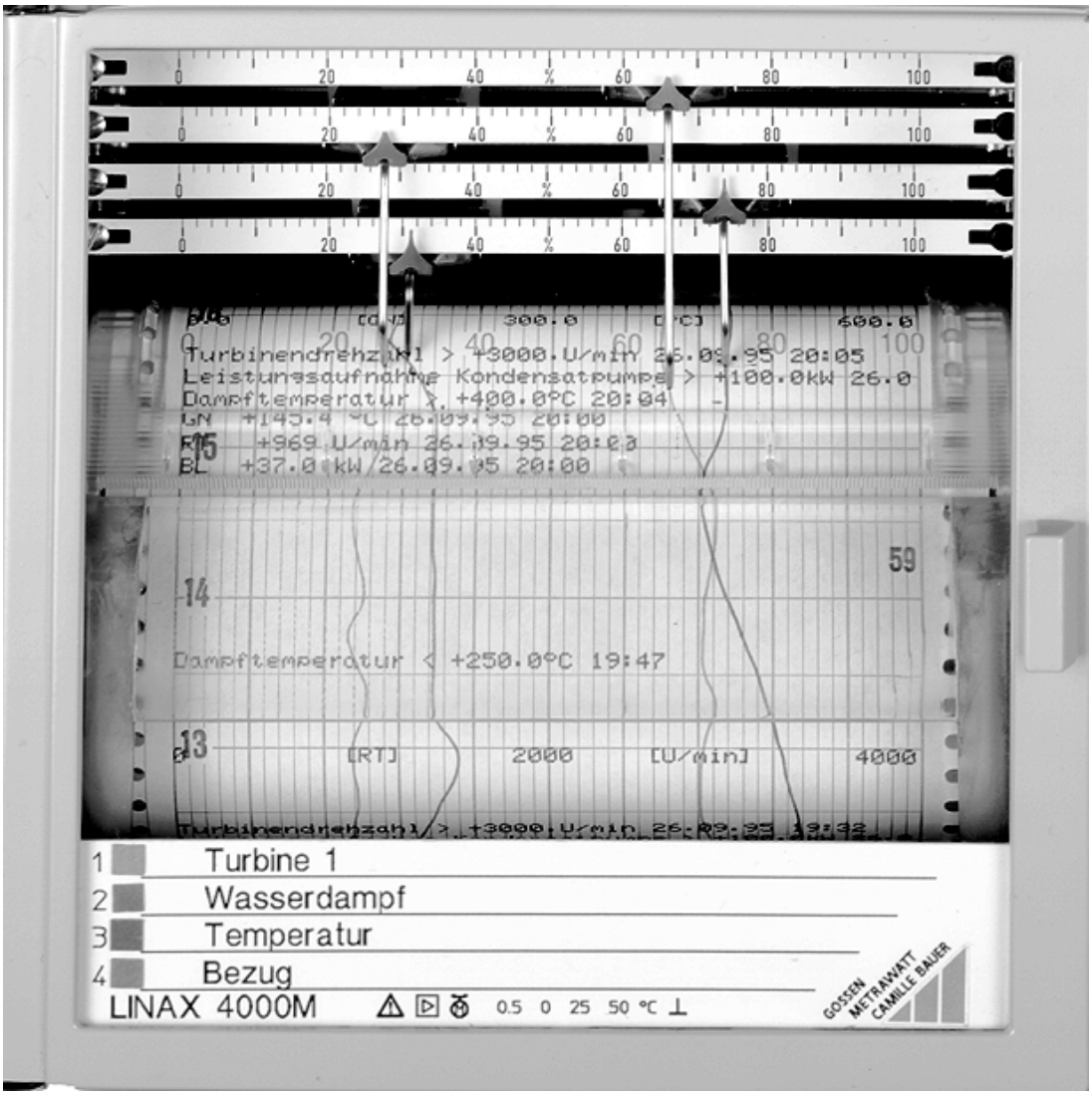
LINAX 4000M

14083B
1 / 12.95



Contents

1 Introduction

A control and display panel is integrated in the continuous-line recorder LINAX 4000M. It is accessible after removal of the recording table.

Alphanumeric texts can now be entered via the RS-485 interface; the parameterizing program PARATOOL L4000M (ordering number A402C) is available for parameterization of the recorder via this interface.

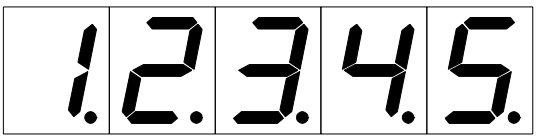
2 Recording mode

- To position the chart, press the recording table to the rear by the two grip pans. The chart is transported wi
- th increased speed in the direction of flow (up to the maximum chart speed).

3 Control and display panel

The control and display panel has 5 red seven-segment displays and 3 keys.

Display



Keyboard

<▲> Scroll up key:
Next digit with setting of numeric values, return to main menu

<▶> Scroll right key:
Next main menu item, next parameter, next parameter value, next digit position

<◀–> Enter key:
Select or exit parameter or parameter values

4 Flow

4.1 Start

- Press the unlocking lever Eh (see figure 1) downwards; the recording table tilts to the front. Remove the recording table.

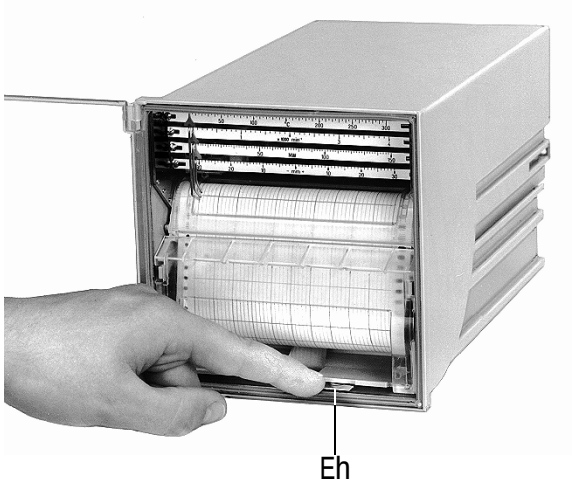


Figure 1 Removing the recording table

Error messages – if any – are displayed after removal of the recording table. They must be acknowledged with the <◀–> key.

If there is no error message, the software version of the recorder is shown.

When the version number is shown, the measuring systems are active. The actual measured values are displayed.

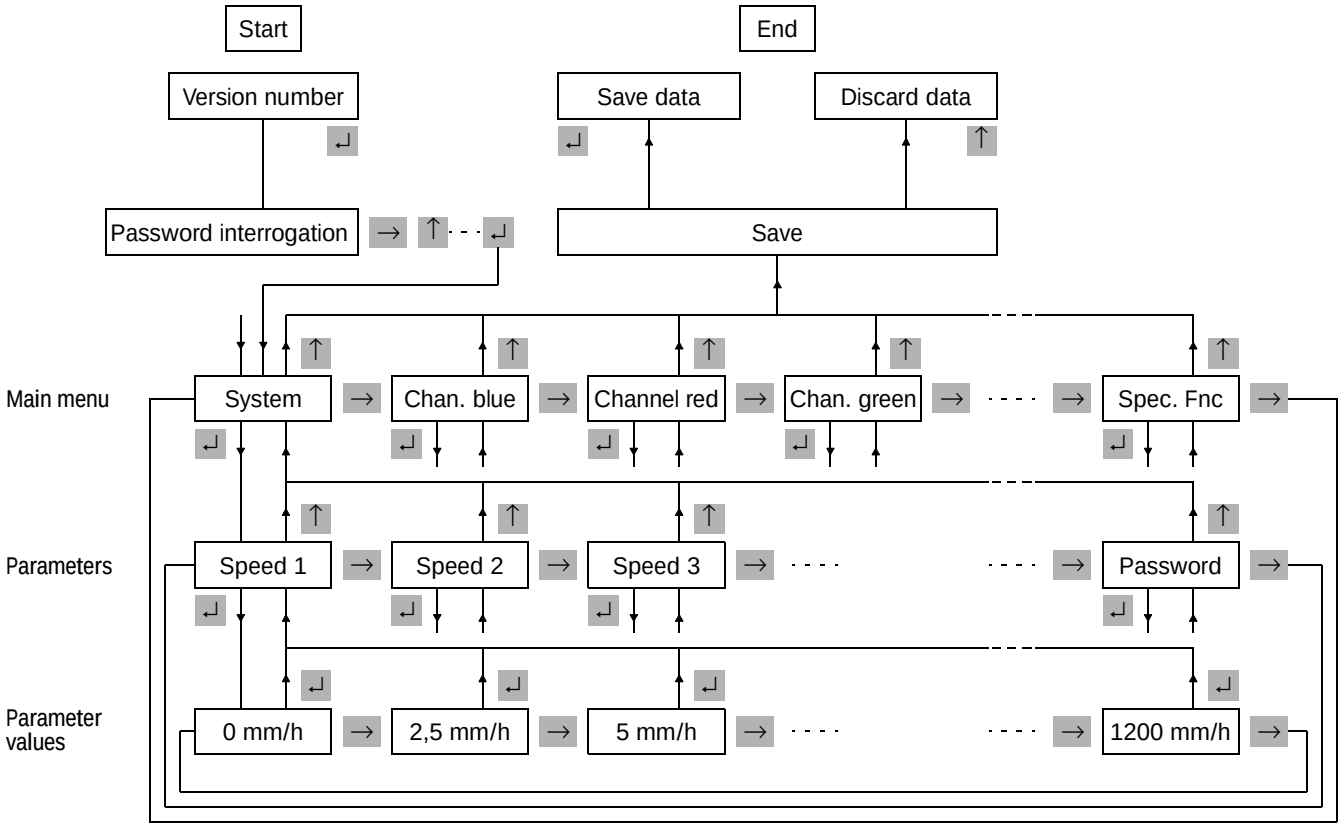
- With the <◀–> key, switch the parameterizing mode of the recorder on.

The recording pens travel to the park position:
Violet approx. 5 % of the recording width
Blue approx. 30 % of the recording width
Red approx. 60 % of the recording width
Green approx. 95
% of the recording width

If a password was defined, a prompt for password entry appears (see section "System parameters", page 8).

If a password is not defined, the main menu item "System data" is displayed.

4.2 Principle of parameterization



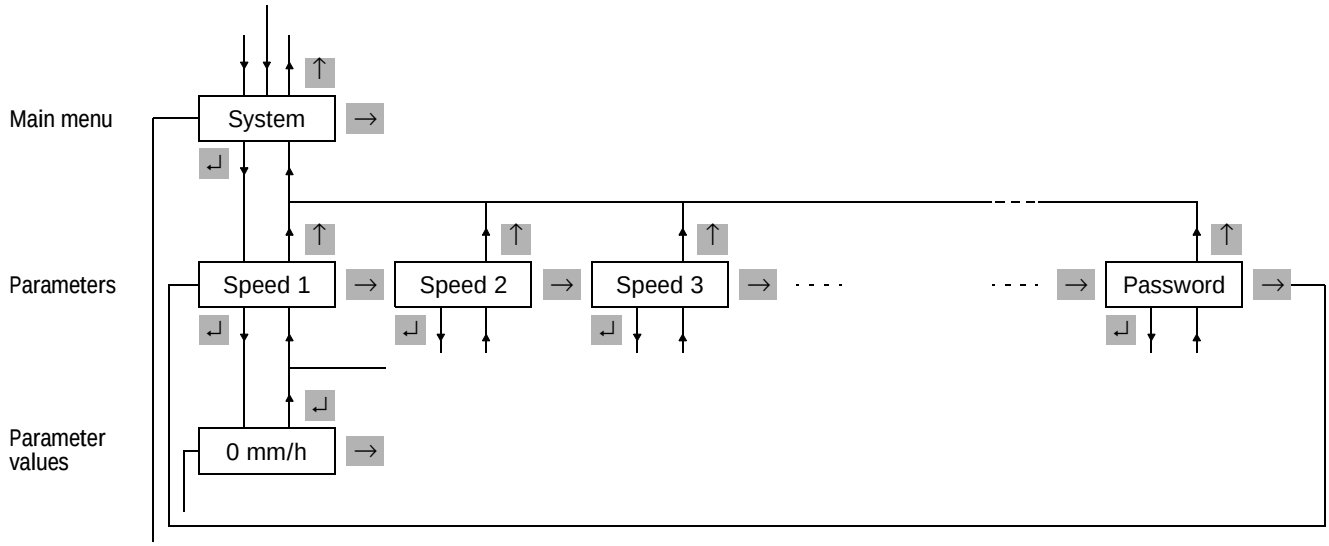
4.2.1 Main menu

- Successively display the following main menu items with the <→> key:

Display shows	Main menu item
SYS	System data (speeds, password, interface parameters, time/date)
Ch .bL	Channel data blue system
CH .rd	Channel data red system
CH .gn	Channel data green system
CH .ut	Channel data violet system
Prt. iu	Print intervals
Prt.SY	Print sync times
ASS.d i	Assignment binary inputs to printer function
SP.FnC	Special functions (e.g. simulation)

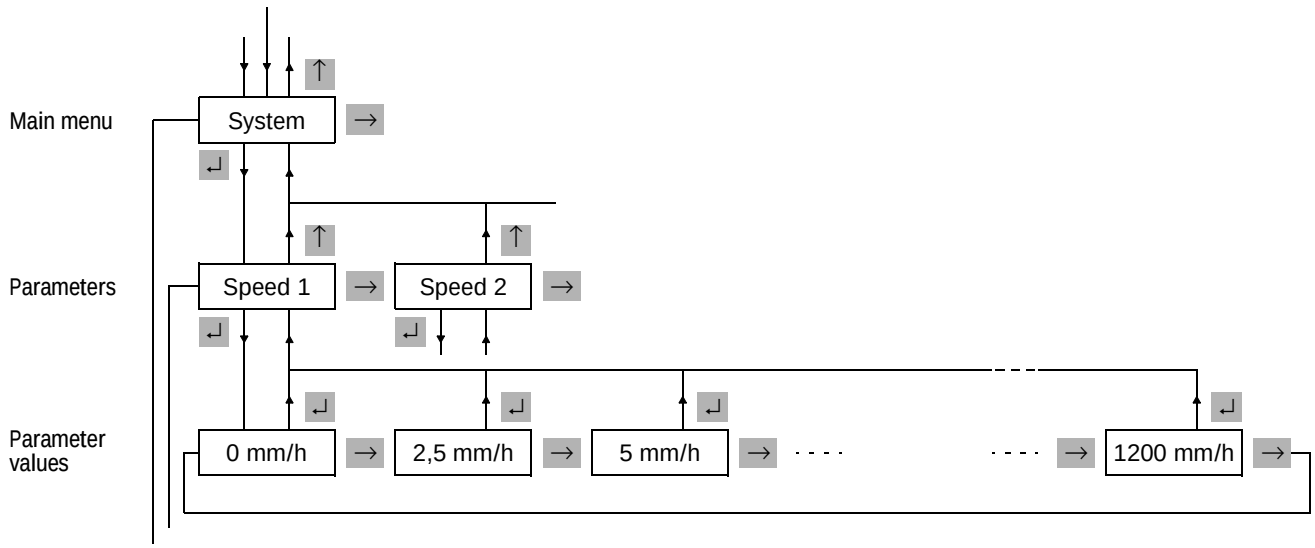
The main menu items "System data" and "Special functions" are always displayed.
The channel menus are only displayed when the corresponding channel is installed.
The print head functions "Print intervals", "Print sync times" and "Assignment binary inputs" are only displayed, when the printer channel is installed in the recorder.
The texts to be printed can only be entered via the RS-485 interface.

4.2.2 Parameter selection



- Confirm the selected main menu item with the <↵> key; the first parameter of this main menu item is displayed.
- Successively show the parameters of the main menu item with the <→> key.
- Return to the main menu item with the <↑> key.

4.2.3 Definition of the parameter values



- Confirm the selected parameter with the <↵> key; the default value of the confirmed parameter is displayed

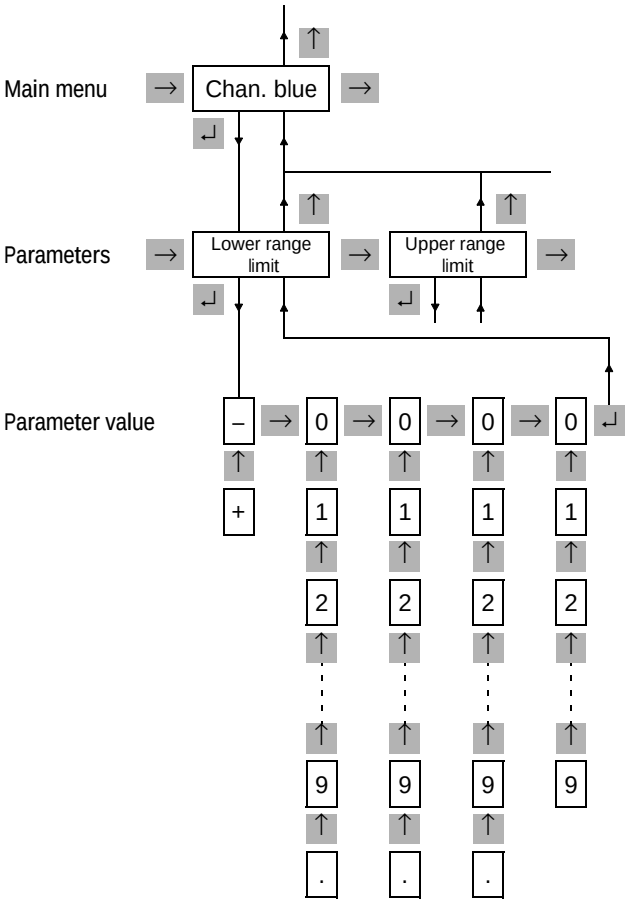
Two types of parameter value definition are distinguished.

1. The selection of a value from n pre-defined values.
   (Example: Selection of a speed from the
   0 / 2.5 / 5 / 20 ... mm/h series)
2. The entry of arbitrary values within a lower and upper barrier.
   (Example: Entry of the lower limit and upper limit of the measuring range)

Selection

- With the key <→>, successively display the parameter values of the selected parameter.
- With the key <↵>, confirm the selected parameter value; the parameter is displayed.

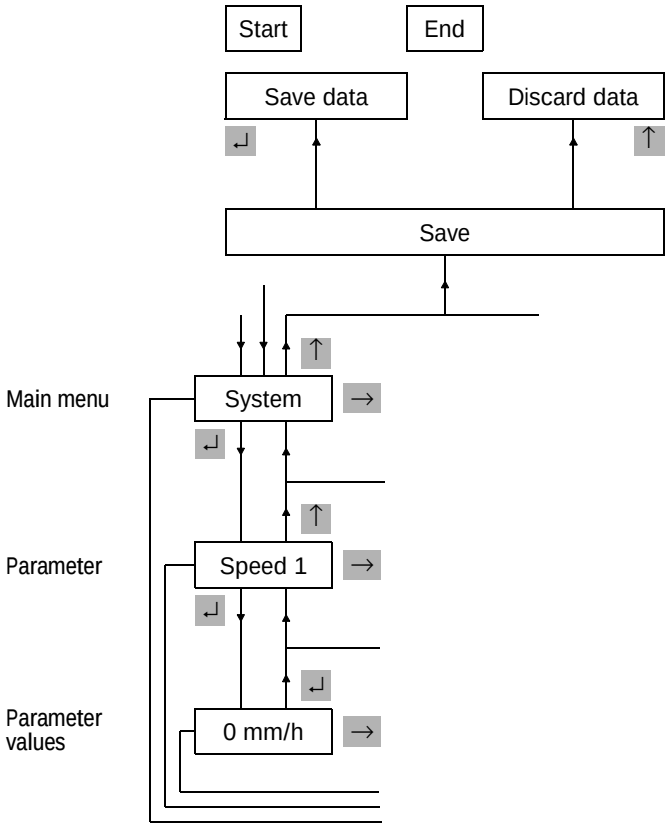
Entry



- With the <→> key, successively select the character positions 1 ... 5 of the parameter value; the selected position flashes.
- With the <↑> key, successively display the characters / 0 / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / .
- With the <↵> key, confirm the established four-digit number (with sign); the parameter is displayed.
- With the <↑> key, return to the main menu.

The "–" and "." characters are only offered for selection when entering floating numbers; when entering integer numbers (e.g. password), these characters are not offered.

4.3 End of parameterization



- "Save?" is displayed when pressing the <↑> key
  either
- Store the changed parameter data in the EEPROM by pressing the <↵> key
  or
- Do not store the changed parameter data by pressing the <↑> key.

Insertion of the recording table while parameterizing exits the parameterizing mode. The data entered so far is not stored; the old parameter data remains valid.

5 Parameter description

5.1 System parameters

The following parameters can be called up in the main menu item "System parameters".

Display shows	Parameter	Parameter value definition by
SPd .1	Speed 1	Selection
SPd .2	Speed 2	Selection
SPd .3	Speed 3	Selection (on/off)
CLoC .	Time	Entry (integer)
dAtE .	Date	Entry (integer)
YEAr .	Year	Entry (integer)
dFor .	Print format for date and time	Selection
Addr .	Address of equip. on the bus for RS-485	Entry (integer)
bAUd .	Baud rate for RS-485	Selection
PSPd .	Printout actual speed	Selection
PSCA .	Printout scaling line	Selection (on/off)
SSCA .	Spacing scaling line	Entry (integer)
PASS .	Password	Entry (integer)

5.1.1 Chart speeds

Three speeds can be selected and changed externally. In operating mode, speed 1 is active without external selection. Speed 2 and speed 3 can be controlled via binary inputs when the recorder is fitted with the option "Binary inputs". Speed 3 has a higher priority over speed 1 and speed 2.

When speed 3 is switched on, the recorder goes to standby. All measuring systems are at the beginning of the scale.

The values of speed 1 and speed 2 can be chosen from the following speed series.

Parameter:
Speed 1
Speed 2

Parameter values:
0/2.5/5/10/20/60/120/240/300/600/1200

Speed 3 can be parameterized with the values "on" and "off". If "off" is parameterized, the speed of the recorder is switched off via the corresponding binary input.

Parameter:
Speed 3

Parameter values:
"off" Speed stop
"on" Speed 1 mm/h

5.1.2 Time, date and year

Parameter:
Time
Date
Year

Parameter values:
00 ... 99 (type integer)

Time
To set the time, select the parameter with the <→> key. When the <↵> key is pressed, the preset parameter value is displayed.

11:33 last place flashes.

The cursor is moved with the <→> key, the digit at the cursor position is changed when pressing the <↑> key. When pressing the <↵> key, the time is entered and the parameter is displayed.

Date and year
Setting of date and year is made corresponding to the time setting.

Time and date settings are saved immediately while all other parameter data is only stored when the parameterizing mode is exited.

The factory setting for time and date is:
01.01.94, 00:00 h.

5.1.3 Print format for date and time

Date format
As format for the date, "EURO" can be chosen for European format, e.g. 06.12.91, or "US" for American format, e.g. 12/06/91. This setting is effective for all time and date outputs.

Parameter:
Print format for date and time.

Parameter values:
EURO
US

To set the date format, the parameter is selected with the <→> key. The preset parameter value is displayed when the <↵> key is pressed. The format is selected when the <→> key is pressed. Pressing of <↵> enters the date format and the parameter is displayed.

5.1.4 Serial interface RS-483

Parameter:
- Address
- Baud rate

Address
To set the address, select the parameter with the <→> key. When pressing the <↵> key, the preset parameter is displayed.

Parameter values:
- 000 ... 127 (= equipment addresses)

Broadcast address
Address 132 is the broadcast address of the LINAX 4000M. LINAX 4000M recorders are simultaneously addressed via the broadcast address.

Baud rate
The following baud rates can be set:

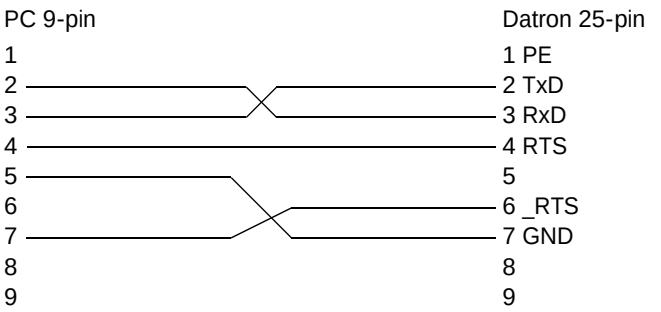
Parameter values:
- 600/1200/2400/4800/9600/19200

Parity
Even parity is fixedly set.

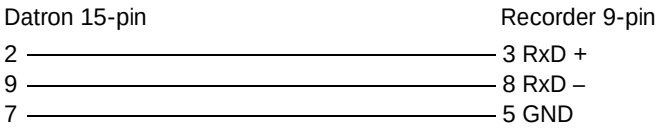
Interface protocol
A protocol with reference to the Profibus is used.

Notes on the communications setup
An interface converter (e.g. RS42x from the Datron Company) is required for a RS-485 connection between the recorder and a PC with RS-232 interface.

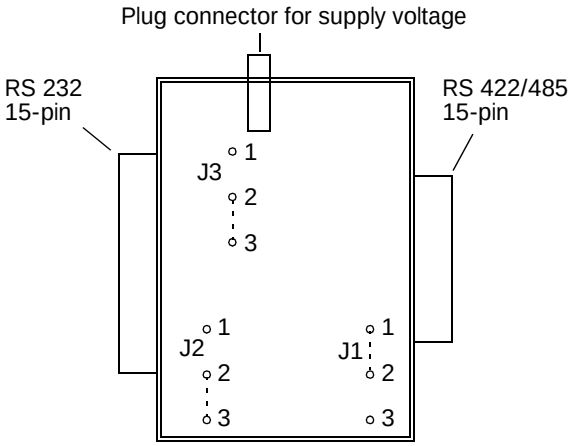
Connection between PC and interface converter



Connection between interface converter and recorder



Jumper assignment in the Datron connector



Notes on the parameterization program PARATOOL L4000M
The item <x> inverse control logic must be activated in the menu item Setup.

5.1.5 Enable speed printout

When the recorder is fitted with a print system, the actual speed is printed out when the recorder is switched on and when the speed is changed. In this parameter, the speed printout is switched active or inactive.

Parameter values:
- "on" Speed printout active
- "off" Speed printout inactive

5.1.6 Enable printout scaling lines

When the recorder is fitted with a print system, four double lines can be written. The first line of the double line is arranged as scaling line. In this parameter, the double line printout is switched active or inactive.

Parameter values:
- "on" Double line printout active
- "off" Double line printout inactive

5.1.7 Spacing scaling lines

In this parameter, the spacing between two double lines is entered in mm.

Parameter values:
- 60 ... 500 in mm steps

5.1.8 Password setting

The password can be defined as four-digit number in the value range from 0000 ... 9999. With a 0000 setting, the password interrogation is not active.

5.2 Channel parameters

The LINAX 4000M can be fitted with up to 4 systems. The corresponding main menu items are activated as a function of the number of the installed measuring systems:
– Channel Blue
– Channel Red
– Channel Green
– Channel Violet

In the main menu item "Channel parameters", the following parameters can be called up as a maximum:

Display shows	Parameters	Definition of param. value by	Display shows	Parameters	Definition of param. value by
tYPE	Signal type	Selection	dirEC	Inversion of the recording direction	Selection
tunit	Temp. unit with temp. measurement	Selection	root	Root extraction	on / off
cdJc .	Cold junction correction	Selection	Li-1	1st limit	Input (float)
Ptcon	Pt 100 connection type	Selection	Li1-F	Function 1st limit	Selection
LEAdr	Lead resistance with 2-wire Pt 100	Selection	Li1do	Output 1st limit	Selection
burn	Pointer position with sensor breakage	Selection	Li1tE	Text line 1st limit	Selection
rn9.Lo	Lower range limit	Input (float)	Li-2	2nd limit	Input (Float)
rn9.Hi	Upper range limit	Input (float)	Li2-F	Function 2nd limit	Selection
ScA.Lo	Lower scaling limit	Input (float)	Li2.do	Output 2nd limit	Selection
ScA.Hi	Upper scaling limit	Input (float)	Li2.tE	Text line 2nd limit	Selection
Unit	Unit scaling	Selection	PAP .L	Setting left paper edge	Keys
rESPt	Attenuation	Input (integer)	PAP .r	Setting right paper edge	Keys

5.2.1 Signal type

After selection of the parameter "Signal type", all signal types listed below can be selected as parameter values. Selection of a signal type also selects the nominal measuring range. The parameters "Lower range limit" and "Upper range limit" are set to the limits of the nominal measuring range.

If the signal type is not changed, also the (pre)set values of the parameters "Lower range limit" and "Upper range limit" remain unchanged.

Measuring types and nominal measuring ranges of the standard version

Display shows	Parameters (measuring type)	Parameter value (nominal measuring range)
oFF	Channel off	off
0 . .20	0 ... 20 mA	0 ... 20 mA
4 . .20	4...20 mA	4...20 mA
,-20b	± 20 mA	_20...20 mA
U-10b	± 10 V	_10...10 V

Measuring types and nominal measuring ranges of the universal version

Display shows	Parameters (measuring type)	Parameter value (nominal measuring range)
oFF	Channel off	off
0 . .20	0 ... 20 mA	0 ... 20 mA
4 . .20	4...20 mA	4...20 mA
,-20b	± 20 mA	_20...20 mA
U-75b	± 75 mV	_75...75 mV
U-20b	± 20 V	_20...20 V
Pt .1	Pt 100 I	_50...150 °C
Pt .11	Pt 100 II	_50...500 °C
tc .b	Thermocouple type B	100...1820 °C
tc .E	Thermocouple type E	0...1000 °C
tc .J	Thermocouple type J	0...1200 °C
tc .H	Thermocouple type K	0...1372 °C
tc .n	Thermocouple type N	0...1300 °C
tc .L	Thermocouple type L	0...900 °C
tc .r	Thermocouple type R	0...1769 °C
tc .S	Thermocouple type S	0...1769 °C
tc .t	Thermocouple type T	0...400 °C
tc .U	Thermocouple type U	0...600 °C

5.2.2 Unit for temperature meausrements

Selection of the temperature unit. This parameter is only displayed when temperature measurement with thermocouples or resistance thermometer was selected at "Signal type".

Parameter:
Unit for temperature measurement

Parameter values:
°C
°F

5.2.3 Cold junction

An internal or external cold junction temperature compensation is used for thermocouple measurements. This parameter is only displayed when a thermocouple was selected at "Signal type".

Parameter:
Cold junction correction

Parameter values:
Internal
0 °C
20 °C
50 °C
60 °C

5.2.4 Pt 100 connection type

For temperature measurement with resistance thermometers, 2-wire or 3-wire connection can be realized as connection type. This parameter is only displayed when Pt 100 I or Pt 100 II was selected at "Signal type".

Parameter:
Pt 100 connection type

Parameter values:
3L 3-wire connection
2L 2-wire connection

5.2.5 Lead resistance Pt 100

External lead balancing is required for connection of resistance thermometers in 2-wire connection. The resistance of the connection leads must be brought up to the selected resistance. The parameter is only displayed when 2-wire connection was selected at "Pt 100 connection type".

Parameter:
Lead resistance with 2-wire Pt 100

Parameter values:
0 Ω
10 Ω
20 Ω
40 Ω

5.2.6 Sensor breakage with Pt 100 and thermocouples

For sensor breakage with Pt 100 and thermocouples, the direction in which the measuring system is to move is defined with this parameter.

Parameter:
Pointer position with sensor breakage

Parameter values:

At.0	With sensor breakage, pointer moves to 0
At.100	With sensor breakage, pointer moves to scale end

5.2.7 Lower and upper range limit

Fixed nominal ranges are preset with the signal type. A split range can be made within the nominal ranges. Thereby, the thus formed measuring range may have a minimum of 20 % and a maximum of 100 % of the nominal range. The lower limit of the measuring range may be between 0 and 80 % of the nominal range.

Parameter:
Lower limit of measuring range
Upper limit of measuring range

Parameter values (float):
–1000 ... +9999

5.2.8 Scaling lines

When a printer system is installed in the recorder, a maximum of four double lines can be written. The first line of the double line is arranged as scaling line. The scaling range is defined in the parameters "Lower limit scaling" and "Upper limit scaling". These two parameters are switched off with parameterized thermocouple or resistance thermometer ranges. For these ranges, it applies: Measuring range = scaling range.

Parameter:
Lower limit scaling
Upper limit scaling

Parameter values (float):
–1000 9999

5.2.9 Unit scaling

In this parameter, it is possible to select predefined units for scaling. Units that are not contained in the listing must be defined with the aid of the parameterizing program PARATOOL L4000M and entered into the recorder via the RS-485 interface.

Parameter:
Unit scaling

Parameter values:

00	Text (entry via PARATOOL L4000M only)		
01	mA	02	A
03	mV	04	V
05	bar	06	mbar
07	Pa	08	kPa
09	°C	10	°F
11	K	12	m^3/h
13	l/sec	14	%
15	‰	16	MW
17	1/min		

5.2.10 Attenuation

An attenuation can be set for instable measured values.

Parameter:
Attenuation

Parameter values:
0 ... 60 (entry in seconds)

5.2.11 Inversion of the recording direction

The direction of travel of the pointer with increasing measured value can be selected in this parameter. The presetting is: With increasing measured value, the pointer moves from the left to the right.

Parameter:
Inversion of the recording direction

Parameter values:

100 - 0	Pointer moves from the right to the left
0 - 100	Pointer moves from the left to the right

5.2.12 Root extraction

The root extraction function can be switched on for all current and voltage measuring ranges.

Parameter:
Root extraction

Parameter values:
on
off

5.2.13 Limits

The LINAX 4000M allows for 2 limits to be set for each measuring channel. High or low can be selected as limit function. The hysteresis is fixed at 2 %. The LINAX 4000M can optionally be fitted with 4 limit relays. These relays can freely be assigned to the limits of the channels. The setting is made in the value units of the measuring range referred to the split range.

5.2.13.1 First/Second limit

Parameter:
1st limit
2nd limit

Parameter values (float):
–1000 ... 9999

5.2.13.2 Limit function

Parameter:
Limit function

Parameter values:
Low
High

5.2.13.3 Relay output for limits

Assignment of the limit to the relays and thus to the binary outputs (DO.).

Parameter:
Output 1st limit
Output 2nd limit

Parameter values:

off	No assignment
DO1	Assignment relay 1
DO2	Assignment relay 2
DO3	Assignment relay 3
DO4	Assignment relay 4

5.2.13.4 Text line printout with limit violation

The parameters Li1.tE and Li2.tE are only displayed when the recorder is fitted with a printer channel. They permit assignment of a text line to the limit. The assigned text line is printed in the case of limit violation.

Parameter:

Li1.tE Text line to limit 1
Li2.tE Text line to limit 2

Parameter values:

0 No assignment
1 ... 8 Text line 1 ... 8

5.2.14 Setting scale ⟷ measuring system

Zero and upper limit of the channel can be made to agree with zero scale and upper limit scale by means of the <↑> and <→> keys.

Parameter:

Setting Beginning of scale
Setting End of scale

Paramter values:

Press <↑> or <→> and calibrate.

5.3 Print intervals

This main menu item is displayed only when the recorder is fitted with a printer channel. The following parameters can be called up in the main menu item "Print intervals":

Display shows	Parameter	Def. of parameter value by
ALPH.1	Text line 1	Selection
ALPH.2	Text line 2	Selection
⋮	⋮	⋮
ALPH.8	Text line 8	Selection
uALUE	Meas. value table of the active channels	Selection
dAtE	Date/time	Selection

5.3.1 Text lines

With cyclic control of the text line printout, the interval times per text line are entered in the parameters "Text line 1" to "Text line 8".

Parameter:

Text line 1
Text line 2
:
Text line 8

Parameter values:

off
15 minutes
30 minute
1 hour
2 hours
3 hours
6 hours
12 hours
24 hours

5.3.2 Measured value table of the active channels

If this parameter is set active (by selection of a print interval), the recorder makes a cyclic printout the measured values of the active channels. The printout is made in the units of the scaling range. The measured value is completed by the time.

Parameter:

Measured value table of the active channels

Parameter values:

off
15 minutes
1 hour
2 hours
3 hours
6 hours
12 hours
24 hours

5.3.3 Date / time

This parameter permits the writing of time and date in certain intervals (mostly once a day). This function saves the daily stamping of the recording strip.

Parameters:

Date/time

Parameter values:

off
15 minutes
1 hour
2 hours
3 hours
6 hours
12 hours
24 hours

5.4 Print sync times

This main menu item is only displayed when the recorder is fitted with a printer channel. The following parameters can be called up in the main menu item "Print sync times":

Display shows	Parameters	Def. of parameter values by
ALPH.1	Text line 1	Time entry
ALPH.2	Text line 2	Time entry
⋮	⋮	⋮
ALPH.8	Text line 8	Time entry
uALUE	Meas. value table of the active channels	Time entry
dAtE	Date/time	Time entry

5.4.1 Text lines

With cyclic control of the text line printout, the times (time points) by which the print interval times of the text lines are orientated are given in the parameters "Text line 1" to "Text line 8".

Parameters:
- Text line 1
- Text line 2
- ⋮
- Text line 8

Parameter values:
- off
- 00:00 time

5.4.2 Measured value table of the active channels

With cyclic control of the printout of the measured value table, the time by which the associated print interval time is orientated is given in the parameter "Measured value table of the active channels".

Parameter:
- Measured value table of the active channels

Parameter values:
- off
- 00:00 time

5.4.3 Date / time

With cyclic control of the printout of the date-time line, the time (time points) by which the associated print interval time is orientated is given in the parameter "Date/time".

Parameter:
- Date/time

Parameter values:
- off
- 00:00 time

5.5 Assignment binary inputs to printer function

This main menu item is only displayed when the recorder is fitted with a printer channel, and when the option binary inputs/outputs has been selected. Two binary inputs are available to externally initiate the recording of event markings or text printout. The following parameters can be called up in the main menu item "Assignment of the binary inputs":

Display shows	Parameters	Def. of parameter values by
Evt .1	Event marker 1	Selection
Evt .2	Event marker 2	Selection
ALPH.1	Text line 1	Selection
ALPH.2	Text line 2	Selection
⋮	⋮	⋮
ALPH.8	Text line 8	Selection
uALUE	Meas. value table of the active channels	Selection
dAtE	Date/time	Selection

5.5.1 Event markers

In addition to the measured values, two event markings can be recorded. The recording of event marker 1 is at 2.5 % of the scale length; event marker 2 is recorded at 5 % of the scale length.

Parameters:
- Event marker 1
- Event marker 2

Parameter values:
- off
- DI 1
- DI 2

5.5.2 Text lines/measured value tables/date-time line

2 binary inputs are available for external initiation of a printout.

Parameters:
- Text line 1
- Text line 2
- ⋮
- Text line 8
- Measured value table of the active channels
- Date/time

Parameter values:
- off
- DI 1
- DI 2

5.6 Special functions

The following parameters can be called up in the main menu item "Special functions":

Display shows	Parameters	Definition of parameter values by
S.tYP	Simulation type	Selection
S.PEr	Simulation period	Entry
in.it	Parameter default setting	Confirm. with <ø> key
P.EnAb	Disable parameterizing	Selection
tESt	Display test	Initiation with <↵> key
L.St	Initiation of listing	Selection
Pr.oFS	Offset calibration printer channel	Confirm. with <→> key
Pr.rng	Upper limit calibr. printer channel	Confirm. with <→> key
tEMP	Display terminal temperature	Pressing of the <↵> key makes for display
PA.LEn	Presetting of paper length	Entry
PA.do	Relay output paper end signalling	Selection
PA.rSt	Remaining length of the recording paper	Display

5.6.1 Simulation

With simulation, test signals are generated in the recorder without the need for connection of a generator to the input terminals. These signals pass through the measured value processing flow and are recorded.

Parameter:
- Simulation type
- Simulation period

Parameter values (simulation type)
- off
- RAMP
- SINE
- STAGE (in 10 % steps)

Parameter values (simulation period):
- 20 ... 2000 seconds

The chart speed is to be set in line with the simulation period.

5.6.2 Parameter default setting

In this menu item, the parameter values of the factory setting are loaded.

Parameter:
- Parameter default setting

Parameter value:
- Press the <↵> key. The parameter values of the default setting are entered.

5.6.3 Disable parameterizing

In this parameter, the parameterizing mode can be blocked. The parameterizing mode can only be made accessible by applying a voltage of 24 V DC to the selected input (DI).

Parameter:
- Disable parameterizing

Parameter values:
- off
- DI 1
- DI 2

5.6.4 Display test

In the display test, all segments of the seven-segment displays are switched on at a time.

Parameter:
- Display test
- Press the <↵> key

Parameter value:

8.8.8.8.8.

5.6.5 Listing initiation

If the recorder is fitted with a print system, this parameter makes for the parameterization to be output on the print system. The duration of the print process can be as long as one hour, depending upon the fitting of the recorder. The printout can be stopped by removing the recording table. The listing printout is not continued when the recording table is re-inserted.

Parameter:
- Listing

Parameter values:
- off
- on

After selection and pressing of "on", the display shows

CASS .

The recorder waits for the recording table to be inserted. After insertion of the recording table, the listing printout starts imnmediately.

5.6.6 Offset/upper value calibration printer channel

Zero and upper limit of the printer channel can be brought to agree with scale zero and scale upper value with the <↑> and <→> keys.

Parameter:
- Offset calibration printer channel
- Upper value caibration printer channel

Parameter values:
- Press the <↑> or <→> key and calibrate.

5.6.7 Cold junction temperature display

The temperature of the internal cold junction is displayed, when the menu item "Display terminal temperature" is selected.

Parameter:
Display of terminal temperature

Parameter values:
Press the <↵> key.
Display, e.g. +35 °C

5.6.8 Paper end monitoring

The paper end is monitored as follows: After loading the recording chart, the paper length must be entered in the parameter PALEn ; hereby, the negative tolerance of the paper length must be considered. The relay contact for signalling of the paper end must be selected in the parameter PAdo . The end-of-paper signal is issued 2 hours before the supply runs out, regardless of the chart speed. The remaining length of the paper can be shown in prameter PArSt .

Parameter:
Paper length

Parameter values:
0.0 ... 32.0

Parameter:
Relay contact for end-of-paper signalling

Parameter values:
off
DO1
DO2
DO3
DO4

Parameter:
Remaining paper length

Parameter value:
Press the <↵> key.
Remaining length of paper is shown

5.7 Error messages

Error messages are shown on the display in the following form:

Exxyy

Where the two digits at the places xx give the cause of the error; the two digits yy are arbitrary.

Display	Error classification
E01..	CPU error
E02..	Error in the internal RAM
E03..	Error in the external RAM
E04..	Clock assembly does not respond
E05..	Time exceeded in data acquisition
E06..	EEPROM on CPU does not respond to read instruction
E07..	EEPROM on channel card does not respond to read instruction
E08..	Checksum of calibration data erroneous
E09..	Checksum of parameterization erroneous
E10..	Writing to EEPROM on channel card not possible
E11..	Writing to EEPROM on CPU card not possible
E12..	Watchdog causes equipment reset
E13..	Printer queue full
E14..	Print head dos not move
E15..	Voltage interruption for clock assembly found
E16..	Speed to high for text printout
E17..	Channel card cannot process selected input type
E18..	Further operation on the recorder control panel is only possible after error message is acknowledged with the <↵> key.

During the parameterization of the recorder, the entered parameter values are subjected to a plausibility check. If unpermissible entries are made, the following error messages are displayed. These messages must be acknowledged; a new entry is possible thereafter.

E-Hi	Value too high
E-Lo	Value too low
E-rng	Range to small

Further error messages:

E9000	Wrong password
E9001	Change of values not possible (with password entry 9999)
E9002	No access to parameterization (blocked via DI)
E9003	Listing stopped due to removal of recording table.

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