
































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1. **Introductory remarks**

The single axis positioning controller of the PS511 series is a plug-in positioning unit for simple adjustments with up to 3 speeds.

Due to the available options, it can be optimally adapted to the respective application.

In the version with program memory, up to 99 programs and 3000 data records, consisting of demand value, number of pieces and auxiliary functions, can be stored.

The very bright, 14 mm high 7-segment displays are easy to read even at a greater distance.

The user is provided with 20 inputs and 12 outputs for various functions.

2. Safety and security

These operating instructions contain instructions intended to ensure safe and proper installation and operation. Should difficulties arise which cannot be solved with the help of the operating instructions, further information should be obtained from the machine manufacturer or supplier.

hejm GmbH is not liable for any personal injury or damage to property caused by improper commissioning, incorrect operation, misunderstandings or errors within this description or in the controller.

hejm GmbH reserves the right to make technical changes to the device or the operating instructions without prior notice. Therefore, deviations in the agreement between the device and the device description cannot be excluded.

Special attention must be paid to hazard warnings in these operating instructions.

This device description must be read carefully before initial operation.

The use of the operating instructions and the commissioning of the device requires the corresponding qualifications of the user.

2.1 Qualified personnel

Commissioning, installation and operation may only be carried out by suitably qualified personnel. The staff shall have a qualification appropriate to their function and activity, such as

- Instruction and obligation to comply with all operational, regional and internal regulations and requirements.
- Training in the use and maintenance of appropriate safety and occupational safety equipment in accordance with safety engineering standards.
- Training in first aid, etc.

2.2 Intended Use

The device has been developed exclusively for use on industrial machines.

Any use in excess of this is considered improper use. The manufacturer is not liable for any resulting damage. The risk is borne solely by the user.

2.3 safety instructions

The following symbols for hazards and particularly important notes are used in the device description:



The danger symbol warns of errors and dangers during commissioning and operation of the control system. This warning signifies an imminent danger to the health of persons and contains special information and instructions as well as commandments and prohibitions for the prevention of personal injury or damage to property.



The Attention symbol indicates a potentially dangerous situation and contains special information and instructions as well as commandments and prohibitions for the prevention of injury and damage.



The Note symbol indicates important and useful information and application tips.

2.4 safety precautions

The device can be operated at 24V DC, or AC power supply. The device must be protected in accordance with the applicable regulations.

The device must not be opened and no screws must be removed from the housing!

If the unit is mounted on a metal plate, it should be grounded.

2.5 Warranty and delivery conditions

The general terms of delivery for products and services of the electrical industry apply exclusively.

The company [hejm](#) grants 2 years warranty on this product after delivery according to the general terms and conditions.

3. Technical data

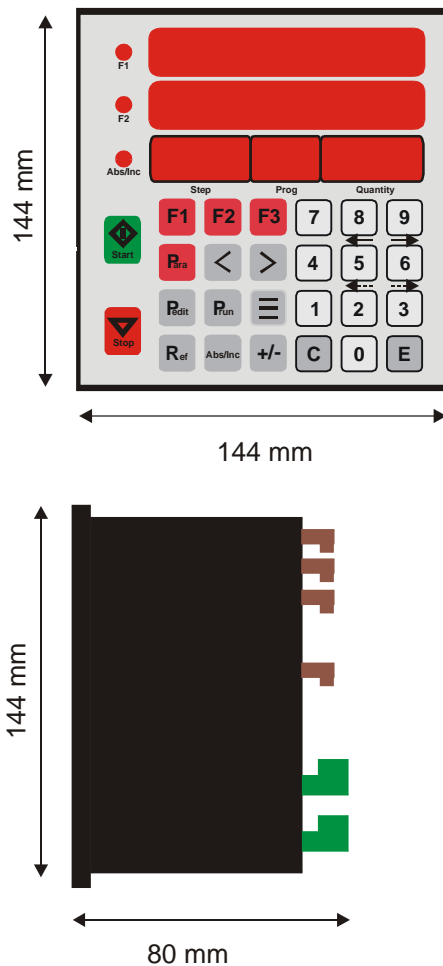


Abb. 1 Dimensions (reduced illustration)

power supply	115 V, or 230V AC \pm 10 %, or 24 V AC/ DC \pm 10 %
current consumption	Max.300 mA without measuring systems and other consumers.
Display	3 x 8 decadal LED display Digit height 14 mm
input signals	20 inputs 0 - 5 V active low - 30 V active high
measurement system	Incremental measuring system with tracks A, B, Z or inverted and 5V DC or 24V DC power supply (SSI on request)
output signals	6 potential-free NO contacts 6 potential-free change-over contacts (max. 230V AC, 2A)
operating temperature	0 – 40 °C
storage temperature	-20 - + 65 °C
air humidity	Max. 90 %, non-condensing
mounting position	Any
degree of protection	Front IP 42
dimensions (mm)	144 x 144x 80 mm ³ (W x H x D) Installation depth with connector

4. Commissioning



Most equipment damage occurs due to faulty wiring and incorrect parameter values. Therefore, commissioning must only be carried out by trained and competent personnel.

4.1 Installation



The device is accommodated in a front panel cut-out 138 x 138 mm and fixed with the aid of the fixing straps.

4.2 Connection



Depending on the model, the device can be equipped with different supply voltages.

In order to avoid personal injury, the respective regulations for protection against accidental contact must therefore be observed.



Electrical cables must be laid in accordance with the relevant local regulations (e.g. VDE). Measuring-, signal- and mains cables must be laid separately.

The shield should be earthed on the side of the device and only in exceptional cases on both sides. If interference should nevertheless occur, the shield can be connected to GND on both sides. Ensure that no ground loops occur.

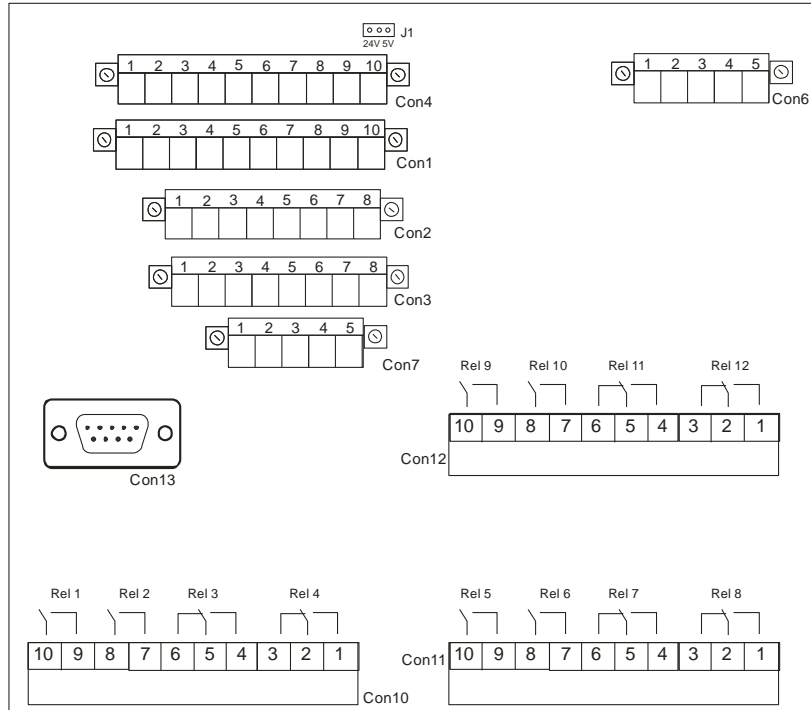
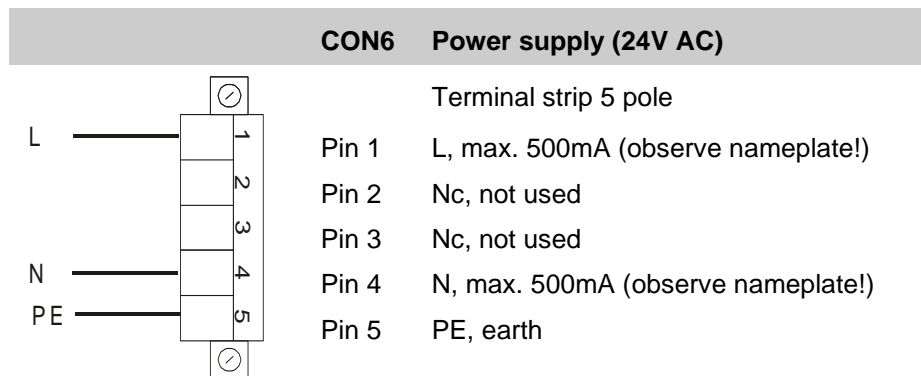
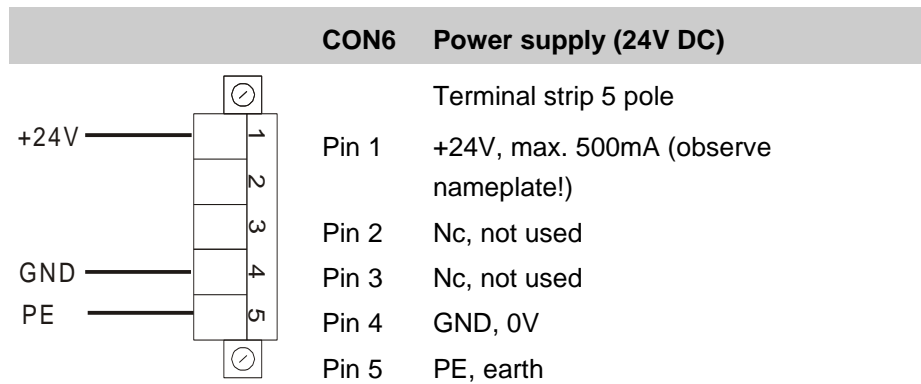


Abb. 2 wiring diagram

Connector and pin assignment





Only connect the measuring system according to the type plate on the device!

Jumpers J1 and J2 must be set to the respective supply before connecting the measuring system!

CON4	Measuring system input
Screw terminal 10 pole	
Pin 1	GND, 0V
Pin 2	+ 24V output max. 150 mA, when jumper J1 on the left with 24V is connected. (see Fig. 2) + 5V output max. 150 mA, when jumper J1 right with 5V is connected. (see Fig. 2)
Pin 3	Track A
Pin 4	Track A/
Pin 5	Track B
Pin 6	Track B/
Pin 7	Track Z
Pin 8	Track Z/
Pin 9	shade
Pin 10	Not used

CON1 Switching inputs 1

Screw terminal 10 pole

Pin1	GND
Pin 2	+ 24V output max. 50 mA
Pin 3	launch
Pin 4	stop
Pin 5	Emergency off - chain, control stops and Estop is shown in the display.
Pin 6	Quantity input and start interlock
Pin 7	reference cam
	Lifting, lowering only when operating mode "roller conveyor" has been activated
Pin 8	Forward, backward only when operating mode "roller conveyor" has been activated
Pin 9	Limit switch Min. (positioning against minimum end position)
Pin 10	Limit switch Max. (positioning against maximum end position)

CON2 Switching inputs 2

Screw terminal 8 pole

Pin1	GND
Pin 2	+ 24V output max. 50 mA
Pin 3	Material stop stops positioning when limit switch is occupied
Pin 4	Safety switch stops positioning when switch is occupied
Pin 5	External block preselection BCD value 10 *
Pin 6	External block preselection BCD value 20 *
Pin 7	External block preselection BCD value 40 *
Pin 8	External block preselection BCD value 80 *

*** The external block preselection is set via parameter P65 in the Parameter level All activated.**

CON3 Switching inputs 3

Screw terminal 8 pole

Pin1	GND
Pin 2	+ 24V output max. 50 mA
Pin 3	Positioning Enable (see P49, All)
Pin 4	Reset/Set (see P47, All)
Pin 5	External block preselection BCD value 1 *
Pin 6	External block preselection BCD value 2 *
Pin 7	External block preselection BCD value 4 *
Pin 8	External block preselection BCD value 8 *

*** The external block preselection is set via parameter P65 in the Parameter level All activated.**

CON7 Analog output (option)

Screw terminal 5 pole

Pin 1	Analog output 1 +/- 10V, 12 Bit (The minimum and maximum output voltage can be set digitally over the entire range)
Pin 2	0V, GNDA
Pin 3	Analog output 2 +/- 10V, 12 Bit (The minimum and maximum output voltage can be set digitally over the entire range)
Pin 4	0V, GNDA
Pin 5	shade

CON10 Switching outputs 1

Screw terminal 10 pole

Pin 1	Positioning in reverse normally open contact (relay 4)
Pin 2	Reverse position common contact (relay 4)
Pin 3	Reverse position normally closed contact (relay 4)
Pin 4	Creep speed make contact (relay 3)
Pin 5	Creep speed common contact (relay 3)
Pin 6	Creep speed normally closed contact (relay 3)
Pin 7	Crawling speed normally open contact (relay 2)
Pin 8	Crawling speed common contact (relay 2)
Pin 9	Fast speed normally open contact (relay 1)
Pin 10	Fast speed common contact (relay 1)

CON11 Switching outputs 2

Screw terminal 10 pole

- | | |
|--------|--|
| Pin 1 | Auxiliary function 2, or lowering normally open contact (relay 8)
(Lowering function only active when the roller conveyor operating mode is active) |
| Pin 2 | Auxiliary function 2, or lowering common contact (relay 8)
(Lowering function only active when the roller conveyor operating mode is active) |
| Pin 3 | Auxiliary function 2, or lowering normally closed contact (relay 8)
(Lowering function only active when the roller conveyor operating mode is active) |
| Pin 4 | Auxiliary function 1, or lifting normally open contact (relay 7)
(Lifting function only active when roller conveyor operating mode is active) |
| Pin 5 | Auxiliary function 1, or lifting common contact (relay 7)
(Lifting function only active when roller conveyor operating mode is active) |
| Pin 6 | Auxiliary function 1, or lifting normally closed contact (relay 7)
(Lifting function only active when roller conveyor operating mode is active) |
| Pin 7 | Position reached normally open contact (relay 6) |
| Pin 8 | Position reached common contact (relay 6) |
| Pin 9 | Brake normally open contact (relay 5) |
| Pin 10 | Brake common contact (relay 5) |

CON12 Switching outputs 3

Screw terminal 10 pole

Pin 1 Program end normally open contact (relay 12)

Pin 2 Program End Common (Relay 12)

Pin 3 Program end normally closed contact (relay 12)

Pin 4 Auxiliary function 4, or retraction, normally open contact (relay 11)

(Retraction function only active when the roller conveyor operating mode is active)

Pin 5 Auxiliary function 4, or retraction, common contact (relay 11)

(Retraction function only active when the roller conveyor operating mode is active)

Pin 6 Auxiliary function 4, or retraction, normally closed contact (relay 11)

(Retraction function only active when the roller conveyor operating mode is active)

Pin 7 Auxiliary function 3, or delete retraction, normally open contact (relay 10)

(Delete retraction function only active when roller conveyor operating mode is active)

Pin 8 Auxiliary function 3, or delete retraction, common contact (relay 10)

(Delete retraction function only active when roller conveyor operating mode is active)

Pin 9 Number of pieces reached normally open contact (relay 9)

Pin 10 Number of pieces reached common contact (relay 9)

CON13 RS232

9 pole Sub-D socket

Pin 1	Reserved, do not occupy!
Pin 2	RxD
Pin 3	TxD
Pin 4	Reserved, do not occupy!
Pin 5	GND
Pin 6	Reserved, do not occupy!
Pin 7	Reserved, do not occupy!
Pin 8	Reserved, do not occupy!
Pin 9	Reserved, do not occupy!

4.3 Keyboard and front panel

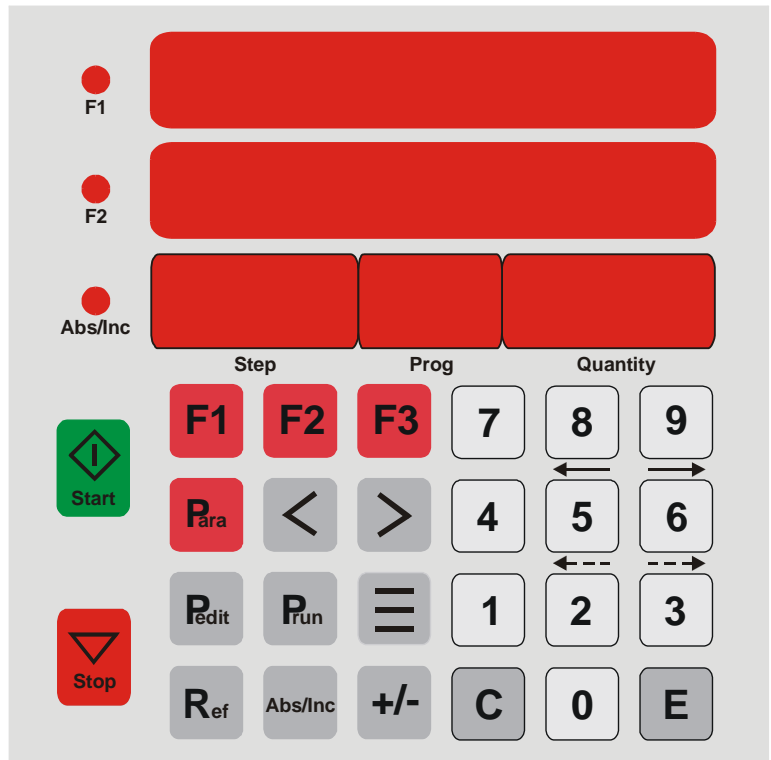


Abb. 3 front panel

4.3.1 Displays


The upper display is used to display the actual value as well as the parameter value in the parameter levels.

The middle display shows the demand value and the parameter number in the parameter input.


The lower windows are used to display the quantity, positioning mode, program number and data record number.


4.3.2 Key function


1. Key **0 - 9** Numeric keys for data input.


2. The key  is used to open the parameter level, to confirm an input value in the function level and when entering programs.


Outside the parameter level and from Program Edit mode, this key can be used to switch between automatic and manual mode.

3. The key  deletes an input value.



4. The key  changes the sign of an input value.


5. The key  is used to activate the quantity number input.


6. The key  opens and closes the reference value level.


7. The key  opens a program in run mode.

8. The key  opens a program in editor mode.

9. The and  keys  are used to switch between the individual programs, between the individual data sets in editor mode, to select the parameter level and to scroll within the parameter level.

10. The key  is used to switch on various special functions. For example, to enter the auxiliary functions in Program Edit.

11. The key  activates and deactivates the function levels.

10 The key  is used to switch between absolute and incremental dimensions.

4.4 Parameters and function levels

4.4.1 Input of parameters, change of device functions



When changing control and setting parameters, the effects on the overall system must be taken into account.



Changes to the parameter settings can lead to malfunctions or to standstill or failure. Therefore, changes to the parameter settings must only be carried out by qualified personnel.




The parameters are protected by a security code to prevent unintentional changes.


This can be selected by the machine manufacturer himself.

The device provides 6 levels, 4 of which are for parameter input and 2 for device functions.

1. Function level calibration value
2. Cut optimization parameter function
3. General parameter level
4. Axis parameters
5. Manufacturer level
6. Function Test








The function or parameter input is activated and deactivated again by pressing the key. 


Press the key to change  between the levels.

To open a level, the  (Enter) key is used, which is also used to confirm an input value.

Example:

Modify parameter P 5 in parameter level ACH1 (axis parameter):

1. Press the key  (upper display shows ref)
2. Press the key 4 times  (the upper display shows ACH1).
3. Press the key  (upper display shows the current parameter value, middle display P 0).
4. Press the key  5 times (upper display shows the current parameter value, middle display P 5).
5. Overwrite the parameter value using the 10 key keyboard.
6. Confirm the entry by pressing the key 
7. Exit the level by pressing the  button (upper display shows ACH1).
8. Exit the parameter input by pressing the  key. (upper display shows actual value, middle display demand value, lower display quantity)

If the parameter level is protected by a code, the corresponding code must first be entered after point 2 and confirmed with the  key.

4.4.2 Parameters and function levels



The parameters listed below are all according to the pattern

*Parameter number Designation [Unit/ minimum, maximum value]
Parameter description*

are listed.

Parameters in which P05/ACH1 is entered as the unit refer to the unit defined in parameter P05/ACH1.

Parameters that are assigned the index ro (read only) can only be read.

Parameter level All:

P00 *Number of displayed axes [piece/ 1,3]*

Contains the number of axes to be displayed.
Always set to one here.

P01 *Device identification [ro/----- ,-----]*

Contains the device ID 10 (PS312P)

P02 *Software version [ro/----- ,-----]*

Current software version of the device.

P03 *Customer for special devices [ro/----- ,-----]*

P04 *Difference cam Index [ro(P05)/ -----,-----]*

This parameter simplifies the mechanical adjustment of the rotary encoder and the reference cam.

It shows the distance between the homing cam and the index pulse of the measuring system in the desired resolution P05.


This difference should be as large as possible.

A difference that is too small can lead to problems with automatic referencing.

Parameter level All:

P05 *Type of referencing, reference run [Mode/ 0,2]*

This parameter can be used to set various modes for calibrating and referencing the machine.

Setting	Function
0	The device can be calibrated via the  front panel as well as via the parameter level "ref".
1	The device is calibrated via an automatic reference run. The actual value can also be changed manually via the parameter level "ref".
2	The device can only be calibrated via the parameter level "ref".



This parameter may only be set to 1 when the machine is also equipped for such a function on the hardware side, otherwise damage to the machine may occur.

P06 *Operating mode (Mode/ 0,1)*

Setting	Function
0	Standard operating mode. The auxiliary function outputs via relays 7, 8, 10, 11 are activated. These outputs can be assigned to any data set in program mode. See Chapter, Entering Help Functions .
1	Operating mode Roller conveyor Here the relays 7, 8, 10,11 are assigned to roller conveyor specific functions, such as forward, retract, lift, lower and various functions, such as "free travel" are activated.

Parameter level All:

P10 *Minimum frequency for analog output (Hz / 0.300000 J)*

Only with option additional analog output!

The device has a 12 bit +/- 10V analog output, which can be used for a voltage proportional to the frequency of the measuring system when the "Enable analog output" input is active.

A minimum frequency can be entered here, below which controls the analog output 0V.

P11 *Maximum frequency for analog output (Hz / 0.300000 J)*

Only with option additional analog output!

The device has a 12 bit +/- 10V analog output, which can be used for a voltage proportional to the frequency of the measuring system when the "Enable analog output" input is active.

The maximum frequency can be entered here, above which the analog output is set to its maximum voltage.

P26 *Logic of the switching outputs 1 [binary code/ 0,255]*

The function of the relay outputs 1 to 8 can be changed via this parameter.

Outputs 1 to 8 can be inverted.

Since the device has 8 internal switching outputs on the Con 10 and Con 11 connectors, up to 256 different combinations can occur.

Example:

The following table explains this process in more detail.

Parameter level All:

output	0	1	2	3	4	5	6	7
function	S	I	S	S	S	I	S	S
binary value	0	1	0	0	0	1	0	0
decimal values	1	2	4	8	16	32	64	128

S = Standard (binary value 0)

I = Inverted (binary value 1)

The following outputs are used with this software:

Output 0 = Not assigned - BCD Code 1

Output 1 = Not assigned - BCD Code 2

Output 2 = Controller enable - BCD Code 4

Output 3 = Not assigned - BCD Code 8

Output 4 = Brake - BCD Code 16

Output 5 = Position reached - BCD Code 32

Output 6 = Lifting - BCD Code 64

Output 7 = Lower - BCD Code 128

Proceed as follows to calculate the parameter value.

First the decimal value of each output is calculated with

Output x = binary value x * decimal value x

For example:

Output 0 = 0 * 1 = 0

Output 1 = 1 * 2 = 2

Output 2 = 0 * 4 = 0 etc.

Then the results of all multiplications are added and entered into the parameter.

Parameter level All:

P27 *Logic of the switching outputs 2 [binary code/ 0,255]*

The function of the relay outputs 9 to 12 can be controlled via this parameter can be inverted.

The procedure corresponds to the one shown in parameter P26.

P28 *Logic of the switching outputs 3 [binary code/ 0,15]*

Only for devices with more than 16 switching outputs.

P29 *Logic of the switching inputs [binary code/ 0,255]*

In mechanical engineering, both normally open and normally closed contacts are used as electrical switches.

In order to adapt the device quickly to any hardware, the switching behaviour of the inputs can be determined with this parameter.

A 1 means that the respective input is connected to a normally open contact, a 0 that the input is connected to a normally closed contact.

Since the device has 8 switching inputs on one connector internally, up to 256 different combinations can occur.

Example:

The following table explains this process in more detail.

entrance	0	1	2	3	4	5	6	7
switches	S	S	Ö	Ö/S	Ö/S	S	Ö/S	Ö/S
binary value	1	1	0	0/1	0/1	1	0/1	0/1
decimal values	1	2	4	8	16	32	64	128

S = Normally open contact (binary value 1)

NC = Normally closed (binary value 0)

The following inputs are used with this software:

Parameter level All:

Input 0 = Start - BCD Code 1

Input 1 = Stop - BCD Code 2

Input 2 = Emergency Stop - BCD Code 4

Input 3 = Quantity - BCD Code 8

Input 4 = up/down, reference cam push-button - BCD Code 16

Input 5 = Forward/Back button- BCD Code 32

Input 6 = Limit switch front/bottom - BCD Code 64

Input 7 = Limit switch rear/top - BCD Code 128

Proceed as follows to calculate the parameter value.

First the decimal value of each input is calculated with

Input x = Binary value x * Decimal value x

Well

Input 0 = 1 * 1 = 1

Input 1 = 1 * 2 = 2

Input 2 = 0 * 4 = 0 etc.

Then the results of all multiplications are added and entered into the parameter.

Parameter level All:

P30 *Logic of the switching inputs 2 [binary code/ 0,255]*

The function of the parameter corresponds to that of parameter P30, but refers to an internal connector with 4 inputs.

The following inputs are used with this software:

Input 0 = Material Stop - BCD Code1

Input 1 = Safety switch - BCD Code 2

Input 2 = BCD switch, valence 10 - BCD Code 4

Input 3 = BCD switch, valence 20 - BCD Code 8

Input 4 = BCD switch, valence 40 - BCD Code 10

Input 5 = BCD switch, value 80 - BCD Code 20

Input 6 = Not assigned - BCD Code 40

Input 7 = Not assigned - BCD Code 80

P31 *Logic of the switching inputs 3 [binary code/ 0,15]*

The function of the parameter corresponds to that of parameter P30, but refers to an internal connector with 4 inputs.

The following inputs are used with this software:

Input 0 =BCD switch, valence 1 - BCD Code 1

Input 1 = BCD switch, value 2 - BCD Code 2

Input 2 =BCD switch, value 4 - BCD Code 4

Input 3 = BCD switch, valence 8 - BCD Code 8

P33 *Switching behaviour of the encoder inputs*

[Switching behaviour/ 0.1]

Setting	Function
0	Encoder signals switch to GND (e.g. open Collector)
1	Encoder signals switch to plus (e.g. push pull)

Parameter level All:

P34 *Switching characteristics of the switching inputs [Switching characteristics/ 0.1]*

Inputs always switch against + 24V.

P35 *Function of the F3 key [Function/ 0,3]*

Setting	function
0	key toggles between inch and mm.
1	Inch/mm switchover locked
2	See setting 0
3	Control is activated for frequency measurement.
5	The F3 key activates the dimension error compensation editor.

P36 *Time delay for new positioning [s/ 0.00, 60.00]*

The device can be operated within a program in a fully automatic positioning mode.

This means that the controller positions to the next demand value when the piece count input is active.

With this parameter the positioning process can be delayed by the set time.

P37 *Wipe time for output position reached [s/ 0.00, 2.50]*

This parameter contains the time during which the output position reached is present.

When this parameter is set to 0, the output remains static.

Parameter level All:

P38 *Wipe time for output number of pieces reached [s/ 0.00, 2.50]*

The output Number of pieces reached is active for the set time, if number of pieces 0 appears in the number of pieces window.

P39 *Wipe time for output program end [s/ 0.00, 2.50]*

The output Program end is active for the set time when the last data set has been processed.

When a 0.00 is entered here, the program end output is active until a new program is started.

P40 *Automatic retract function [various modes/ 0,2]*

When the external track input is activated, various special functions can be enabled with this parameter.

Setting	Function
0	No special functions active
1	Valve arm return or motor retract is activated when the piece input is active.
2	Valve arm return or motor retract is activated when the piece input is active, then deactivated again.
3	Same as setting 2
4	When the arm forward button is pressed, the number of pieces is automatically decremented by one.

Parameter level All:

P41 *Dimension compensation [off,on/ 0,1]*

Setting	Function
0	Dimension compensation not active.
1	Dimension compensation is activated. The controller now displays the actual value calculated with the dimensional compensation values.

Note: The dimensional compensation in this software is only available for positive values.

P42 *Code for parameter level [7 Decimal number/ 0, 9999999]*

The parameter values can be protected against overwriting by entering a code.

The input of parameter values is then only possible after this code can be entered.

P43 *Code for saw blade level [7 Decimal number/ 0, 9999999]*

The saw blade thickness can be protected against overwriting by entering a code.

The entry of a new saw blade thickness is then only possible after this code can be entered.

Parameter level All:

P44 *Code for calibration level [7 decimal number/ 0, 9999999]*

The device can be protected against calibration by entering a code.

Calibration to a new value is then only possible after entering this code.

P45 *Function of the keys F1, F2 [Function/ x, x]*

Without function in the standard software.

P46 *Output Position reached in special function[Output/ 0, 255]*

In this software version only the output position reached can work in special function.

When this parameter is set to 0, the position reached output switches in program mode and in single mode.

When the parameter is set to 4, the position reached output switches only in program mode and not in single mode.

In manual mode the position reached signal is always switched off.

Parameter level All:

P47 *Function of the Set/Reset input [Function/ 0, 3].*

The function of the Set/Reset input at Con3 is set via this parameter.

Setting	Function
0	Static reset The actual value of the control is set to 0 as long as the input is active.
1	Set static The actual value of the controller is set to the calibration value (P02/Ach1) as long as the input is active.
2	Reset flank triggered The actual value of the controller is set to 0 once if the input is switched.
3	Set flank triggered The actual value of the controller is set once to the calibration value (P02/Ach1) if the input is switched.

P48 *Piece counter function [Function/ 0, 1]*

Setting	Function
0	The piece counter is decremented via the external piece count input.
1	The piece counter is decremented by the output "Position reached".

Parameter level All:

P49 *Selection of the positioning enable input [Input/0, 2]*

The controller has two inputs, which can be used for positioning can be released.

Setting Selected input

0 The quantity input must be occupied in order for positioning to be started.

1 The Positioning Enable input must be occupied that positioning can be started.

2 Both inputs must be occupied so that positioning can be started.

P50 *Function of the external stop input [Function/0, 1]*

Setting Function

0 Stop input edge-triggered.

Stop is only executed once if the input is occupied.

1 Stop input static.

Stop remains active as long as the input is occupied.

A restart is not possible.

Parameter level All:

P60 *Number of programs [Number/ 1, 99]*

(only with option program memory)

The operator can use this parameter to determine how many programs he will need in the future.

With the program memory option, the device has a memory area of 3000 data records.

These data records are distributed to the number of programs entered here.

The maximum number of data records per program is 999.

If a number < 3 is entered in parameter P60, the remaining memory area is not used.



Changing this parameter at a later time leads to a shift of already stored data sets, with the result that already stored programs are lost.

P61 *Program sequence [Sequence/ 0, 3]*

Setting	Function
0	data record in the program is always stored as an absolute dimension, even when the device is set to the incremental dimension function. All other data records are stored as chain dimensions.
1	The first data record is stored as it appears on the display.
2	The program is not exited at the end of the program, but starts from the beginning.
3	Functions as for setting 1 and 3 combined.

Parameter level All:

P62 *Current program number [number of programs/ 0, 99]*

This parameter is used to select a program for serial reading, writing and processing via the RS232 interface.

P63 *Current status display of the program demand values [ro/ 0, 1].*

0 Current demand value is an absolute dimension

1 Current nominal value is a incremental dimension

P64 *End position monitoring during program input [inactive, active/ 0, 1]*

0 End position monitoring switched off

1 End position monitoring switched on

If a program with incremental dimensions is entered, the program is checked for a violation of the software end positions after pressing the Pedit key.

If the software end positions are exceeded or undershot, the program jumps to the data record that belongs to the position where the violation occurs.

Parameter level All:

P65 *External block selection [Mode/ 0,2]*

An external BCD switch can be connected to the device, via which the data records of an active program can be selected.

Setting	Function
0	External block selection switched off
1	External block selection active. When 00 is set on the BCD switch, the program is processed as in standard mode.
2	External block selection active. When 00 is set on the BCD switch, the start is locked.

Parameter level All:

P66 *Tolerance window Mode [Mode/ 0,5]*

Here the function of the tolerance window and the behaviour of the control within the tolerance window can be set.

Setting	Function
0	<p>Within the tolerance window, not the actual value but the "demand value" is displayed in the actual value window.</p> <p>The Position reached output switches when the displayed process value and demand value are equal.</p>
1	<p>The actual value is always displayed.</p> <p>The Position reached output switches when the actual value is in the range of Target value \pm Tolerance window.</p>
2	<p>The Position reached output switches again if a start positioning is triggered within the tolerance window. (Only if output position reached is set to wiping)</p> <p>Display of the tolerance window like mode 0.</p>
3	<p>The Position reached output switches again if a start positioning is triggered within the tolerance window. (Only if output position reached is set to wiping)</p> <p>Display of the tolerance window like mode 1.</p>
4	<p>A forced loop is started if a start positioning is triggered within the tolerance window.</p> <p>Display of the tolerance window like mode 0.</p>
5	<p>A forced loop is started if a start is triggered within the tolerance window.</p> <p>Display of the tolerance window like mode 1.</p>

Parameter level All:

P68 *Internal start button interlock [inactive, active/ 0.1]*

The front start button can be deactivated.

Setting	Function
0	 active
1	 inactive

P90 *Serial device address [number/ 11,99]*

Device address for serial communication.

Device numbers such as 20,30,40,...90 are intended for device groups with this serial protocol and must not be set, as the device will then not work properly.

P91 *Baud rate [baud/ 0.3]*

The following baud rates are available.

Baud	rate/baud setting
0	4800
1	9600
2	19200
3	38400

Parameter level All:

P94 *Mask for serial addressing of the outputs [Outputs/ 0,255]*

The controller can be connected with a PC or PLC via the integrated serial interface.

Outputs can be set or reset via the serial interface.

The mask is used to determine which output can be addressed via the serial interface or which output retains its function programmed in the device.

The value of the outputs is as follows:

exit	decimal	hexadecimal value	binary value
Quantity reached	1	0x01	0000 0001
Program end	2	0x02	0000 0010
Position reached	4	0x04	0000 0100
Arm back	8	0x08	0000 1000
Arm in front	16	0x10	0001 0000
Arm down	32	0x20	0010 0000
Arm open	64	0x40	0100 0000
clamping	128	0x80	1000 0000

Example:

The outputs Arm up and Arm down should be accessible via the serial interface, all other outputs should keep their function.

Then in parameter 64 (for arm up) plus 32 (for arm down) = 96

These outputs can then only be addressed via the serial interface with parameter P95.

Parameter level All:

P95 *Outputs via serial interface [off, on/ 0,255]*

When a mask P94 is set for the serial interface, an output can be set or reset via this parameter.

To set the output arm up to, for example, 64 would have to be entered in this parameter. When the output Arm down is additionally set, a 96 would have to be entered here.

By entering 0, both outputs would be reset.

P98 *With/without program [With, without program/ 0,1]*

The PS511P controller is also available as a single controller without program (PS511), but has the same software version.

With a single control, the value 1 must be entered here. This locks the P keys to prevent incorrect operation.

P99 *Fair/continuous operation [normal,continuous operation/ 0,1]*

This parameter can be set to 1 for demonstration or test purposes.

This automatically decrements the number of pieces in program mode and simulates a fully automatic sequence.

After the end of the program, the program is restarted fully automatically.

Parameter level axis1:

P00 *Actual value [P05, ro/ -----,-----]*

Current actual value for reading out via the serial interface.

P01 *Demand value [P05, ro/ -----,-----]*

Demand value for readout via the serial interface.

P02 *Calibration value [P05/ -999999,999999]*

The calibration value corresponds to the value stored in the "rEF" level.

P03 *Software limit switch Min. [P05/ -999999, 999999]*

Contains the minimum demand value to be accepted by the controller when an input is made.

P04 *Software limit switch Max. [P05/ -999999, 999999]*

Contains the maximum demand value that the controller is to accept when an input is made.

Parameter level axis1:

In order for the counter to be set to different mechanical conditions such as gear, spindle stroke, etc., it requires two parameters.

1. any distance in the desired unit and resolution (P05).
2. the number of pulses transmitted from the measuring system to the counter when moving this section (P06).

Only if these specifications are entered in P05 and P06 without rounding errors will the counter be able to position error-free over the entire range.

P05 *Distance for factor calculation [any unit of length/ 1, 10000]*

Contains any distance. The input is made in the desired resolution.

A distance should be selected in which an integer number of pulses is transmitted by the measuring system.

The number of pulses should be equal to or greater than the selected distance.

P06 *Pulses / distance [resolution of the measuring system/ 1, 32000]*

Number of pulses per distance specified in P05 (the factor is automatically calculated from P05 and P06).

Example 1: The measuring system used transmits 100 pulses to the counter over a distance of 1.00 mm. Demand values, actual values etc. are to be transmitted in 1/100 mm. Therefore each impulse received from the measuring system must be display in the actual value. Consequently, P05 and P06 must be set to the same value (e.g. 0.01, 1 or 0.10,10 or 1.00, 100).

Example 2: Output data as in example 1.

However, demand values and actual values should only be resolved with one digit after the decimal point, i.e. in 1/10 mm.

Parameter level axis1:

This means that 10 pulses are transmitted from the measuring system to the meter over a distance of 0.1 mm. Consequently, P05 must be set smaller than P06 by a factor of 10 (e.g. 0.1, 10 or 1.0,100, or 10.0, 1000).

Example 3: A machine with spindle drive has the following key data: spindle pitch 5.0 mm / rotary encoder with 20 pulses/revolution. Demand values and actual values should be displayed here with one digit after the decimal point, i.e. in 1/10 mm. This would mean that 20 pulses are transmitted from the measuring system to the meter over a distance of 5.0 mm.

With parameter P25/Ach1 the resolution of the measuring system can be increased by switching on the corresponding edge evaluation.

When P25 is set to 4, in example 3, 80 pulses per revolution of the measuring system would be evaluated by the counter.

Consequently, P05 must be set to 0.5 and P06 to 80.

If settings are to be made in inch, P05 must be entered in inch.

The conversion of parameter P05 from mm to inch can also be done via key F3, when parameter P35/All is set to 0.

The decimal point is then automatically shifted 2 digits to the left and all length-relevant parameters are converted to inches.

Parameter level axis1:

P08 *No. of automatic start repetitions [piece/ 0, 255]*

If the actual value is outside the demand value +/- tolerance window after completion of a positioning, the positioning is automatically started again to the same demand value. This is repeated until the actual value lies within the tolerance window or the value stored here is reached.

P09 *Tolerance window [P05/ 0, 255]*

See also parameter P66/All.

If, after positioning, the actual value is within the range demand value \pm tolerance window, the demand value is displayed instead of the actual value when parameter P66/All is set to 0. (P00 = P01).

In the background, the control for the calculation continues to work with the real actual value.

P10 *Dwell time after destination reached or Stop [x.xx sec/ 0.00, 2.00]*

After this time has elapsed, the tolerance window is compared to the actual value; if required, a start repetition is performed when P08/Ach1 > 0.

P11 *Creep speed [P05/ 0, 99999999]*

Here the distance is set before reaching the target position, within which the control is to move at creep speed.

P12 *Crawling speed [P05/ 0, 99999999]*

Here the distance is set before reaching the target position, within which the controller is to drive with crawling speed.

P11 must be greater than or equal to P12.



Parameter level axis1:

P13 *Correction stop 1 Direction Max [P05/ 0, 99999999]*

Here the position is set before reaching the target position at which the controller switches off the travel signals. This only applies when positioning to larger demand values.

P14 *Correction stop 2 direction Min [P05/ 0, 99999999]*

Here the position is set before reaching the target position at which the controller switches off the travel signals. This only applies when positioning to smaller demand values.

P15 *Relay switching time on stop [seconds/ 0.001, 10.000]*

If a stop is triggered by pressing the stop button, releasing the hand buttons or driving over the end position, the relays are switched off one after the other in this time pattern.

P17 *Dwell time with spindle compensation [x.xx sec/ 0, 20.00]*

Time during which the motor remains at the reversal point of the loop before positioning to the target point is started.

When P17 is set to 0, the spindle compensation function is switched off.

P18 *Traverse path for spindle compensation [P05/-999999, 999999]*

The spindle compensates the distance by which the nominal value is traversed.

When P18 is entered negatively, the spindle compensation is moved to smaller actual values during positioning.

When P18 is entered positively, the spindle compensation is moved to higher actual values during positioning.

Parameter level axis1:

P25 *Pulse evaluation [Edge evaluation/ 0, 4]*

1 = single edge evaluation
2 = double edge evaluation
4 = four edge evaluation

P26 *Reversal of counting direction [direction/ 0, 1]*

Changing this value switches the counting direction of the counter.

0 = forward
1 = backward

P35 *Dead man range to smaller values [P05/ -99999,9999999]*

For safety reasons, many applications require continuous actuation of the start button within certain ranges (dead man's range). When the start button is released, the device stops positioning. In the range of the software limit switch minimum, up to the value stored for this, the start button or the start input must be pressed. However, this only applies to positioning to smaller actual values. If you are driving to higher actual values, then the start button does not have to be permanently assigned. (Leaving the dead man's area)

P36 *Dead man range to larger values [P05/ -99999,9999999]*

For safety reasons, many applications require continuous actuation of the start button within certain ranges (dead man's range). When the start button is released, the device stops positioning. In the range of the software limit switch maximum, up to the value stored for it, the start button or the start input must be pressed. However, this only applies to positioning to larger actual values. If you are driving in the direction of smaller actual values, then the start button does not have to be permanently assigned. (Leaving the dead man's area)

Parameter level axis1:

P37 *Reversal of the manual keys [standard, inverted/ 0, 1]*

Here the positioning direction of the motor can be reversed when the hand buttons are pressed.

P38 *Clamping delay time [seconds/ 0.01,2.50]*

If the mechanical clamp is held in position, it must first open securely when repositioned before the motor can reposition.

This time can be entered here.

P39 *Free travel distance [P05/ 0.10000]*

The device can be used both for length stops with motor-driven and pneumatic retraction.

Here you can enter the distance that the motor travels during motorised retraction.

When a 0 is entered in this parameter, the switching outputs for the hydraulic retraction are active if parameter P06, All is set to 1.

The free travel functions can be activated both in single and program mode.

In program mode, parameter P46 in parameter level ACH1 must be set to 0, "Manual mode".

Parameter level axis1:

P40 *Decimal point [decimal place/ 0, 6]*

This parameter sets the decimal point within the display.

0 = decimal point switched off

1 = one decimal place etc.

The setting of the decimal point has no influence on the resolution of the display.

This is only done with parameters P05 and P06.

P41 *Display brightness [----/ 0, 15]*

With this parameter the brightness of the 7-segment display can be adjusted.

Small values decrease, large values increase the brightness.

P42 *Positioning mode default setting [Positioning mode/ 0, 1]*

The device can work in absolute or incremental positioning mode.

Here you can make a default setting, in which mode the device should work.

0 absolute positioning mode

1 relative positioning mode

Parameter level axis1:

P43 *Incremental function* [Modes/ 0, 1]

Different applications require different incremental functions.

For successive incremental positioning, either the actual value can be set to 0 (actual value mode), or a dimension error that occurred in the previous positioning can be offset against the next positioning (demand value mode).

The actual value mode is used, for example, for saws and the demand value mode for punches.

0	actual value mode
1	demand value mode

P44 *Saw blade thickness* [P05/ -99999999,9999999]

If the saw blade is used in combination with saw feeders in relative mode, the thickness of the saw blade must always be added to the positioning distance in order to obtain an exact material length.

The saw blade thickness is stored in this parameter.

To change this parameter quickly, the Saw Blade (SabL) function level can be used.

Parameter level axis1:

P45 *Park position teaching active [inactive/active/ 0,1]*

No function here.

P46 *Manual/Automatic mode [manual/automatic/ 0,1]*

With this parameter a fully automatic program sequence can be activated.

If this sequence is activated and a program is selected, then the next demand value is automatically positioned when the piece count input is activated.

P47 *Offset for parking position [P05/ -999999,999999]*

A parking position can be transferred to the device via the teach button or in the program input.

This parking position is approached after the end of the program.

The parking position is then calculated from the value entered or stored via the teach button + offset.

Parameter level axis1:

P48 **Position control** [off,on/0,1]

Not for devices with switching outputs.

P49 *Reaction time of the position controller (ms / 1, 250)*

Not for devices with switching outputs.

P50 *Position window of the position controller (P05 / 0, +50000)*

Not for devices with switching outputs.

P51 *Mode of the position controller (Mode / 0, 1)*

Not for devices with switching outputs.

Parameter level axis1:



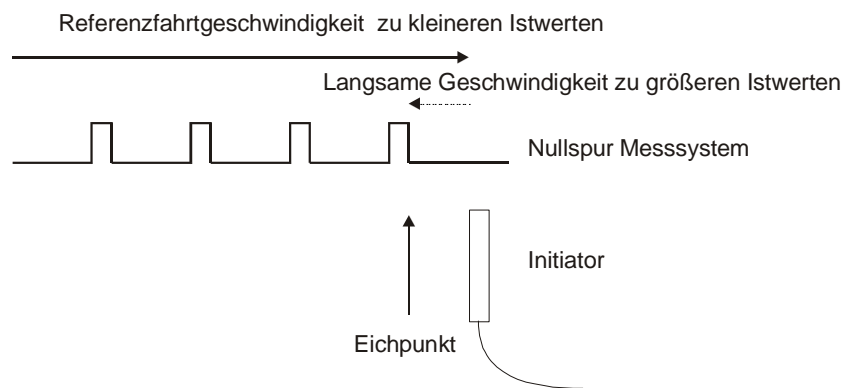
Parameters P53 to P56 are only active when P05/ALL is set to 1.

P53 Reference direction of travel [direction/ 0, 1]

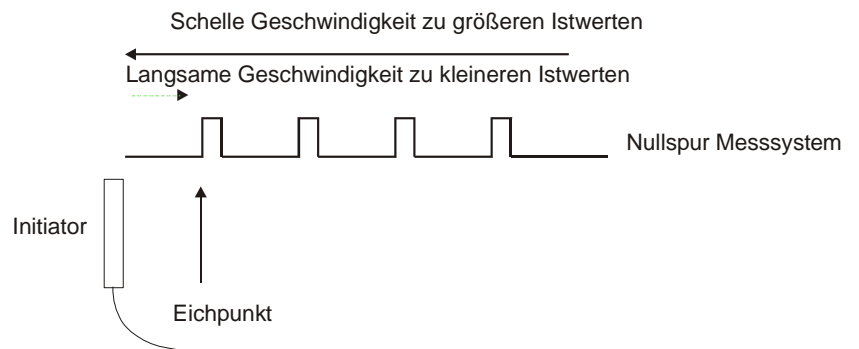
0 = The reference run is run against smaller actual values.

1 = The reference run is run against larger actual values.

Mode 0:



Fashion 1:



Parameter level axis1:

P54 *Index pulse switches at [edge/ 0, 1].*

0 = falling edge

1 = rising edge

P55 *Offset for homing (P05 / -999999, 9999999]*

If the index pulse is reached during homing after leaving the reference cam, then the new actual value is calculated as follows

Actual value P00 = calibration value + offset P55

P56 *Parking position after homing [P05/ / -999999, 9999999]*

After completion of the homing run, the positioning unit runs to the parking position specified here.

If the motor is to remain in its position after completion of the reference run, the calibration value + offset must be entered here.

P57 *Timer for rotary encoder monitoring [x.xxx sec]*

During this time interval at least two pulses must be counted by the measuring system during positioning, otherwise the positioning is stopped with error message.

With setting "0" the monitoring is switched off.

P59 *Reference speed [speed/ 0, 2] [speed/ 0, 2]*

Here the speed at which the reference run is made towards the cam can be set.

Setting	speed
0	creep speed
1	crawling speed
2	rapid traverse speed

Parameter level axis1:

P61 *Maximum frequency of the measuring system (Hz / 1, 300000)*

This parameter is used to determine the speed of the connected Measuring system.

This parameter is used for various functions in conjunction with the analog output.

P62 *Pulse measurement time for velocity control (ms / 0, 1000.0)*

No function here.

P70 *Relay mode [Mode/ 0,1]*

relay mode relay function

0

The output relays switch in cascade.

rapid = rapid, + crawling, + creep speed relay

crawling speed = crawling speed, + creep speed relay

Creep speed = Creep speed relay

When positioning in reverse direction, the back relay is switched on.

1

The output relays switch one after the other

rapid traverse = rapid traverse relay

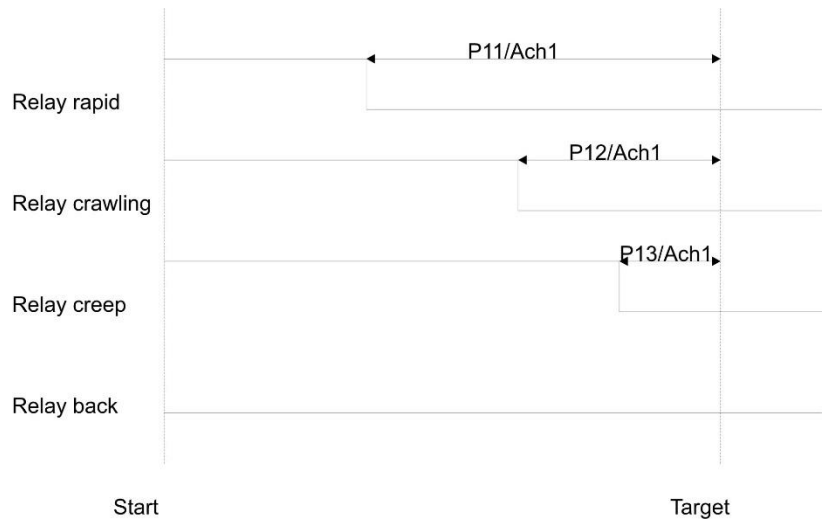
Crawling speed = Crawling speed relay

Creep speed = Creep speed relay

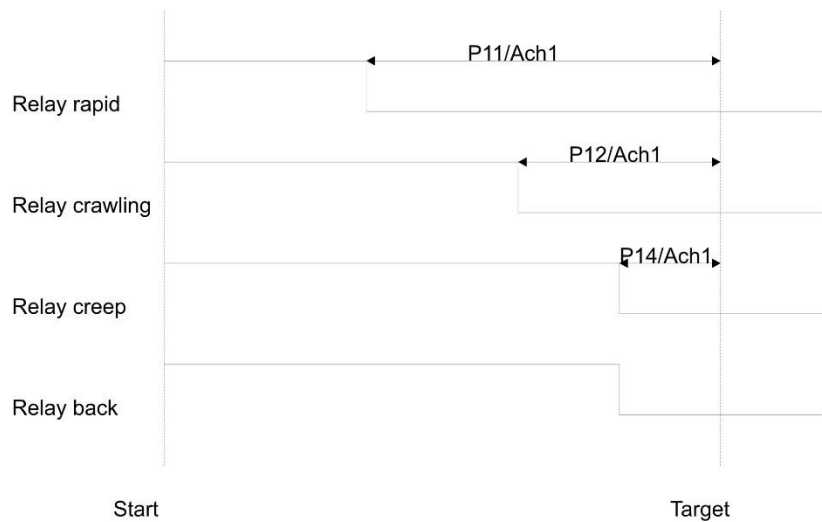
When positioning in reverse direction, the back relay is switched on.

Parameter level axis1:

Relay mode 0, positioning direction max.

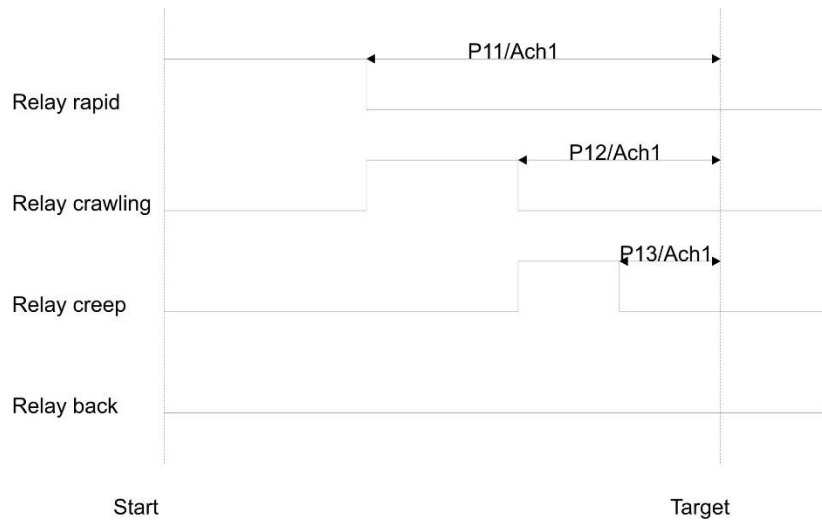


Relay mode 0, positioning Direction Min.

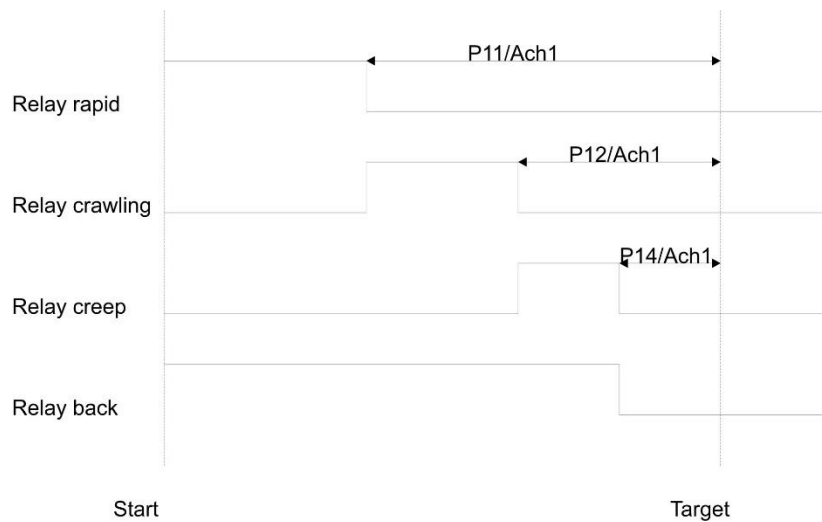


Parameter level axis1:

Relay mode 1, positioning direction max.



Relay mode 1, positioning Direction Min.



Parameter level axis1:

P80 *Status [Status/ 0,255]*

For devices with RS232 interface, the device status can be queried here.

0x00	Axis not ready for operation
0x01	Axis ready for operation
0x02	Axis moves
0x04	Axis in position
0x08	Reference run active
0x10	Here without function
0x20	Here without function
0x40	Measuring system error
0x80	End position exceeded (during homing, Hardware end positions)
0x100	Program execution active

Parameter level Facto:

For HEJM employees only.

4.4.3 Parameter list



For service purposes, it is advisable to document the parameters stored in the controller when the machine is delivered. The following table can be used for this purpose.

parameter	Specific machine setting
Parameter All	---
P00 Number of axes	
P01 Device identification	511 (PS511)
P02 Software version	
P03 Customer number	
P04 Difference cam, index	
P05 Referencing Enable	
P06 Operating mode	
P10 Minimum frequency for analog output	
P11 Maximum frequency for analog output	
P26 Logic of the switching outputs 1	
P27 Logic of the switching outputs 2	
P28 Logic of the switching outputs 3	
P29 Logic of the switching inputs 1	
P30 Logic of the switching inputs 2	
P31 Logic of the switching inputs 3	
P33 Switching behaviour of the encoder inputs	
P34 Switching behaviour of the	

switch inputs	
P35 Function of the F3 key	
P36 Time delay for repositioning	
P37 Wipe time for output Position reached	
P38 Wipe time for output Quantity reached	
P40 Clear	
P41 Dimension error compensation	
P42 Code Parameter levels	
P43 Code Saw blade level	
P44 Code for calibration level	
P45 Function of keys F1,F2	
P46 Output position reached in special function	
P47 Set/Reset function entrance	
P48 Function of the piece counter	
P49 Selection of the Positioning Release entrance	
P50 External stop function entrance	
P60 Number of programs	
P61 Program sequence	
P62 Current program number	
P63 Current status display of the program demand values	
P64 End position monitoring with program input	
P65 External block preselection	
P66 Tolerance window mode	
P68 Start buttons lock	

P90 Device address	
P91 Baud rate	
P94 Mask for switching outputs	
P95 Outputs via serial Interface	
P98 With/without program	
P99 Exhibition mode	
Parameter axis1	
P00 Actual value	
P01 Demand value	
P02 Calibration value	
P03 Software limit switch Min	
P04 Software limit switch Max	
P05 Distance for factor calculation	
P06 Pulses/path distance	
P08 Number of automatic start repetitions	
P09 Tolerance window	
P10 Dwell time after destination Achieved	
P11 Crawling speed	
P12 Creep speed	
P13 Correction stop direction Max	
P14 Correction stop direction Min	
P15 Relay switching time at stop	
P17 Dwell time at spindle compensation	
P18 Travel for spindle compensation	
P25 Pulse evaluation	
P26 Reversal of counting direction	
P35 Dead man's area for	

smaller values	
P36 Dead man's area for towards larger values	
P37 Reversing the hand buttons	
P38 Clamping delay time	
P39 Clear	
P40 Decimal point	
P41 Display brightness	
P42 Positioning mode default	
P43 Chain dimension function	
P44 Saw blade thickness	
P45 Parking position teach active	
P46 Manual/Automatic Mode	
P47 Offset for parking position	
P48 Position controller on, off	Without function
P49 Reaction time of the position controllers	Without function
P50 Window for position controller	Without function
P51 Position controller mode	Without function
P53 Referencing direction	
P54 Index pulse switches	
P55 Offset for referencing	
P56 Parking position to reference run	
P57 Timer for encoder monitoring	
P59 Referencing speed	
P61 Maximum frequency of the measurement system	
P62 Pulse measuring time for speed controller	Without function
P70 Relay mode	
P80 Status	

5. Operation

5.1 Display and function keys

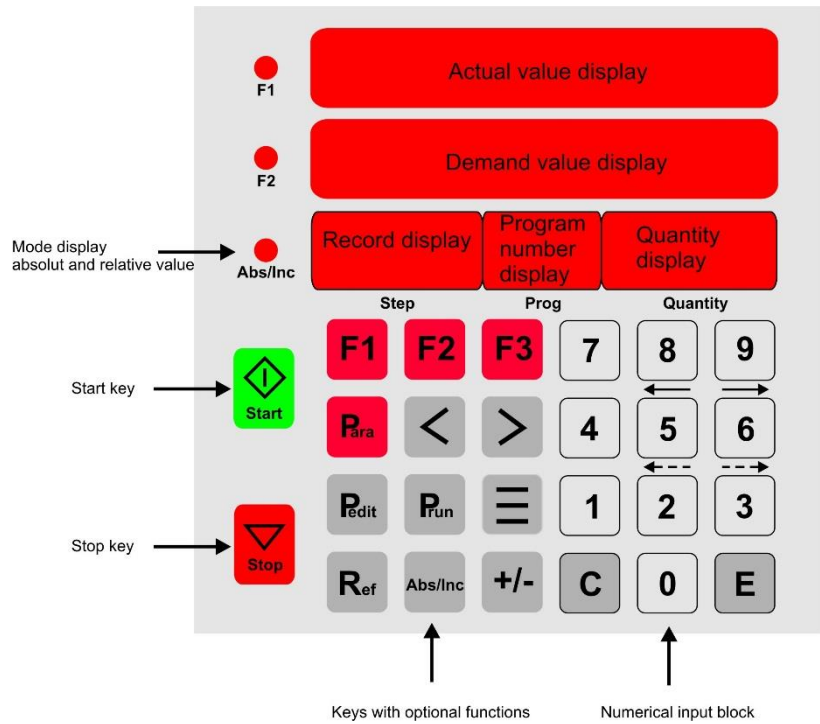


Abb. 4 Function keys, displays

5.2 Keys Functions

5.2.1 Input of piece numbers in single mode

After pressing the button Activate piece count input, the piece count symbol appears in the piece count display and the piece count value can be edited.

Press this button again to activate the quantity and return to the normal operating mode.

This button has no function during programming or program execution.

5.2.2 Calibrate, start reference run

(see parameter P05, All)

The device can be calibrated to any value by pressing the R key.

To do this, press the R key.

If the calibration is protected by a code, it must be entered and confirmed by pressing the E key.

The calibration value is then entered and activated by pressing the R key.

If a reference run is to be started, first press the R key and then the start key.

5.2.3 Program key Prun

The program key is used to activate and deactivate the program level, to execute programs created under Pedit.

5.2.4 Program key Pedit

The program key is used to activate and deactivate the program level for creating programs.

5.2.5



Select - Keys

These keys are used to select the individual programs, to scroll within the programs (but only in editing mode),

to advance the parameter levels and to select a parameter in one of the function levels.

(Caution!, if the change of a parameter value is not confirmed with key E, the new value will not be saved when switching on with the help of the Select keys)



Previous program, data set is selected.



Next program, data record is selected.

5.2.6



F1 key

This key is only active when P06 is set to 0 in parameter level All.

Used to enter the auxiliary function in editing mode and to switch the display between quantity and auxiliary function in run mode.

5.2.7



F3 key

The F3 key has different functions in different operating modes.

In normal single mode, this key can be used to switch between inch and mm representations of demand values and actual values. However, parameter P35 in menu level All must be set to zero for this.

In editing mode, this key can be used to search for the next free program or the next free data record.

When entering parameters, this key can be used to switch back and forth between the various function levels.

If the speed controller (P62) of the instrument is to be activated and the maximum frequency of the measuring system is to be determined automatically, the automatic frequency measurement can be started by pressing the F3 key. Parameter P35 in menu level All must be set to 3 for this.

After pressing the F3 key, "MEASurE" appears in the display.

Then enter a sufficiently large demand value value in the demand value window so that the controller can move at maximum speed for at least 1.5 seconds, setting P13 = 100%, P16 = 0%, P62 = 0.

Then press the start button.

When the frequency measurement is completed, the determined value is stored in P61.

Notice: After a frequency measurement has been completed, the system must be recalibrated.

When parameter P35 is set to 5, the editor for the dimension error compensation values is active.

5.2.8



Open and close parameter level

The Paria key changes from single mode to the parameter levels and back again.

It is not possible to change from the program mode to the parameter levels.

5.2.9



Enter key

In single mode, pressing the E key toggles between automatic and manual positioning.

In manual mode, the message "hand" appears in the demand value window.

The Enter key opens a program level in Run and Editor mode and serves as confirmation of the input of a demand value or piece count value.

The Enter key opens a function level and serves to confirm the entry of a parameter value.

5.2.10



Absolute, incremental dimension switchover

Press this key to toggle between absolute and incremental dimensions.

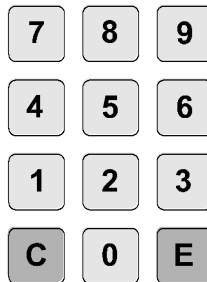
If chain measurement is selected, the Abs/Inc Led next to the step window lights up.

5.2.11



+/- button

The +/- key negates an entered demand value or parameter value.



5.2.12

Numeric input block

The numeric input block is used to enter the various nominal values, piece numbers and parameter values.

5.2.13



Start button

Starts automatic positioning.

If the machine is in the dead man's area, the start button is switched off when driving in the direction of the dead man's area.

Only the external start input is active.

The internal start button can generally be deactivated by setting parameter P66 in function level All.

5.2.14



Stop button

Stops an automatic positioning or a still active position control.

5.2.15




Deleting the EEPROM

The device checks all data sent to the device via the keyboard or the serial interface for their value range. This prevents erroneous data from entering the memory area.

However, should this highly unlikely event occur, it can lead to considerable malfunctions of the device.

If this should occur, proceed as follows.

1. Switch off device
2. Press the  keys and switch on the device.

All values stored in the EEPROM are reset to factory settings.


All stored values will be lost.

5.2.16



Setting the standard parameters for test purposes

It is possible to load the standard parameters into the Ram memory without deleting the EEPROM.

For this purpose, the key combination must be pressed  while the device is switched on.

After switching off and on, the old parameters are active again.

5.3 Displays

5.3.1 actual value display

In single mode, the actual value display shows the current actual value or EstoP if the emergency stop button has been pressed.

If a parameter level is selected, the name of the parameter level appears in this display.

If a parameter level is active, this display shows the parameter value.

In program mode, the actual value window displays the current actual value or, in editing mode, the message "Edit".

5.3.2 demand value display

In single mode, the demand value display shows the current demand value or messages.

Messages, such as

- Endu for lower limit switch active
- Endo for upper limit switch active
- Manual for manual operation active
- EndM with active material limit switch
- Stop when safety switch is active
- Encoder in case of encoder error

on.

If a parameter level is active, this display shows the parameter number or the name.

In program mode, the demand value window displays the current demand value.

5.3.3  function display

The function display contains a variety of information for the operator.

5.3.3.1  record display

The record display shows the current record of an active program.

5.3.3.2  program number display

The program number display shows an active program,
or the selected program during program selection.

If a piece count is entered in single mode, then , Piece count entry
active appears in the window. 

5.3.3.3  quantity display

Displays the current quantity.

5.4 Program operation

With the control, programs can be created (editor mode) and processed.

5.4.1 Edit and save programs (editor mode)

To enter the editor mode, press the Pedit button.

5.4.1.1 Creating a new program

The program display shows 1.

A free program is indicated by a flashing display.

A new program can be selected using the Select keys, or searched for by pressing the F3 key, or selected using the numeric keypad.

If a program is selected, it is opened with the E key.

Edit" appears in the actual value display.

The current program number appears in the program display and the data set display shows the current data set. A record that is not yet occupied is displayed flashing.

The demand value will also flash, indicating that this window is ready for input.

If a new demand value is entered, this is confirmed with the E key and the system automatically switches to the piece count window.

By pressing the Abs/Inc key, the demand values can be saved as absolute or incremental dimensions.

The entry of the piece count value is also confirmed with the E key, after which the system automatically switches to the next data record.

Once all data records have been entered, a parking position can be entered as the demand value.

This differs from the other demand values in that a 0 is entered in the piece count window.

The end of a program is represented by a data record with number of pieces and demand value 0. Once all data sets have been programmed, the editor mode can be exited by pressing the Pedit key. However, this is only possible when the demand value window is flashing! (input completed)

If all existing data records of a program are used and the last data record is not terminated with target value, piece count value 0, the system automatically switches back to the first data record after processing the last data record.

5.4.1.2 Editing an existing program

Edit" appears in the program and data record display.

Use the Select keys to select the desired program and press the E key to open it.

With the help of the Select keys, the data set to be changed can now be selected.

The data set is overwritten and confirmed with the E key.

If the end of the data record is to be shifted, a data record with demand value and quantity 0 must be entered after the last data record has been entered.

The program is exited again by pressing the Pedit key.

5.4.1.3 Delete an existing program

Edit" appears in the program and data record display.

Use the Select keys to select the desired program and press the E key to open it.

In the first data record, a 0 is entered in the target and quantity window and confirmed with the E key.

The program is now marked as free.

However, the data contained therein will be retained.

This means that a deleted program can be reactivated at any time.

5.4.2 Execute stored programs (run mode)

To enter run mode, press the Prun button.

The program number appears in the program window.

The desired program can be selected with the Select keys or via the numeric input block and activated by pressing the E key.

The program can now be executed.

When a program is finished, all displays except the program number window are switched off.

When a program is left during execution by pressing the Prun key, work can continue in single mode.

When the Prun button is pressed again, the program automatically returns to the point where it was left.

This also applies when a program has not yet been executed and the power supply has been interrupted.

If a program which has not yet been completed is to be aborted in order to start a new one, press the C key for 2 seconds.

When the external record selection function is activated and an external BCD switch is connected, the selected record is processed up to a quantity of 0. The controller then waits until a new data set is selected or the program is exited.

5.4.3 Entering the auxiliary functions

Each data set can be assigned one of the auxiliary functions 0 - 15. The output is binary coded via relays 7, 8, 10 and 11.

In run mode, these relays are active as long as the respective data set is being processed.

Since 4 relays are available for this function, it is possible to form up to 16 different output combinations.

Setting	Active relay (R)
0	No relay active
1	R 7
2	R8
3	R7 + R8
4	R10
5	R7+R10
6	R8+R10
7	R7+R8+R10
8	R11
9	R7+R11
10	R8+R11
11	R7+R8+R11
12	R10+R11
13	R7+R10+R11
14	R8+R10+R11
15	R7+R8+R10+R11

Proceed as follows to enter the auxiliary functions.

Press **F1** when editing the respective data set.

"Tool" appears in the demand value window and the piece count window flashes.

Enter the desired auxiliary function 0 to 15 in the piece number window.

(see table)

F1 again.

The help function is assigned to the current record.

If a program is executed (Run Mode), either the number of pieces or the auxiliary function assigned to the data record can be displayed.

Switching is done via the key **F1**.

If the help function is displayed in the piece count window, a small "t" is displayed on the highest decade of the piece count window to differentiate.

6. Dimension error compensation

Dimensional error compensation can be used to compensate for non-linearities in the mechanics.

Note: The dimensional error compensation in this software version is only active for positive values.

For this purpose, a list of the dimensions displayed by the device at various positions is recorded and compared with the actual values measured with a linear encoder.

To be able to enter this list in the controller, the dimension error compensation function must be activated in the All parameter level.


P 35 / All = 5 (dimension error compensation active / inch/mm changeover locked)


Then exit the parameter level again.

The editor is then enabled for entering dimension errors.

After pressing the F3 key, the dimension error compensation editor appears (M appears in the program window) and the actual value window flashes.

In the actual value window, you can now enter the first of the dimensions from the list that the device displayed when moving the

individual positions. After pressing the key,  the demand value window flashes. Now the corresponding real measurement from the

list can be stored. Press the key again to  save the first pair of values.



All other dimensional compensation values are then entered as described above.


The quantity window displays the number of the current pair of values.

The list of dimensional error compensation values shall contain at least 2 pairs of values.


These are the minimum software end position and the maximum software end position, as well as the corresponding measured values.





The list may contain a maximum of 100 positive value pairs.


Use the   keys to scroll through the list forwards and backwards.

- Press the key to exit the  editor again and save the dimensional compensation values in the EEPROM. "StorE" is shown in the display as long as the device is storing.

Only the values that are confirmed  with are saved.

- With the  key the end of the list can be displayed on any position can be set. This means that all of the following Dimension compensation values can be hidden.

To do this,  call up the dimension error compensation table, scroll to the desired pair of values with the keys and then press the    key for approx. 2 seconds until the "EndM" display in the process value window disappears again.

 Exit the table via , enter **P 35 / All =1(0)** to lock the table and activate dimension error compensation for operation via

P 41 / All = 1.

7. RS232 interface for 500 series controllers

In order not to go beyond the scope of these operating instructions, there is a separate operating manual available for this purpose, which will only be sent on request.

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