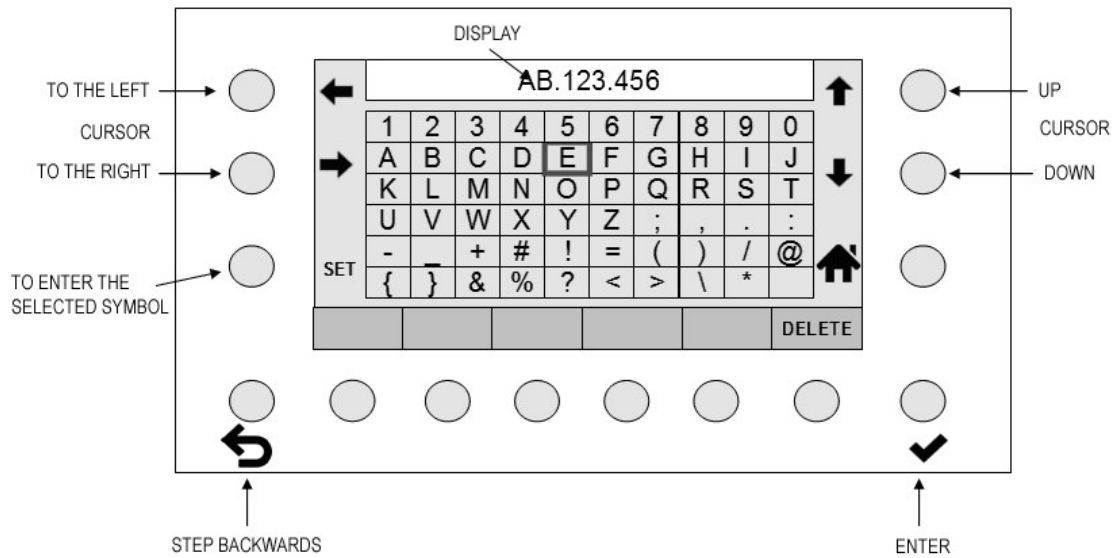
- The display on the screen is associated with the keys 1 and 2 respectively. The meaning of the keys changes with the screen function.
- The keys 3 have a fixed assignment.
- The variable and fixed parameters are displayed in the input field.
- The status field displays the menu state, the article name and the measuring method.





Example: Assignment for the keys 1 and 2:



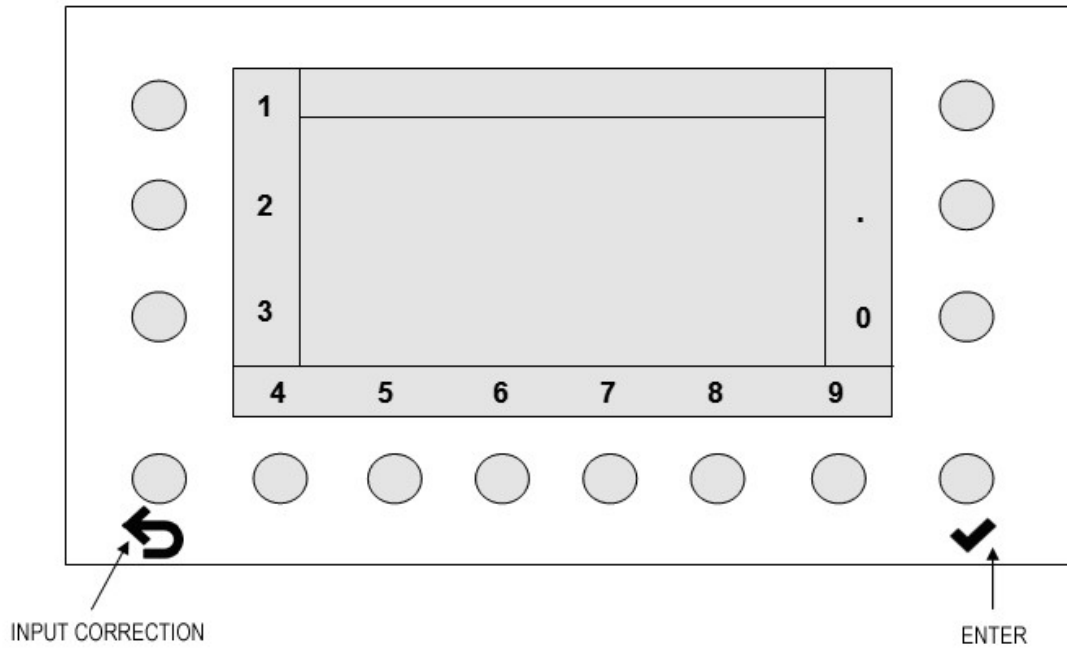
## 4.2 The alpha - numeric entry



Screen for the alpha - numeric entry



- The displayed name is deleted partially or completely with the DELETE key.
- Please use the arrow keys (cursor) to select a character on the screen matrix.
- Pressing the SET key, this selection is added to the new name.
- Pressing ESC  deletes the last entry on the left.
- When pressing ENTER  the entered characters are applied. An input which is not saved by using ENTER  gets lost.
- By pressing HOME  you return to the previous screen.

### 4.3 The numeric entry

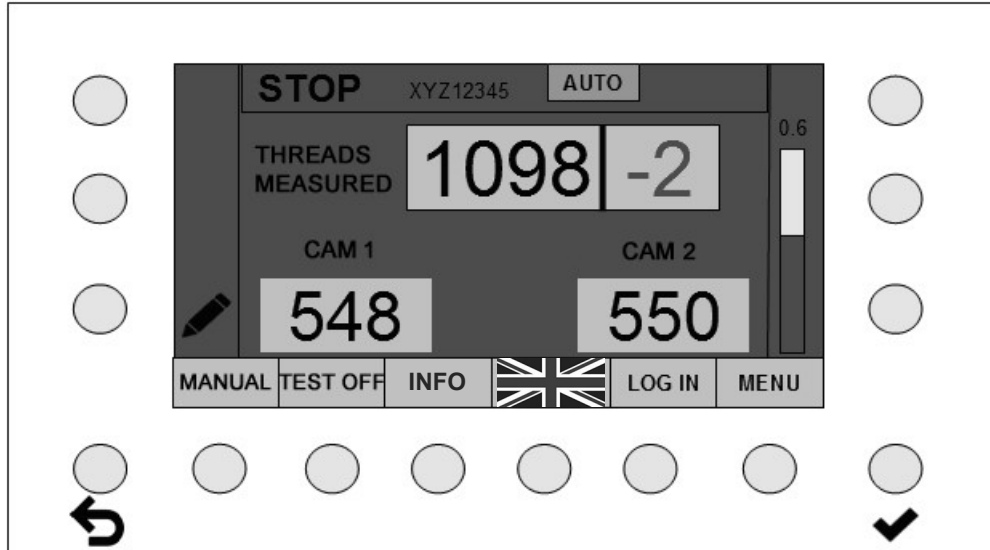


- With the input correction key  the numbers are deleted from right to left. If this key is pressed for as long until no numbers are visible any more in the entry field, pressing it once more will show the old sequence of digits again.
- By pressing the ENTER key  the new sequence of digits is accepted. The display will return to the last screen.

## 5 Main screens

### 5.1 Machine stopped

This screen is displayed when the machine was stopped by the operator.



The current total thread count and the thread count of the active cameras are displayed. The display for an inactive camera is suppressed.

#### Key functions

- **MANUAL - AUTOMATIC** switches between the manual and automatic operation. The automatic operating mode is recommended.  
see chapter: Operating modes Automatic and Manual

#### ATTENTION:

After finding the optimal setting in an operating mode, save the parameters and retain the operating mode. Changing the operating mode results in variations in the system behaviour.

- **TEST ON - TEST OFF** switches between the test mode operation and back.  
see chapter: Test mode  
**Attention:** In test mode operation, stopping the machine is not possible.
- **INFO** displays the current state of the parameters.
- The **LANGUAGE** setting can be selected directly.  
see chapter: User language setting
- By using **LOGIN (LOGOUT)** an operator can login and logout.  
see chapter: Login and Logout
- By using the **MENU** key, advanced settings and loading of articles are possible. To enter the menu you must first login.  
see chapter: Menu

The response time of CAMSCAN 5203 is shown on the right as bar graph. Relevant parameters are the scan time at a predetermined warping speed and the distance between the measuring position and the warping machine.


Bar graph colour:

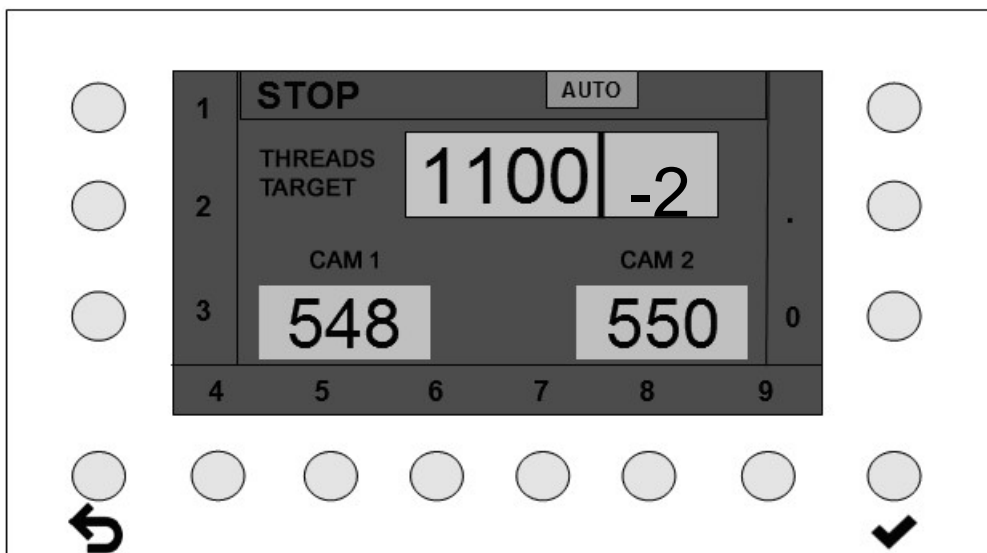
0 to 0.5	colour GREEN	OK
0.51 to 0.75	colour YELLOW	WARNING! Stopping distance may be too short.
as of 0.76	colour RED	STOPPING DISTANCE IS TOO SHORT




see chapter: Stop distance warning

**ATTENTION:** The stopping distance of the machine itself must still be added.

### 5.1.1 Screen when setting the thread count

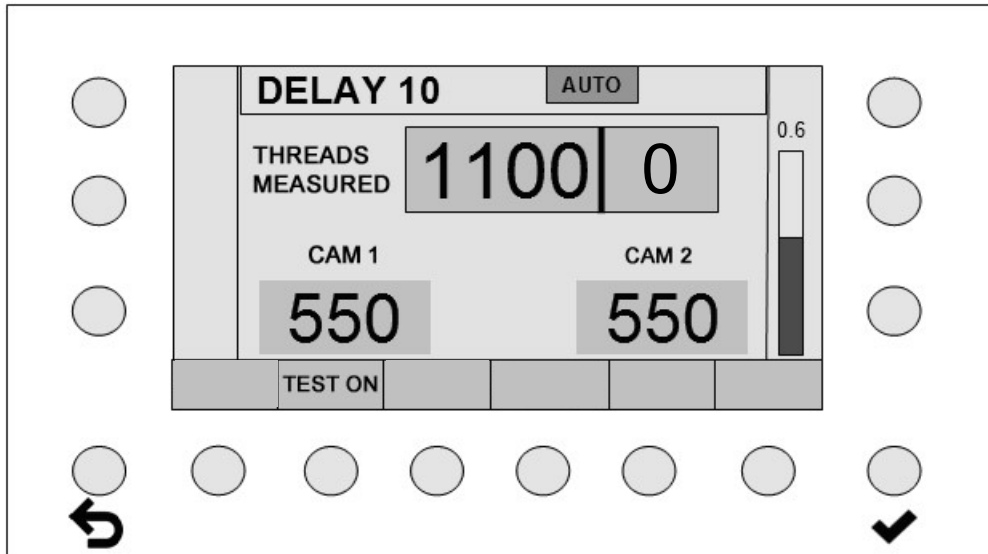
The direct entry of the total thread count is possible by pressing the PENCIL key . The thread count can only be entered when the machine is stopped or when the control unit is switched into test mode operation.



- The new thread count can now be entered.
- With the ESC  key the numbers are deleted from right to left. When the ESC  key is repeatedly pressed until all numbers are deleted, pressing it once more will show the old thread count again.
- When pressing the ENTER  key the new thread count is set. The display will return to the "Machine stopped" screen.

**5.2 Starting the machine**

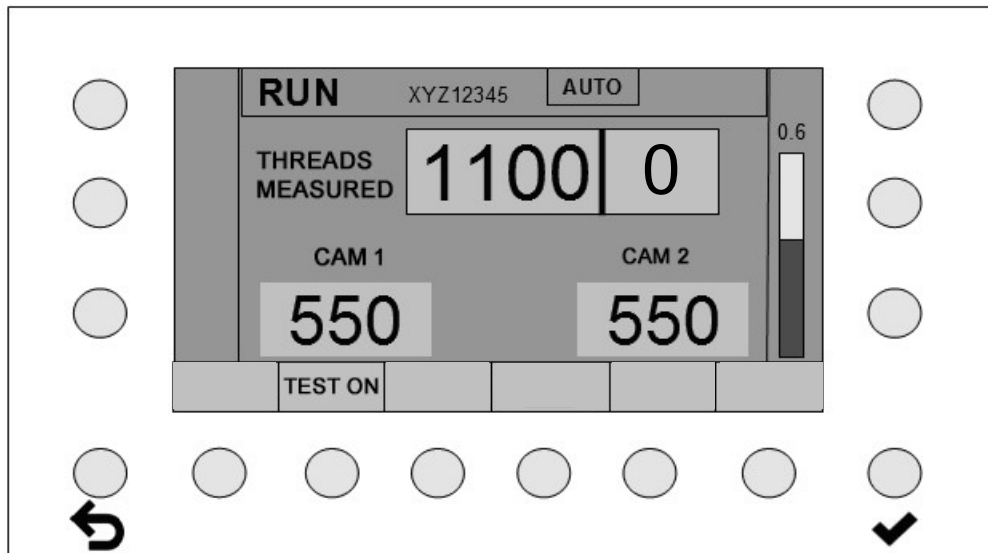
**Screen during the start-up phase of the machine**



When the machine is started an adjustable delay time begins to expire (DELAY). The screen is displayed in yellow.

**5.3 Machine in operation**

**Screen during active monitoring mode**

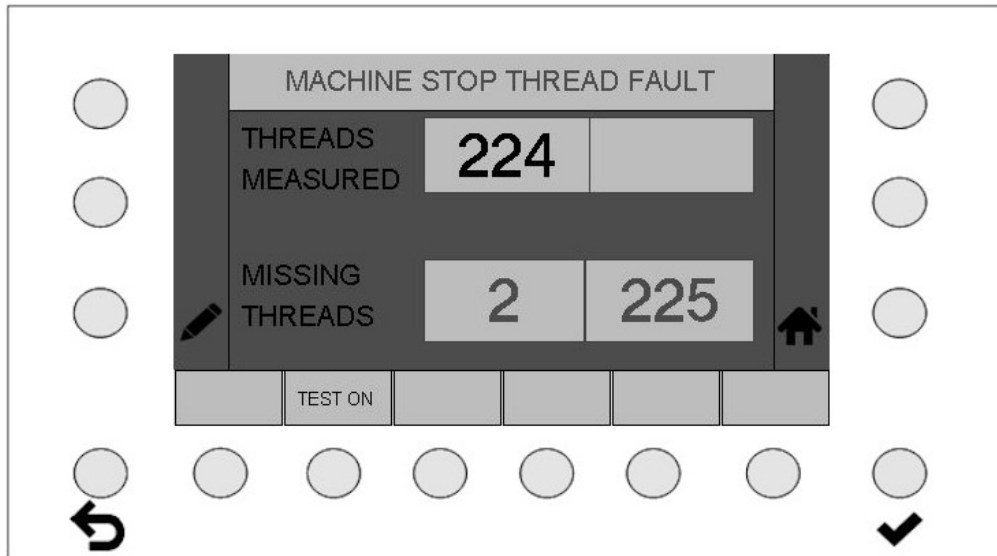


CAMSCAN 5203 is operating in active monitoring mode. The machine will be stopped immediately upon detection of a thread fault.

Inputs to modify the parameters are not possible during active monitoring mode. Inputs are only possible after switching the control unit into test mode operation.

see chapter: Test mode

5.4 Screen display after detecting a thread fault



The machine was stopped after a thread fault was detected.

The second row displays the camera number in the left-hand field and the number of the missing yarn in the right-hand field.

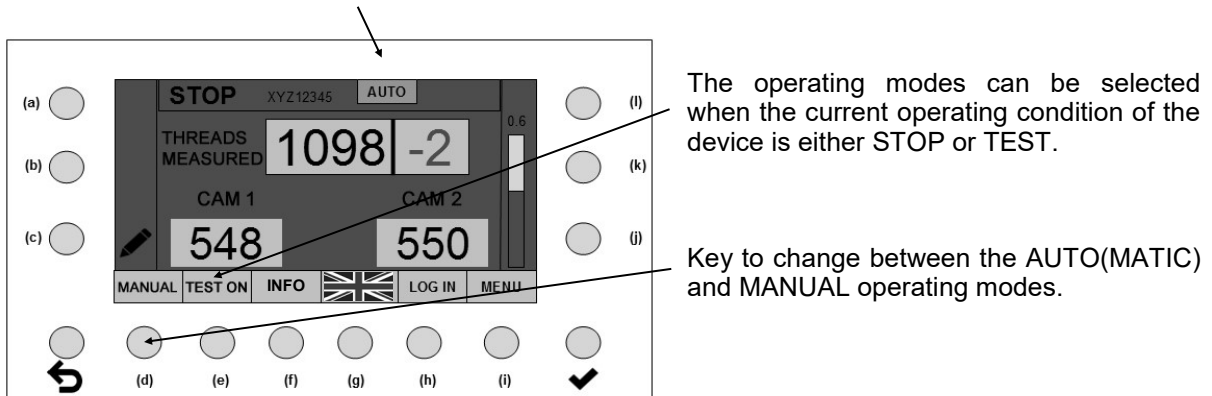
It is not always possible to determine the number of the missing yarn correctly and this thus only serves as an indication.

When pressing the HOME  key the display will return to the "Machine stopped" screen.



## 6 Operating modes Automatic und Manual

Display of the AUTOMATIC operating mode in the status field



### AUTO(MATIC):

In this operating mode the sensitivity is automatically set (preferred operating mode).

Parameter:

AUTO OFFSET

Automatic offset for the measurements limit

AUTOMATIC MEASURING STEP

Automatic step size

### MANUAL:

The sensitivity is entered by the operator.

Parameter:

SENSITIVITY (%)

Setting the sensitivity in the manual operating mode

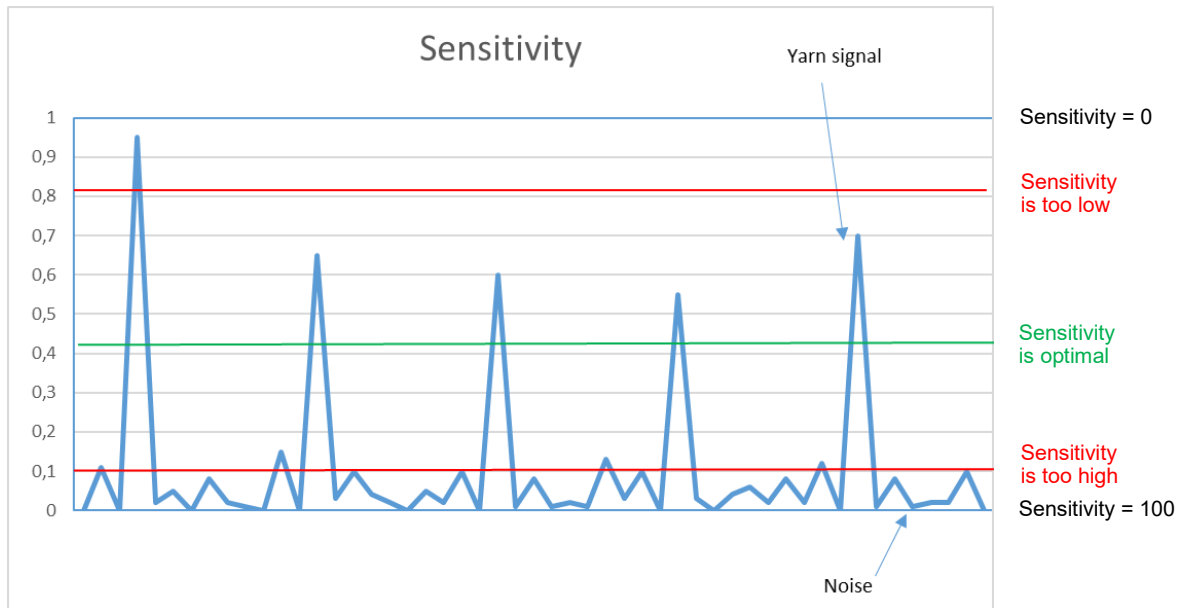
### ATTENTION:

Switching the operating modes alters the behaviour of the error evaluation. In automatic mode, the sensitivity is determined via "auto offset"; in manual mode, the sensitivity is specified in absolute terms. These values are usually different and are not synchronised.

Standardly, the settings should be performed in automatic mode, optimised and then saved. If this does not bring success, the optimal settings should be determined in manual mode and then saved.

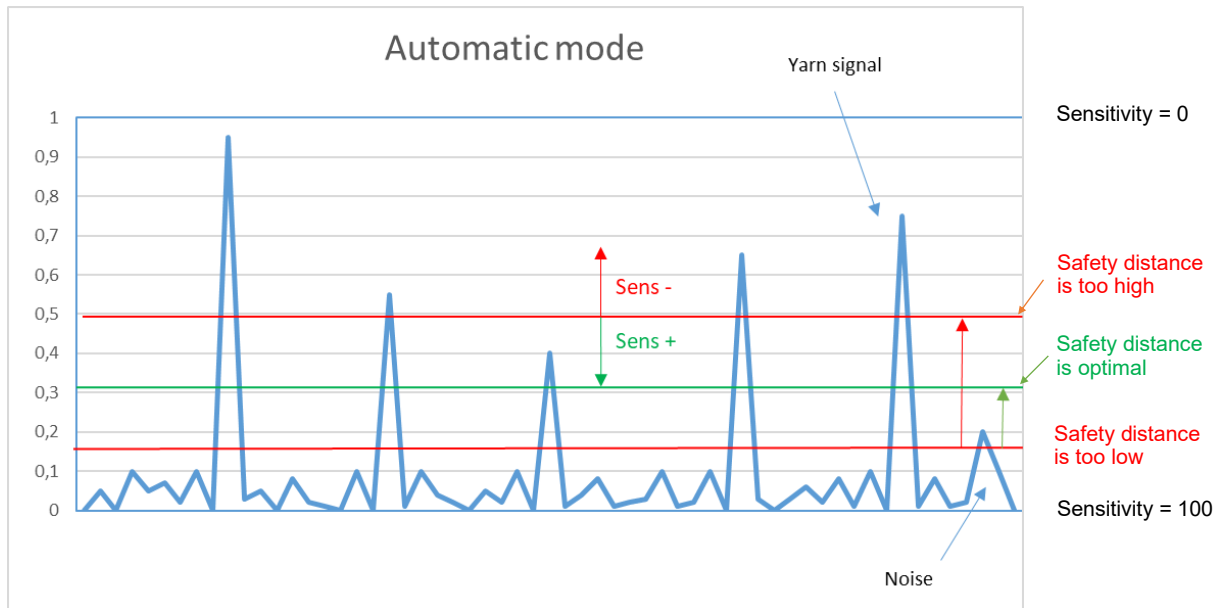
The operating mode should not be changed after the optimal settings have been determined!

## 6.1 Explanation of the term “sensitivity”



- The sensitivity is a threshold which is inserted in the camera signal.
- Signal peaks that break through the threshold are counted as yarns.
- A sensitivity of 100 means that the threshold lies entirely below in the signal aspect.
- A sensitivity of 0 means that the threshold lies entirely above.
- The threshold ideally lies a little above the signal noise so that all yarn signal peaks are counted.
- If the threshold is too low (sensitivity too high) the noise signal will cause miscounts.
- If the threshold is too high (insufficient sensitivity) it is possible that not all yarns will be counted.
- The sensitivity threshold is not visible in the signal aspect. It is optimal if the total yarn number is displayed constantly and correctly.

## 6.2 Explanation of “automatic mode”



**In automatic mode** the system attempts to determine the deactivation threshold automatically. The system begins with a sensitivity of 100 and continues to reduce the sensitivity (it adjusts the threshold in the signal upwards) until a stable yarn number has been reached. Then the threshold should lie exactly above the noise and count all yarns optimally. As the noise signal is not static, but rather changes dynamically, the threshold will be raised by the “automatic distance” to ensure certainty. This effects a safety distance to the signal noise. Changing the “automatic distance” parameter can increase or reduce this safety distance.

Pressing the + / - sensitivity buttons in **test mode** (see 7.2) changes the safety distance (“automatic distance” parameter). This requires that the machine is in production.

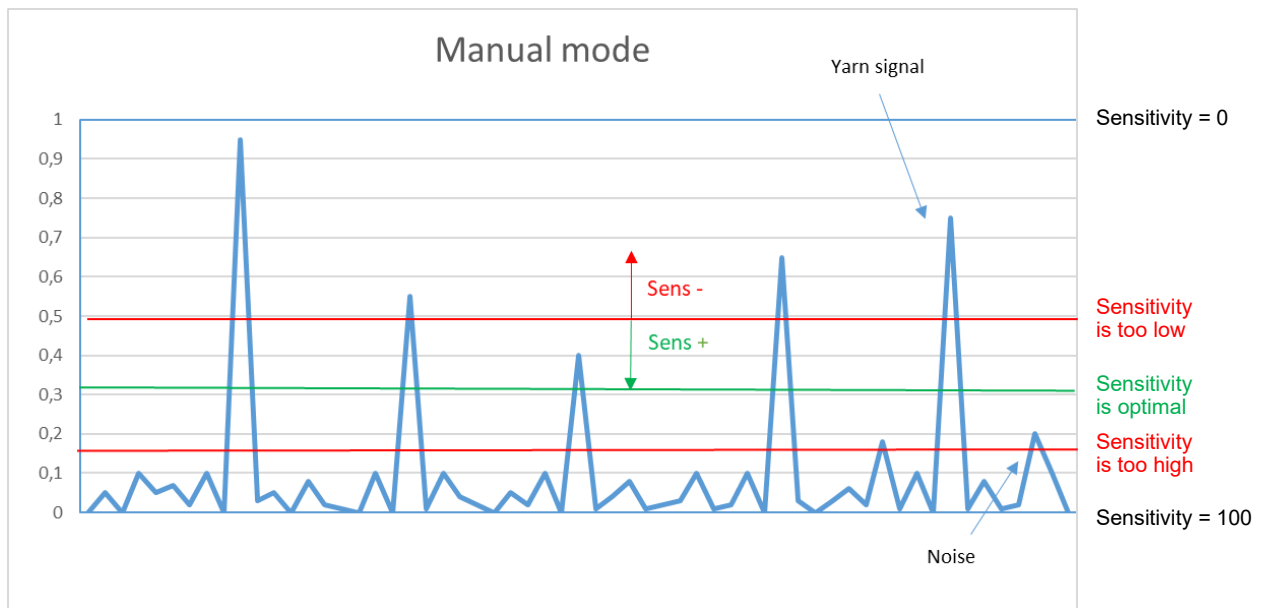
- **High sensitivity – low safety distance**
- **Low sensitivity – high safety distance**

This parameter can also be changed or controlled in the article menu (see 9.2.12).

- The sensitivity threshold is not visible in the signal aspect. It is optimal if the total yarn number is displayed constantly and correctly.

**ATTENTION: The operating mode should not be changed after finding the optimal settings!**

### 6.3 Explanation of “manual mode”



In **manual mode** the position of the deactivation threshold is determined directly by the sensitivity value set.

- With a sensitivity of 100 the threshold is located right at the bottom
- With a sensitivity of 0 the threshold is located right at the top
- The “automatic distance” parameter is ignored

Pressing the + / - sensitivity buttons in **test mode (see 7.1)** changes the sensitivity and thus the deactivation threshold incrementally. This requires that the machine is in production.

This parameter can also be changed or controlled in the article menu (see 9.2. 6).

- The sensitivity threshold is not visible in the signal aspect. It is optimal if the total yarn number is displayed constantly and correctly.

**Recommendation:** Manual mode should only be used if automatic mode does not provide a calm and/or correct yarn number after the scan time and sensitivity have been optimised.

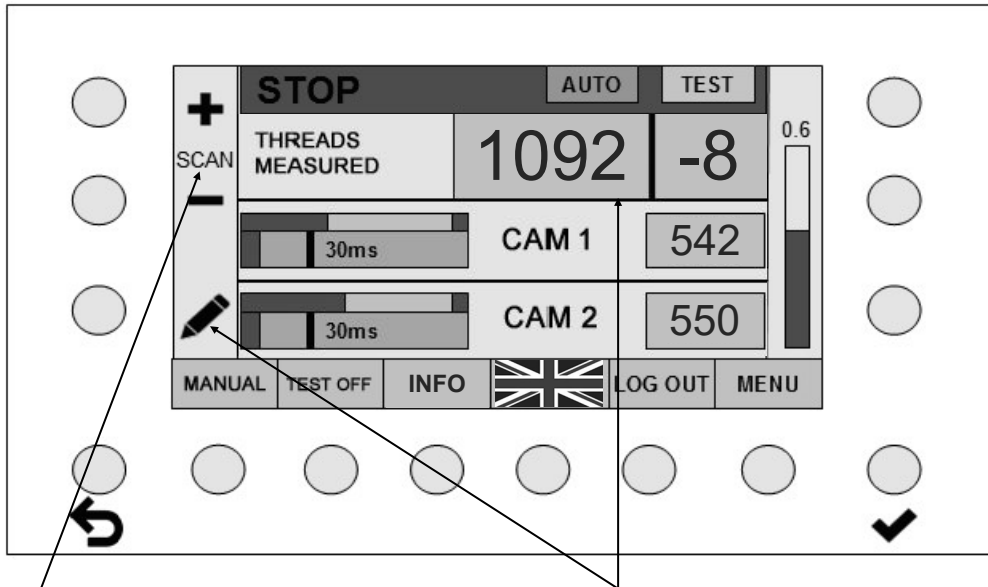
This can prove successful with yarns with highly turbulent running (or yarns which run together) or difficult yarns. The combination of dark yarns and the use of standard top-lighting in particular can mean insufficient reflection to the camera. In this case, the lighting must be optimised by the use of infrared transmitted light.

**ATTENTION:** The operating mode should not be changed after finding the optimal settings!

## 7 Test mode

**ATTENTION:** During test mode, the machine is not stopped in case of a thread fault!

### 7.1 Test mode machine stopped



To increase or decrease the scan time in increments of 5 ms

Setting the thread count

The scan time displayed is always the product value from the “measurement time” and the “error until stop” parameters. Altering the scan time in test mode changes the measurement time in the article menu in an increment of 5 ms. The “error until stop” parameter remains unchanged.

In "Test mode machine stopped" all operating options are available like in the normal operating mode. Their execution is immediate.

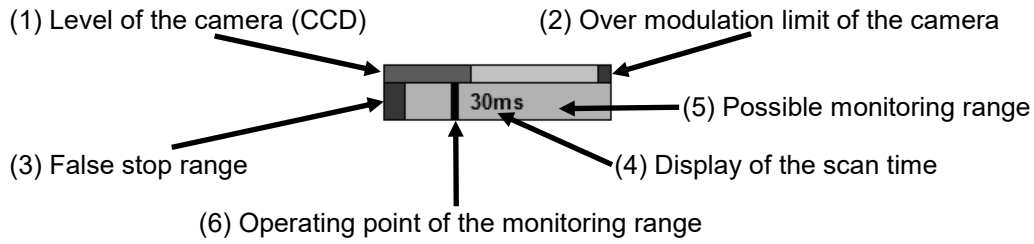
#### Keys functions:

- **MANUAL - AUTOMATIC** changes between the manual and the automatic operating mode. The recommended operating mode is AUTOMATIC.  
see chapter: Operating modes AUTOMATIC and MANUAL

**ATTENTION: The operating mode should not be changed after finding the optimal settings!**

- **TEST ON - TEST OFF** switches the test mode on and off.  
see chapter: Test mode
- **INFO** displays the current state of the set parameters.
- The **LANGUAGE** setting can be selected directly.  
see chapter: User language setting
- By means of the **LOGIN (LOGOUT)** key, a user can either log-in or log-out.  
see chapter: Login and Logout
- By means of the **MENU** key advanced settings as well as loading of articles are possible. To enter this menu you have to log-in first.  
see chapter: Menu

### 7.1.1 Level bar display during test mode

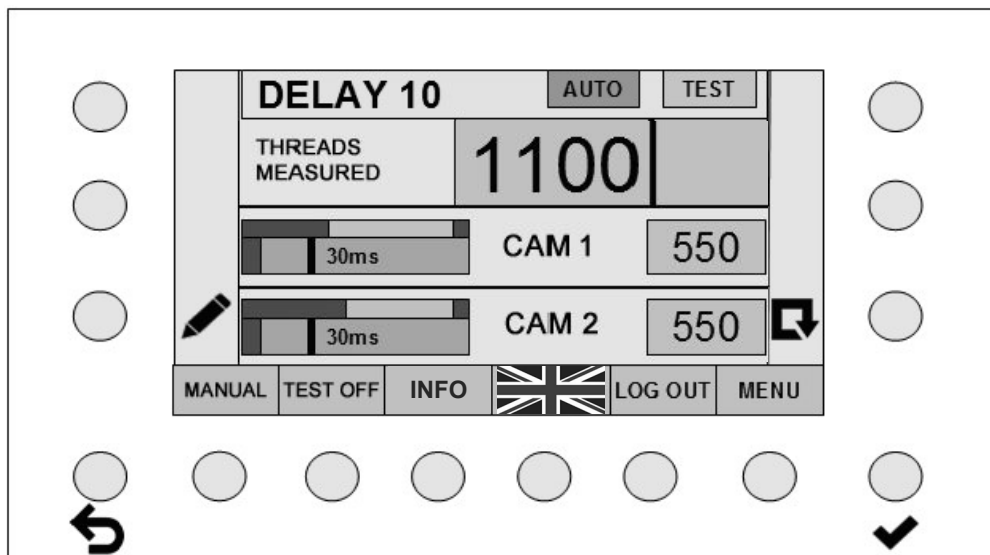


The bar graph is used in test mode for the visual control of the used settings.

The level of the camera (1) must never reach the over modulation limit (2).

The operating point (6) should be about 0.3 to 0.5 bar lengths away from the false stop range (3).  
 The operating point (6) should never be close to the right end of the possible monitoring range (5).

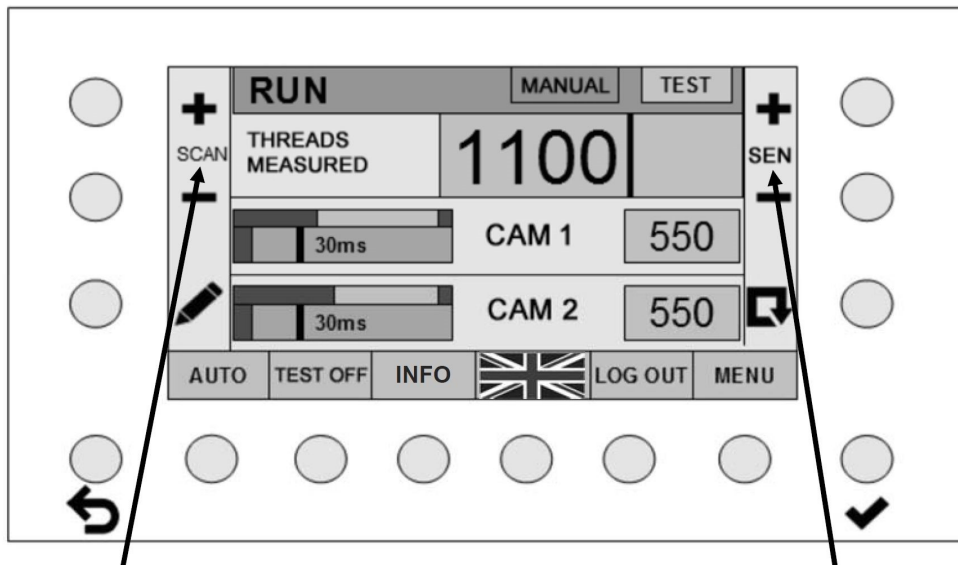
### 7.2 Test mode machine starting



Delay time (DELAY) when the machine starts.


### 7.3 Test mode machine in operation

**ATTENTION:** During test mode, the machine is not stopped in case of a thread fault!



Scan time + / - in 5 ms steps

Direct setting + / - of the measuring sensitivity

The same operating options are available in “Test mode and machine runs” as in “Test mode machine stopped” (see 7.1), **but activating the + / - sensitivity buttons enables you to change the sensitivity and thus the deactivation threshold incrementally.** Finally, pressing the function button  initialises the measuring cycle with the altered parameters which otherwise is only performed when reactivating the machine.

The setting is successful upon correct and stable display of the yarn number.

Please note the differences between the operating modes: Switching between them results in different error evaluations.

#### **Automatic mode (= standard setting):**

In test mode, changing the sensitivity only results in changing the safety distance (“automatic distance” parameter).

- High sensitivity – low safety distance
- Low sensitivity – high safety distance

#### **Manual mode**

**(only to be used if automatic mode does not produce satisfactory results):**

Changing the sensitivity in test mode will directly influence the sensitivity and thus the position of the threshold.

These operating modes are subject to detailed explanation in chapter 6.

**ATTENTION: The operating mode should not be changed after finding the optimal settings.**

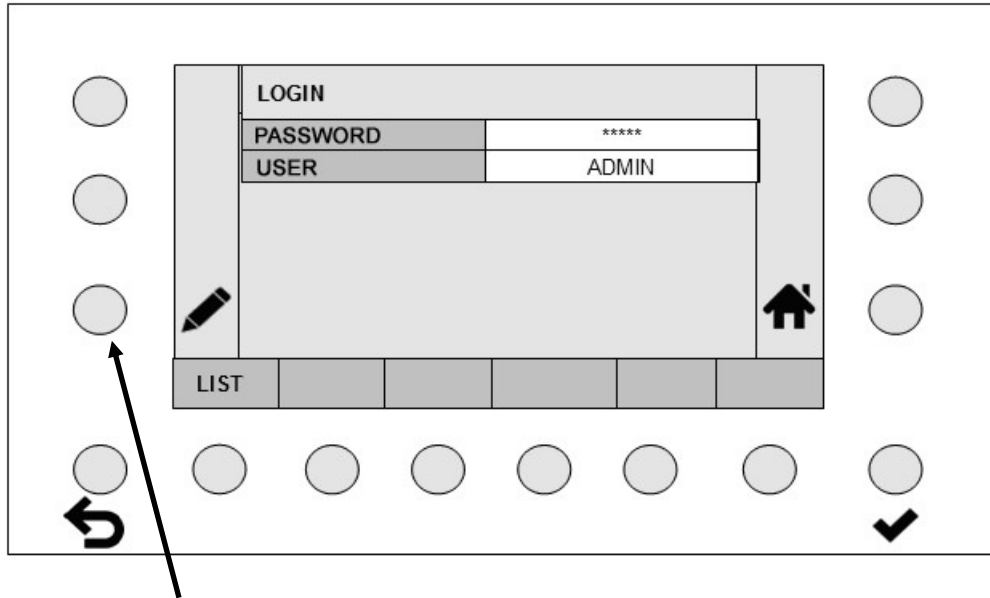
#### **About parameter averaging: Standard value 1 should not be changed**

This value should only be changed if nothing else helps. Extends the scan time considerably and thereby delays the machine stop. With an averaging number > 1 the total measurement (exposure time + error counter) will be repeated number multiple times in accordance with the averaging number, which results in deactivation times of multiple seconds.



## 8 Login and Logout

### 8.1 Operator login

By pressing the login button the input screen is displayed.



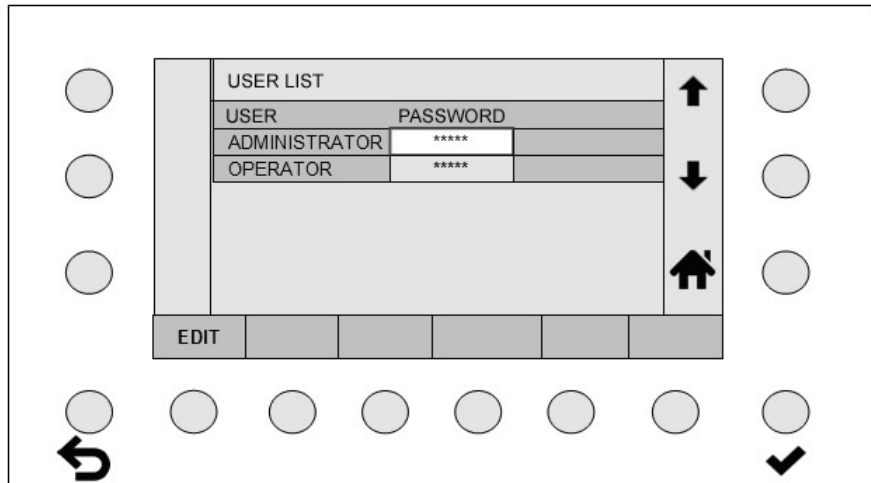
Key to enter the 5-digit password

- When the entered password corresponds to an existing password, the user name will appear in the 2nd field. The user is logged-in after the entered password was confirmed with the ENTER  key.
- When entering an incorrect password "Wrong Password" will be displayed.
- With the "LIST" key a collection of the available users is displayed.
- When pressing the HOME  key the display will return to the previous screen.



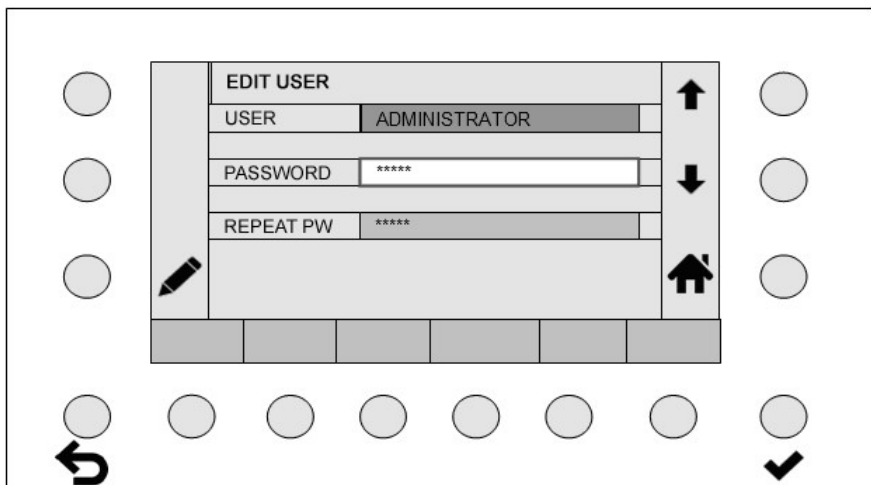
## 8.2 List of operators



This screen shows a listing of the possible operators. The asterisks indicate a valid password.



- By using the **EDIT** key, the selected password can be changed or a new password can be created.

## 8.3 Creating and changing of a password



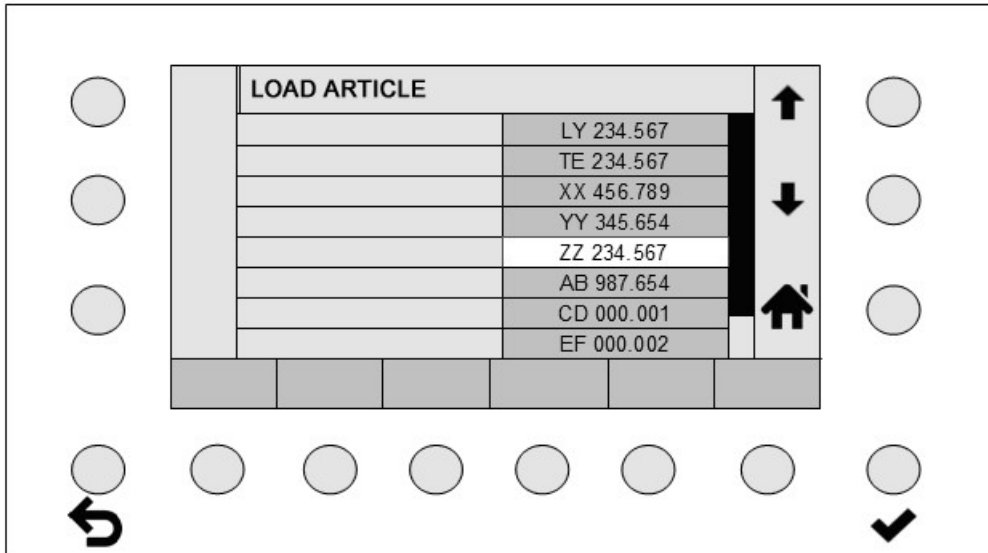
- A new password is created by entering a 5-digit number code in the "Password" field and its repetition in the "Repeat Password" field.
- The new password is activated with the ENTER  key.
- When pressing the HOME  key the display will return to the previous screen.





## 9 Menu

When pressing the menu key, the article menu is entered directly.

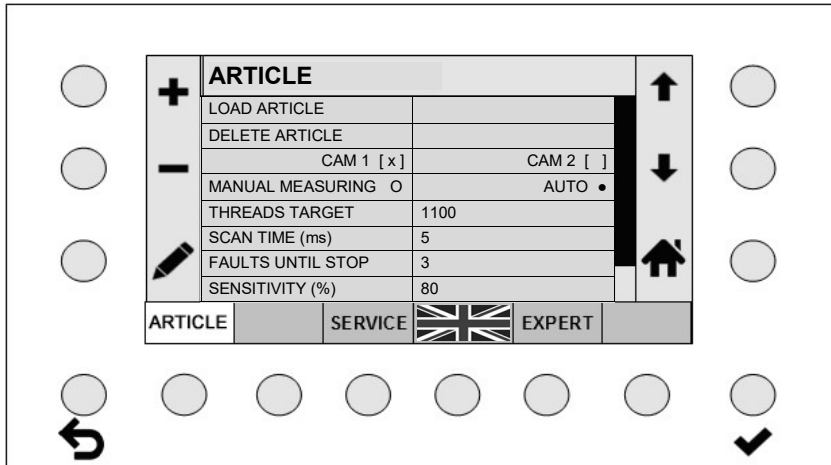
### 9.1 Article menu when logged out (after logout)

When no user is logged in, it is only possible to load already saved articles. Other entries are not possible.





- Please use the keys  and  to select the required article.
- Please press the key ENTER  to confirm your selection.
- When pressing the HOME  key the display will return to the previous screen.

**9.2 Article menu when logged in (after login)  
Procedure for article construction**

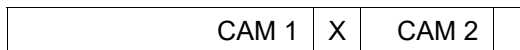






MULTIPLE THREADS	<input type="radio"/>	SINGLE THREADS	<input checked="" type="radio"/>
DELAY TIME (sec)			5
AVERAGES			1
NORMALIZE MODE			1
FRONT LIGHT	<input checked="" type="radio"/>	BACK LIGHT	<input type="radio"/>
AUTO OFFSET DETECT			20
SAVE ARTICLE			
SAVE ARTICLE AS			

**General:**

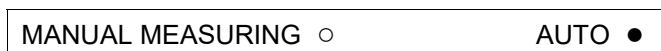
- Please press ENTER  to confirm the new setting.
- ESC  enables digits to be deleted after their entry.





**9.2.1 Selecting the cameras**



- With the keys  and  both cameras can be switched on or off independently.
- The symbol  in the selection field indicates an active camera.
- Please press ENTER  to activate the selection.




**9.2.2 Selecting the measuring mode**



- Please press the keys  and  to switch between the measuring modes.
- The symbol  indicates the active measuring mode.
- Please press ENTER  to activate the selection.

### 9.2.3 Enter the thread count





THREADS TARGET	1100
----------------	------

- Please press the pencil  key to activate the numeric input for the total thread count.
- When pressing ESC  the last digit on the left is deleted.
- Please press ENTER  to confirm the new thread count.

### 9.2.4 Enter the scan time

SCAN TIME (ms)	5
----------------	---





The max. scan time is 1 second

- Please press the keys  and  or  to change the setting for the scan time.
- Please press ENTER  to confirm the setting for the scan time.

### 9.2.5 Setting "Recognised faults until stop"

FAULTS UNTIL STOP	3
-------------------	---

The max. possible setting for is 100





- Please press the keys  and  or  to change the setting for the max. recognised faults until stop.
- Please press ENTER  to confirm the setting for the fault counter.

### 9.2.6 Setting the sensitivity in the manual operating mode

**ATTENTION: Is not overwritten in automatic mode, see also chapter 6**





SENSITIVITY (%)	80
-----------------	----

The range is between 0% (low sensitivity) and 100% (high sensitivity)

- Please press the keys  and  or  to change the setting for the sensitivity.
- Please press ENTER  to confirm the setting for the sensitivity.

### 9.2.7 Fault counter evaluation mode





MULTIPLE THREADS ○	SINGLE THREADS ●
--------------------	------------------

- **MULTIPLE THREADS:** The sum of all detected yarn faults lead to stop the machine once the number of faults is reached (setting "Recognised faults until stop").
- **SINGLE THREAD:** Each thread is monitored individually (recommended setting). The detection of the missing thread must reach the entered number of faults to stop the machine (setting "Recognised faults until stop").
- Please press the keys  and  to switch between the evaluation modes.
- The symbol  indicates the active evaluation mode. The selection is activated using the ENTER  button.

### 9.2.8 Start delay

DELAY TIME (sec)	5
------------------	---

Start delay between 3 and 100 seconds

- Please press the keys  and  or  to change the setting for the start delay.
- Please press ENTER  to confirm the setting for the start delay.





### 9.2.9 Measurement averaging

AVERAGES	1
----------	---

The max. possible averaging setting is 256

This setting specifies the number of exposures that are used for a measurement. The averages setting extends the measurement time by the entered number.

**Warning:** Should not be altered.

- Please press the keys  and  or  to change the setting for the averages.
- Please press ENTER  to confirm the setting for the averages.




### 9.2.10 Type of standardisation

NORMALIZE MODE	1
----------------	---

Setting 0: Correction of yarn values with fixed values

Setting 1: Automatic adjustment of yarn values to equal levels





Setting 2: No correction of the yarn values

- With the keys  and  the correction selection is made.
- Please press ENTER  to confirm the selection.
- **Warning:** Should not be changed if possible.

### 9.2.11 Selection of the illumination

FRONT LIGHT ●	BACK LIGHT ○
---------------	--------------

Must be entered to determine the type of illumination for the measurements.

- With the keys  and  the illumination selection is made.
- The symbol  indicates the active illumination.
- Please press ENTER  to confirm the selection.

### 9.2.12 Automatic offset for the measurements limit





**ATTENTION: Sensitivity in automatic mode; Is not overwritten in manual mode, see also chapter 6.**

AUTO OFFSET DETECT	20
--------------------	----

The range is between 1 and 100 (the entered value should be between 10 and 50).

This setting defines the distance (offset) to the possible measurement limit in the automatic mode.

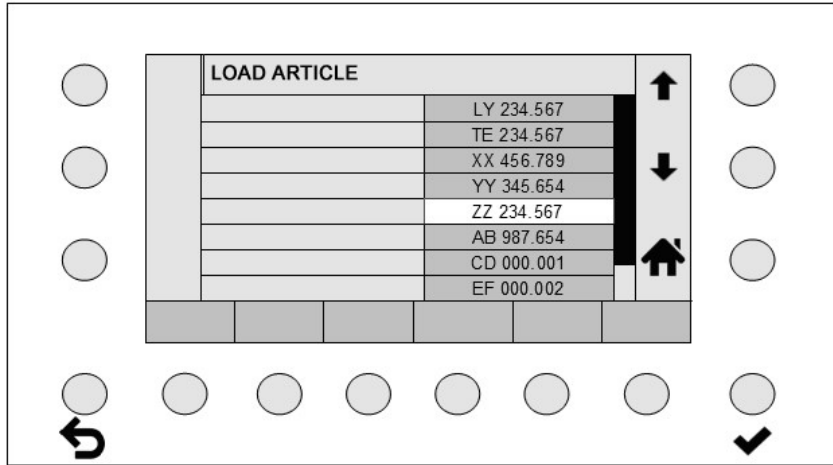
**Warning:** Should not be changed if possible.

- Please press the keys  and  or  to change the setting for the offset.
- Please press ENTER  to confirm the setting.

### 9.2.13 Loading a saved article

LOAD ARTICLE

- With an active LOAD ARTICLE field and ENTER ✓ you reach the input screen for loading a saved article.

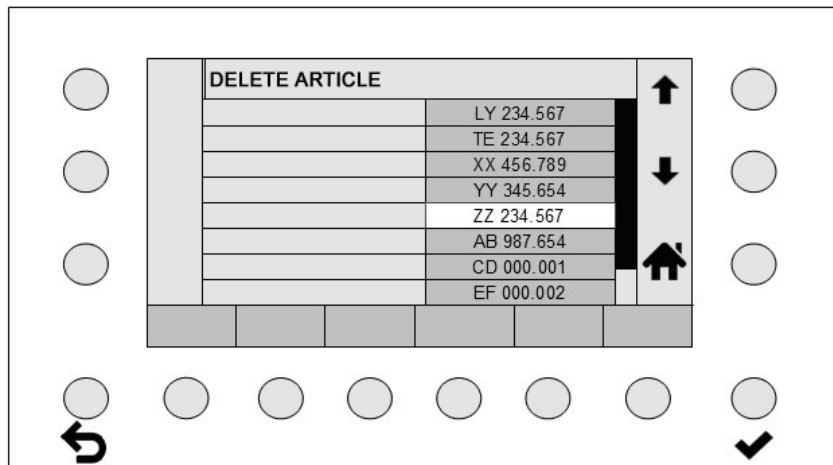


- Please press the keys ↑ and ↓ to select an article.
- Please press ENTER ✓ to confirm the selection and to set the stored values of the selected article.

### 9.2.14 Deleting an article

DELETE ARTICLE

- With an active DELETE ARTICLE field and ENTER ✓ you reach the input screen for deleting a saved article.



- Please press the keys ↑ and ↓ to select an article.
- Please press ENTER ✓ to delete the selected article.

### 9.2.15 Saving an article

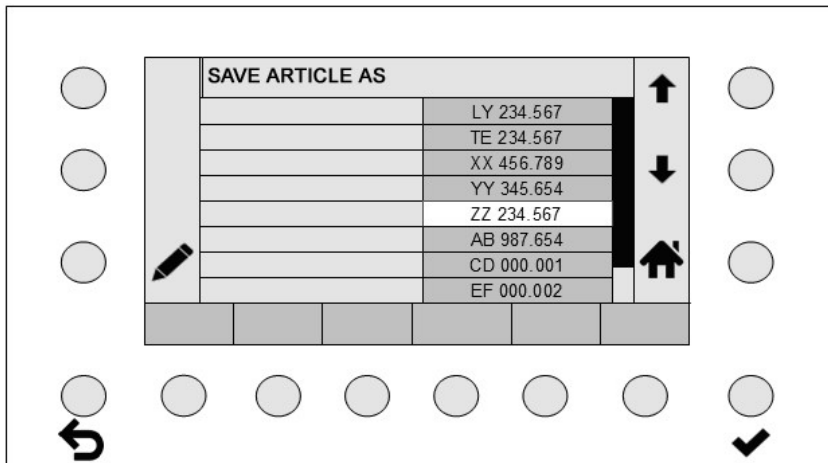
SAVE ARTICLE

With SAVE ARTICLE the parameters of a loaded article are overwritten with new valid parameters. This makes it possible to change an article and save it under the same name.

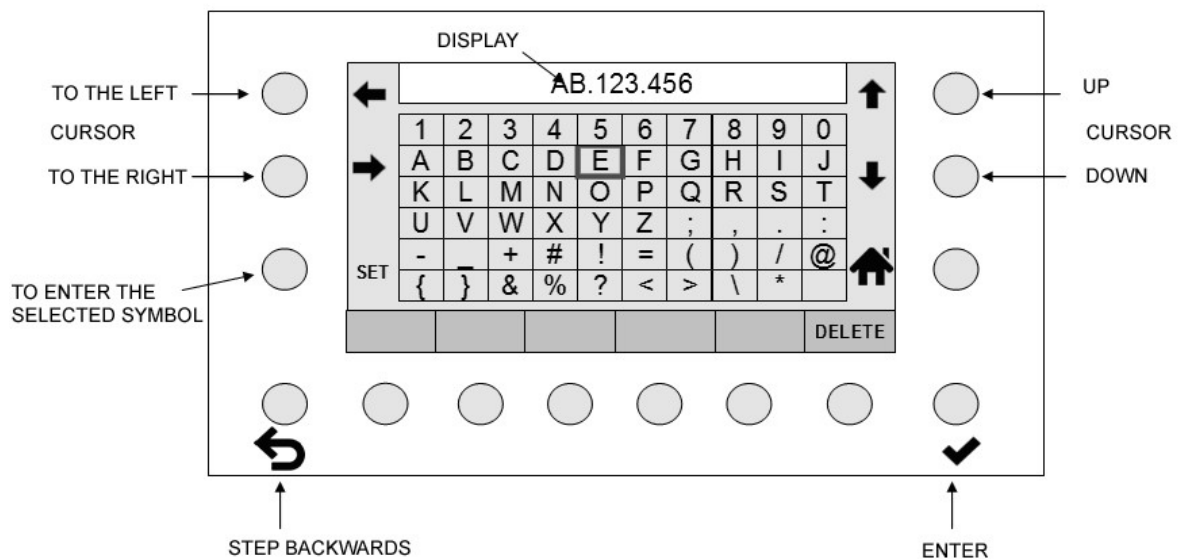
### 9.2.16 Saving an article under a new name

SAVE ARTICLE AS






- With an active SAVE ARTICLE AS field and ENTER ✓ you reach the respective input screen..



- When you select an article name by using the arrow keys and confirm it with ENTER ✓ the article parameters are saved under the selected name.
- The pencil ✎ key opens the screen for the alphanumeric input.




**ATTENTION:** If changes are made on the current article and are not saved, this will not be recognised. These changes are also retained after the deactivation and reactivation of the control unit. However, they will be lost through the loading of an article.


- The displayed name can be deleted partially or completely with the DELETE key.
- Please use the arrow keys to select a character on the screen matrix.
- With the key SET this selection is added to the new name.
- With ESC  the last entry on the left is deleted.
- With ENTER  the parameters are saved as a new article under the entered name. Other saved articles are not affected.
- By pressing HOME  you return to the previous screen. All data for an article, which was not saved using the  ENTER  key are lost.

### 9.3 Procedure for article optimisation and control

Before starting optimisation, the article settings (see 9.2) should be saved under a distinct article name.


The mechanical setup must have been performed in accordance with the installation manual.

- Pressing the HOME button  takes you to the main screen.
- Select **automatic mode** and **test mode**
- Start the warping machine
- Check whether the measured total yarn number is displayed in a stable fashion and corresponds with the target yarn number.  
If yes, the setting is OK.  
If not: change the scan time by pressing the SCAN + and SCAN - button  
If not: change the sensitivity by pressing the SENS + and SENS - button  
See 6.3 and 7.2

Press the function button  to update the measuring cycle.

If it is not possible to achieve a correct and stable total yarn number:

- Select **manual mode** and **test mode..**
- **Start the warping machine again.**
- Check whether the measured total yarn number is displayed and corresponds with the target yarn number.  
If yes, the setting is OK.  
If not: change the scan time by pressing the SCAN + and SCAN - button  
If not: change the sensitivity by pressing the SENS + and SENS - button  
See 6.3 and 7.2

Press the function button  to update the measuring cycle.

If it is not possible to reach a correct and stable total yarn number:

- Ensure the exclusion of foreign light influence (e.g. alternating sun rays, flashing lights) from the monitoring area.
- Ensure the installation of suitable lighting and a suitable camera filter for the material to be monitored. This is especially important with difficult materials (thin black yarns).
- Check the focus in accordance with chapter 4.3 of the installation manual.
- Check the angle of incidence in accordance with chapter 4.5 of the installation manual.

If it is not possible to achieve a correct and stable total yarn number:

- Contact Protechna support via the Protechna home page.

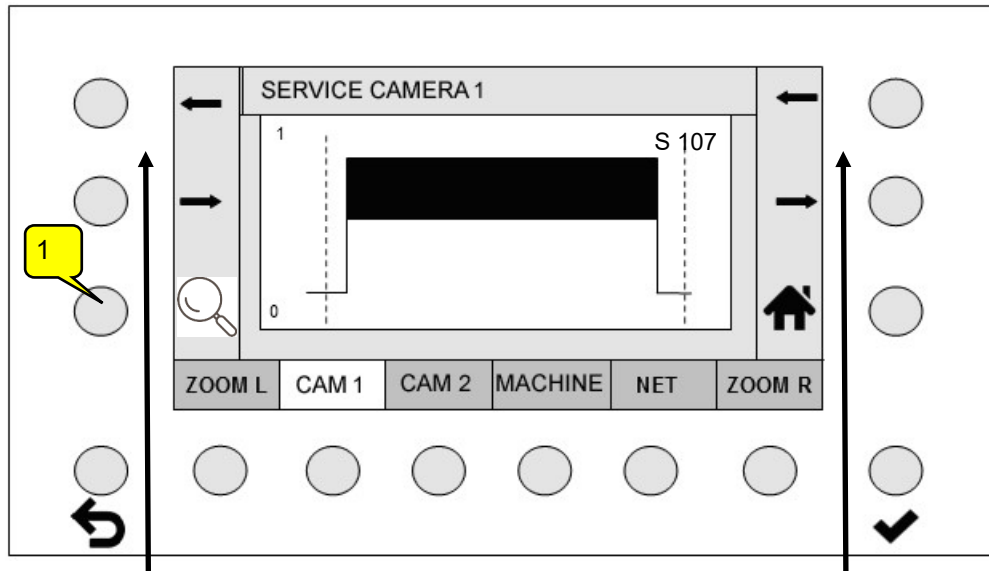
**ATTENTION: The operating mode (automatic or manual) should not be changed after finding the optimal settings!**



## 9.4 Service

Please press the MENU and SERVICE keys to directly enter the setting of the active camera's ranges.

### 9.4.1 Setting of the camera's ranges



Cursor keys left

Cursor keys right

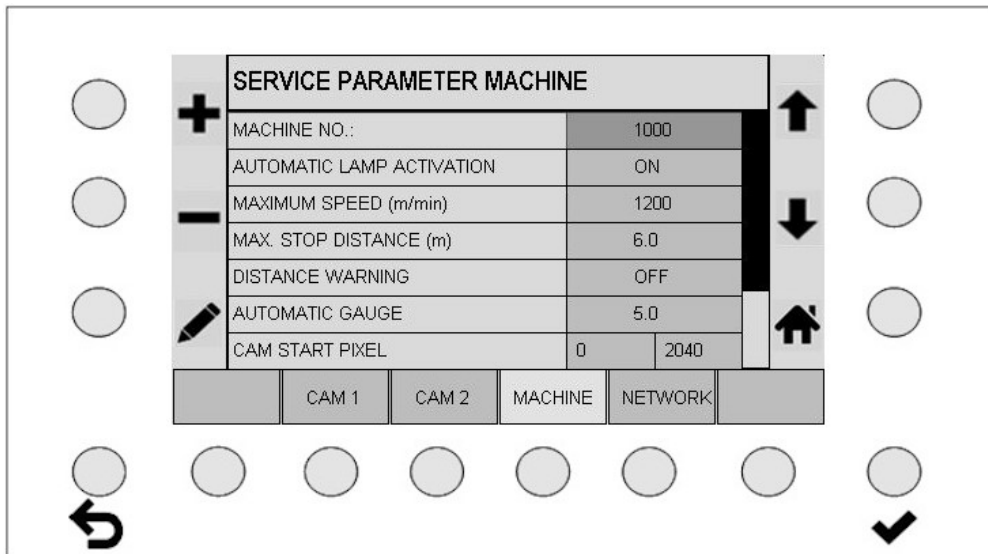
- Please press the key CAM 1 or CAM 2 to select an active camera. Inactive cameras are not displayed.
- The arrow keys on the left move the left cursor and the arrow keys on the right move the right cursor. They determine the section, which the camera is monitoring.
- Please press the keys ZOOM L or ZOOM R to extend the display by +/- 50 dots around the cursor. Please press the keys again to return to the overall view.
- Actuating the zoom button (1) will increase the signal display incrementally. The cycle starts again with the normal display after the third magnification stage.
- Please press ENTER ✓ to confirm the setting for the cursor limits of the monitoring section.

Note:

In the right, upper corner the sharpness value (here „S 107“) of the appropriate camera is displayed. This value is used to optimally adjust the camera sharpness (see Installation Manual).

### 9.4.2 Changing the machine settings

Please press the MACHINE key to enter the screen for the machine settings.



CAM STOP PIXEL	5120		5120
CAMERA SWAP	0		0
DISPLAY SIGNAL REVERSED	1		

#### 9.4.2.1 Machine number

MACHINE NO.	12345
-------------	-------

The setting for the machine number must not be altered.

#### 9.4.2.2 Automatic lamp activation

AUTOMATIC LAMP ACTIVATION	OFF
---------------------------	-----

When the automatic illumination function is activated, the LED lamps are switched off when the machine is stopped and are switched on when the machine is running or the control unit is switched into test mode operation.

- Please press the keys **+** and **-** to switch between the possible selections.
- Please press ENTER **✓** to activate the selection.

### 9.4.2.3 Stop distance warning

Knowing the machine speed and the available stopping distance makes it possible to calculate whether the set measuring times are sufficient for stopping the machine in sufficient time. The braking distance of the machine still needs to be added.

MAX. SPEED (m/min.)	1200
---------------------	------

Please enter the max. possible machine speed.

MAX. STOP DISTANCE (m)	7.5
------------------------	-----

Please enter the available stopping distance.

DISTANCE WARNING	ON
------------------	----

- Please press the keys **+** and **-** to select between ON and OFF.
- Please press ENTER **✓** to activate the selection.

When ON is selected, the calculated reaction distance is displayed as bar graph in the main screen and the test screen.



Reaction distance good  
(green bar)



Check reaction distance  
(yellow bar)



Reaction distance too long  
(red bar)

#### 9.4.2.4 Automatic step size

The search speed of the operating point in the automatic mode is determined with the help of the automatic step size (step resolution).





AUTOMATIC GAUGE	5
-----------------	---

The setting range is between 1 and 20 (recommended setting is 5). This parameter value, however, should not be altered.

#### 9.4.2.5 Direct input of the camera's limits

In addition to the setting of the camera's limits in the diagram, here it is possible to enter the camera's limits directly.

	Cam 1	Cam 2	
CAM START PIXEL	1000	1000	Setting the limit: Start value
CAM STOP PIXEL	5000	5000	Setting the limit: End value

- Please press the keys  and  or  to change the parameter settings.
- Please press ENTER  to confirm the new value.

#### 9.4.2.6 Turning the counting direction of the cameras

The direction of counting is determined by the assembly and the “camera inverse” parameters.



The standard delivery state of the camera traverse is:  
Camera 1 is located on the cable outlet side of the traverse.

The standard assembly (viewed against the direction of production) is:  
The cable outlet side of the traverse is the right-hand side. The control unit is assembled on the right-hand leg. The type plate of the traverse is visible.  
This produces the standard direction of counting of the delivery state as shown in the next example.

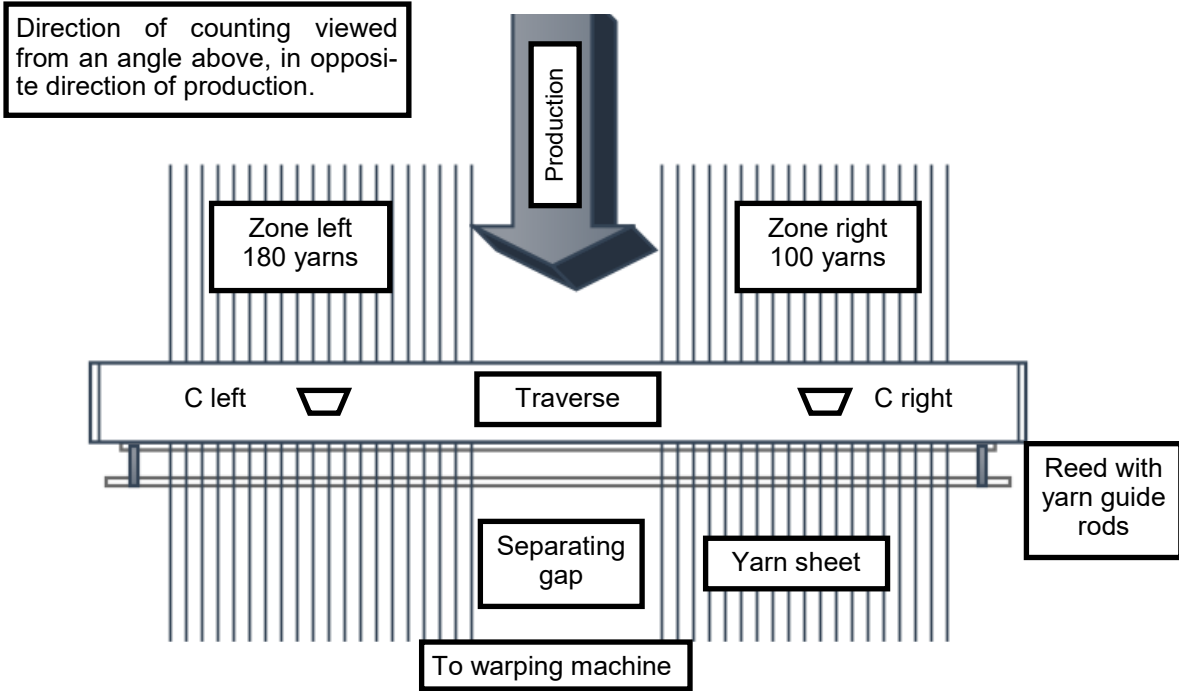
**Attention:** The standard assembly facilitates device operation. This is not the case if the traverse is assembled mirror inverted. The signal behaviour is then mirror inverted.

	Cam 1	Cam 2	Remark
CAMERA SWAP	0	0	Standard settings from the works

The direction of counting of every camera can be inverted to permit customer-specific methods of counting.

- The counting direction of the camera can be turned using the  and  buttons.
- The number [ 1 ] in the selection field displays a camera that counts in an inverted fashion.

This changes the display of the missing yarn as shown here:



**A) Standard assembly of the traverse: (Using 2-camera system as an example)**

Recognised: when viewed against the direction of production, the type plate of the traverse is visible; the cable outlet is on the right-hand side.

This produces: If a stylus is moved from left to right in the monitoring area, the signal will also move from left to right. The running direction of the signal display is displayed correctly.

<b>Camera 2 (C2 left 180 yarns)</b>		<b>Camera 1 (C1 right 100 yarns)</b>	
Inversion	Yarn numbering	Inversion	Yarn numbering
C2=0	101 → 280	C1=0	1 → 100
C2=1	280 ← 101	C1=1	100 ← 1
<b>C2=0</b>	1 → 180	<b>C1=1</b>	100 ← 1 (standard)
C2=1	180 ← 1	C1=0	1 → 100

**B) Traverse installed mirror-inverted:**

Recognised: when viewed against the direction of production, the type plate of the traverse on the rear side; the cable outlet is on the left-hand side.

Es ergibt sich: If a stylus is moved from left to right in the monitoring area, the signal will move from right to left. The running direction of the signal display is displayed mirror inverted.

<b>Camera 1 (C1 left 100 yarns)</b>		<b>Camera 2 (C2 right 180 yarns)</b>	
Inversion	Yarn numbering	Inversion	Yarn numbering
C1=0	100 ← 1	C2=0	280 ← 101
C1=1	1 → 100	C2=1	101 → 280
<b>C1=1</b>	1 → 100	<b>C2=0</b>	180 ← 1 (standard)
C1=0	100 ← 1	C2=1	1 → 180

### 9.4.2.7 Reversed displaying of the camera signals

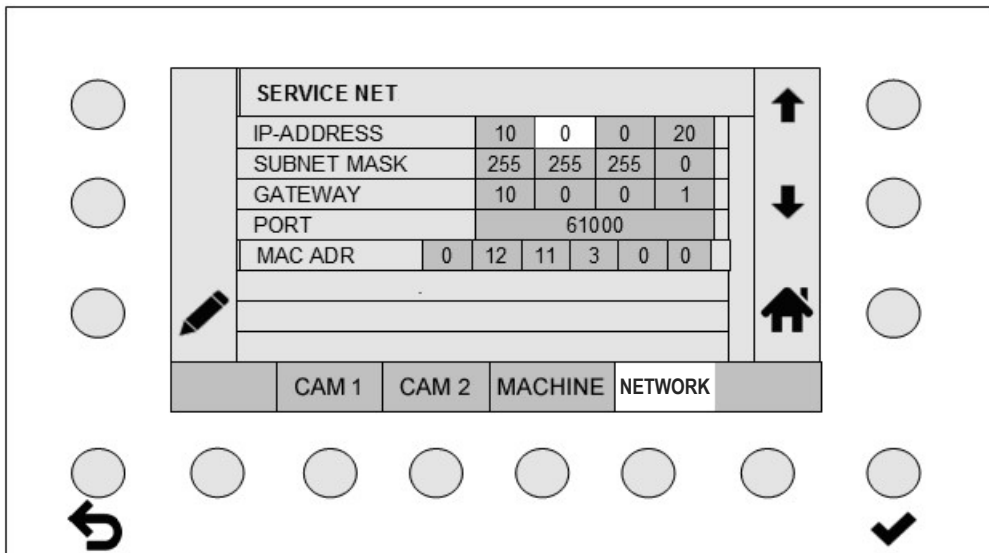
This setting influences the display of the camera signals in the Info-menu as well as in the Service-menu. The right setting makes sure that the direction of the displayed signal does match with the actual view to the yarn sheet.

With standard assembly, the signals should be displayed reversed. This is the standard setting.

DISPLAY SIGNAL REVERSED	1
-------------------------	---

- The display of the signals can be turned by using the **+** and **-** buttons.
- The number [ 1 ] in the selection field indicates that the signals are displayed reversed (standard setting).

### 9.4.3 Checking the network settings



Menu for setting and checking the network parameters. These values should not be altered.

### 9.5 User language setting

Here a direct selection of the supported languages is possible.

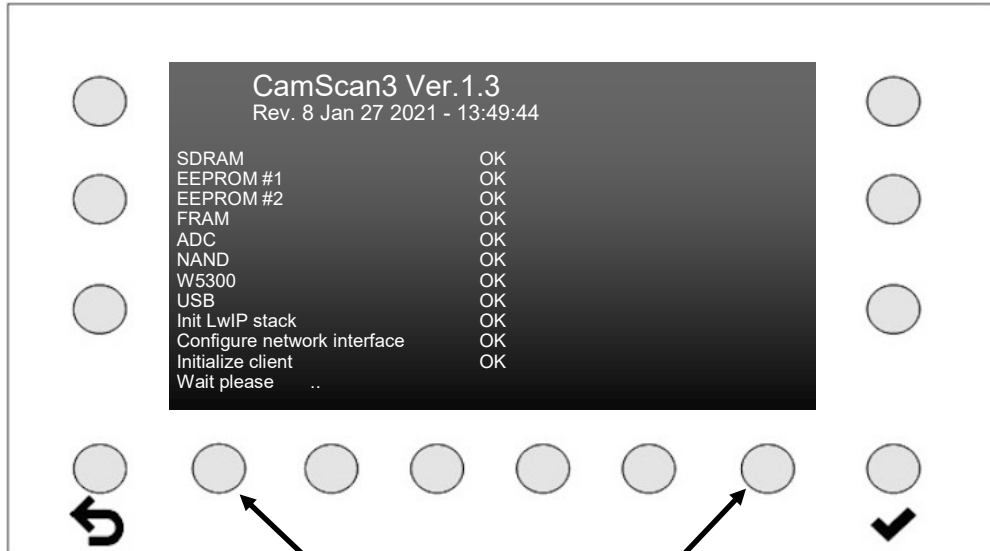
### 9.6 Expert mode

The expert mode is not described in this manual. This mode is intended for future applications.

### 9.7 Factory reset

**Do as following in order to restore the settings to factory default:**



- Please switch off the Control Unit. Switch it on again after three to four seconds.
- Please press the buttons depicted below simultaneously when the startup-screen is displayed.



Press these keys at the same time

- Please release both buttons when the screen depicted below is displayed.



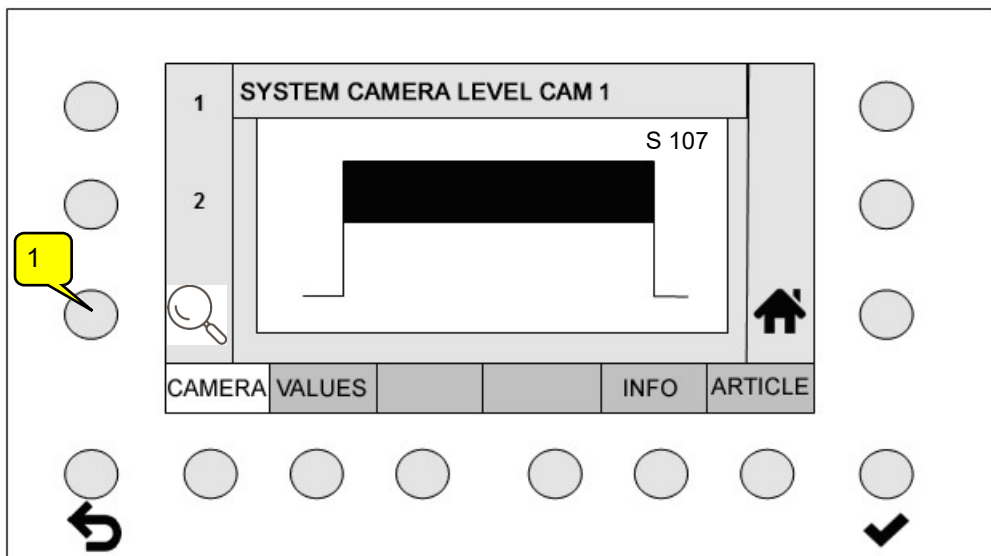
- Please press ESC  to cancel the procedure.
- Please press ENTER  to restore the settings to factory default.

## 10 System information

Menu to check some operating parameters. It is intended to help identifying system errors and with the query of parameters.

### 10.1 Camera signal (CAMERA)

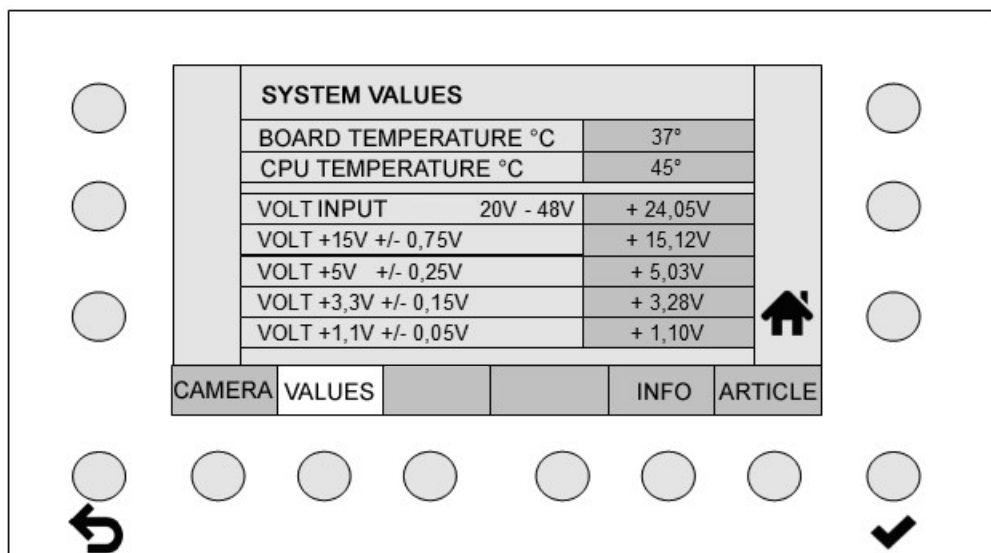
Here the camera signal is displayed to be able to detect any possible overlap between the cameras. Furthermore, the sharpness value of the appropriate camera is displayed (here „S 107“), which can be used to optimally adjust the camera sharpness (see Installation Manual).



Actuating the zoom button (1) will increase the signal display incrementally. The cycle starts again with the normal display after the third magnification stage.

### 10.2 System Values (VALUES)

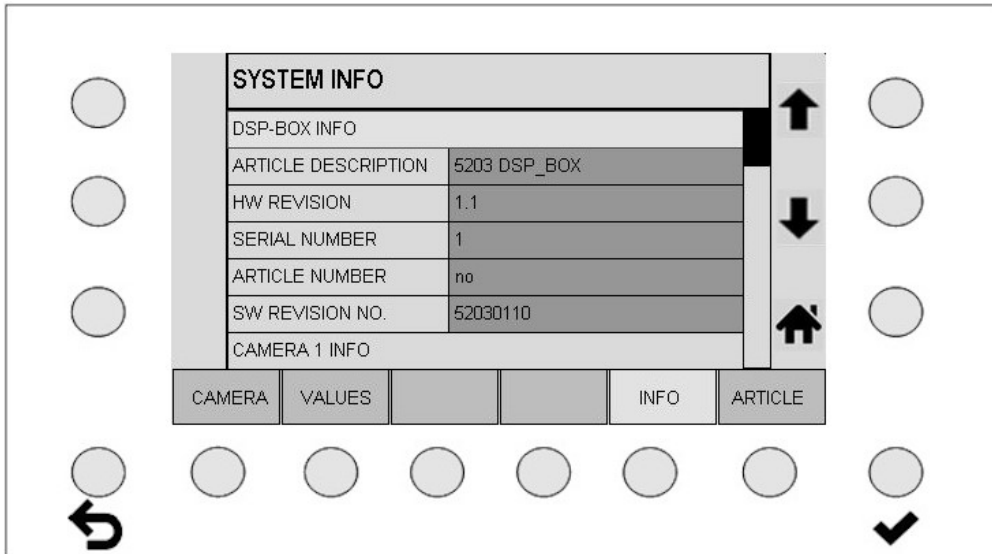
Temperatures and voltages are monitored to detect deviations or exceeding of the maximum values. The voltage tolerances are displayed on the left side of the display.





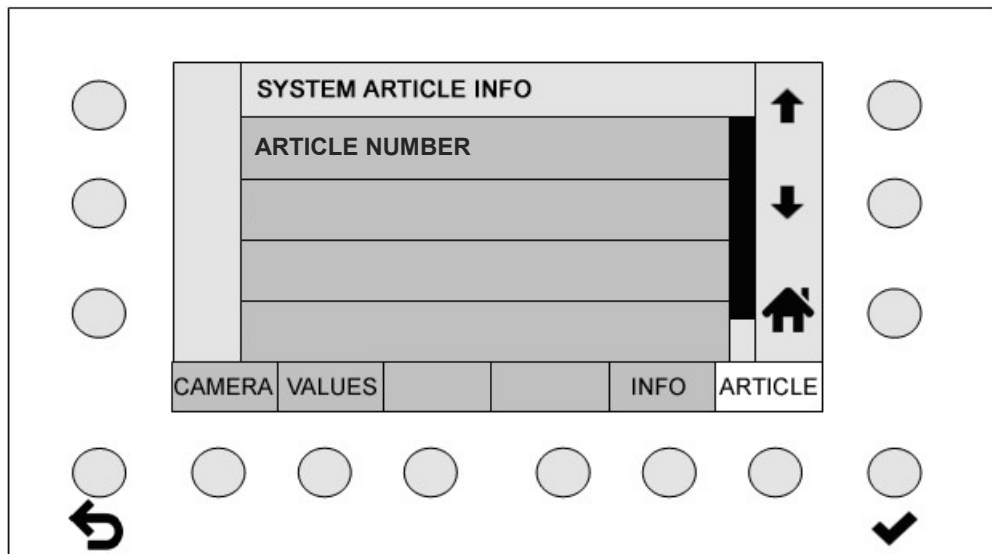
### 10.3 General internal information (INFO)

Provides information about the installed components of the CAMSCAN device. An exact description, serial number, software releases, etc. are displayed.



### 10.4 Article information (ARTICLE)

The article name and the creation date are displayed.



**EC - Conformity Declaration**

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We hereby declare,

**Protechna Herbst GmbH & Co. KG**  
**Lilienthalstr. 9**  
**85579 Neubiberg**  
**Germany**

that the product to the following description insofar as its original design and construction and also the model now despatched by us, corresponds to the relevant safety and health requirements laid down by the EC Directives.


Any alteration of the product carried out without permission nullifies this declaration.

Description of the product:       **Digital Thread Counter**  
Type:                                   **CAMSCAN**  
Model - No.:                         **5203**

Applied co-ordinating standards, in particular:

DIN EN 61326-1; VDE 0843-20-1:2013-07  
Electrical equipment for measurement, control, and laboratory use - EMC requirements - Part 1  
General requirements (IEC 61326-1:2012); EN 61326-1:2013

DIN EN 61326-2-2; VDE 0843-20-2-2:2013-08  
Electrical equipment for measurement, control, and laboratory use - EMC requirements - Part 2-2  
Special requirements - Test arrangement, operating conditions and performance characteristics for  
portable test, measurement and monitoring equipment for use in low-voltage power supply networks  
(IEC 61326-2-2:2012); EN 61326-2-2:2013

Signature of manufacturer:         
Rico Wellnitz

Details of signatee:               Development Manager

Date:                                   14.7.2016

