PCSPRO
englisch

PCSPRO

The operating panel PCS 009, PCS 090, PCS 095 and PCS 900 can be quickly and easily programed using the project planning software PCS*PRO*. The software can be operated an all PCs i.e.,PGs with MSDOS or DRDOS operating systems.

A hardware prerequisite is that the PC/PG must have at least one serial interface available. In oder to ensure a satisfactory installation, care must be taken to ensure that on the initial installation, at least 4 MByte free memory capacity is to hand on the hard disk.

Reg.10371/1000

Version 10/10.00

Systeme Lauer GmbH & CoKG
Postfach 1465
D-72604 Nürtingen

Operator reference manual: PCSPRO
Version: 07.11.00
Person responsible: Mroß

- We reserve the right make changes to the reference manual without prior notice.
- We can not guarantee the accuracy of the programs and data stored on the diskette and the fault-free state of this information.
- Since diskette represent manipulatable data media, we can only guarantee the physical completeness. The responsibility is limited to a replacement.
- At any time, we welcome suggestions for improvements and remarks on errors.
- The agreement also applies to the special appendices to this reference manual.

Suggestions for the user

Please read the reference manual before applying the unit first and store the manual at a safe location for later use.

Target group

The reference manual is written for users with previous knowledge in PC abd automation technology.

Representation conventions

[KEY]	Key inputs of the user are represented in square brackets, e.g. [CTRL] or [DEL]
Courier	Display outputs are printed in the Courier font, E.g. C:\>
Courier bold	Keyboard input to be made by user are given in Courier bold, e.g. C:\>DIR
Kursiv	Names of buttons to be selected, menus or other screen elements and product names are printed in Italics

Symbols The following symbols in the reference manual are used to mark certain text sections:

Danger!
Possibly dangerous situation.
Injury to person can be the result.

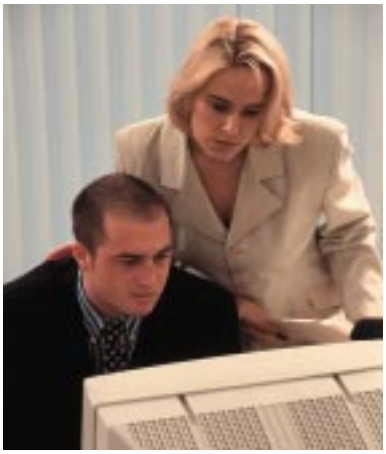
Attention!
Possibly dangerous situation.
Property damages can be the result.

Tips and supplementary notes

Table of contens

Quality and support

In our company, quality comes first. From the electronics component up to the finished device, the quality assurance test competently and comprehensively.
National an internation test standards (ISO, TÜV, Germanischer Lloyd) are the basis.
Within 48 hours, every device passes a 100% check and continuous test under worst case conditions at changing temperatures (0...50°C) and test voltages.
A guarantee for maximum quality.



Our products not only feature a maximum economic efficiency and reliability but also a comprehensive complete service.
You not only receive demo devices but we rather make specialists available who support you in person with your first application.

Qualified user consultation by competent sales engineers is obvious for us.
Our support is for you for the side with advice and deed every day.

We set up training programs and technical training for you in our modern training center or alternatively also in your house.
Request the curent training catalog.

From the consultation up to the user support, from the hotline up to the service, from the reference manual up to the training an all covering and individual service for the entire product line is waiting for you.

Whenever you need us, we are there for you:
dynamically, creatively and enormously efficiently. With the entire experience of a world-wide successful enterprise.

Telephone	07022/9660 –222, -132, -231, -230
eMail	support@systeme-lauer .de
Web site	www.systeme-lauer.de
	Systeme Lauer Active Area
	(Download of Software, driver, manuals, Forum...)

Safety regulations

This reference manual contains the most important remarks in order to safely operate the device.

- This operator's guide, particulary the safety remarks are to be noted by all persons working with the device.
- Furtherrmore, the rules and regulations for the accident prevention applying to the application location are to be observed.
- Use as directed. The device is deigned for the application in the industrial area.
- The device is manufactured to the state of the art and the official safeguarding regulations. Nevertheless, due to the application, dangers or impairments can result to the machine or to material assets.
- The device meets the requirement of the EMC guidelines and harmonized European standards. Any hardware-related modification of the system can influence the EMC behavior.
- The device may not be used without special protective measures in the hazardous area and in plants requiring a special monitoring.
- Do not heat up the buffer batteries. Danger of explosion. Serious burning can be the result.
- The installation and operation may only be performed by trained personnel.
- The operating voltage of the device may only be in the specified ranges.
- You find information on this on the type plate and in the specifications of this reference manual.

Standards

The PCS is manufactured to the state of the art and meets the requirements of following guidelines and standards:

- EMC guideline 89/336/EEC
- EMC specialist basic standard EN50081 part 2 Noise Emission in The Industrail Area
- EMC specialist basic standard EN50082 part 2 Inerference Resistance in The Industrial Area
- European Extra Low Voltage Guideline 73/23/EEC

The mounting and connection instructions described in this documentation are to be observed.

The conformity is confirmed by attaching the CE sign.
The EC conformity declarations can be asked for at:

Systeme Lauer GmbH &Co KG
P-O-Box 1465
D-72604 Nürtingen

1 Installation

Standard installation in directory C:\PCSPRO:

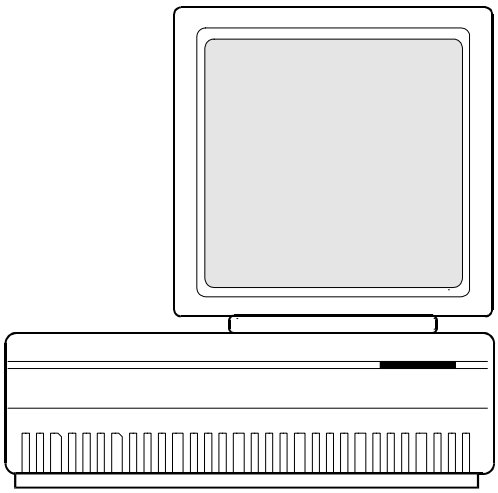
In order to expedite the standard installation, please slide the disk into your respective disk drive. Change over to the selected disk drive and on conclusion type in „INSTALL“. This command will call the installation program. A directory „PCSPRO“ will now be established on your hard disk and all mandatory data will be transfered into this directory.
Installation in another directory:
Should you wish to install this software into another directory, the files

PKUNZIP.EXE
and PCSPRO.ZIP

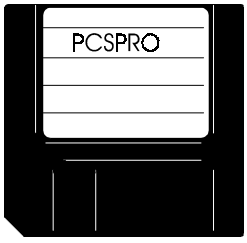
must first be copied from the floppy disk into the directory before the installation procedure can commence. Switch to the specified directory and enter the command „PKUNZIP PCSPRO“. All essential data will now be unpacked into your directory. As all essential data on your disk is in a compressed form, a simple copy command is not able to file any functional data into your directory. Finally the two above mentioned files can be deleted.
No alterations will be made with either of the two kinds of installation in the system files

AUTOEXEC.BAT
and CONFIG.SYS.

Eventual modifications to the path specifications as well as the installation of drivers must be made by the operator. In order to achieve optimum work with the PCSPRO, you should read the following pages carefully.



PC - MSDOS or DRDOS



Project planning software
PCS*PRO*

2 Memory configuration

In order that the program PCSPRO can be used to its full capabilities, at least 550 kByte of main memory capacity in the PCs/PGs must be available. On entering the DOS commands „MEM“ or „CHKDSK“ the available main memory capacity will be indicated. If the free main memory capacity is less than 550 kByte, then resident programs should be removed and if neces-sary be loaded into the „upper memory blocks“ (memory area between 640 kByte und 1 MByte). For an explanation of this procedure please refer to operating system technical information sheets.
As the EXE-File of the project planning software is itself actually larger than the main memory area made availabe by DOS, the program works with an Overlay-System. That means that only the momentarily essential routine program phases will be loaded into the main memory. If an „Expanded-Memory-Manager“ is installed in your system, currently applied program phases will be stored in the expanded memory and will not have to be read again by the hard disk on renewed application. In order for this driver to be loaded as well, it must be called into the file „CONFIG.SYS“.
To install an EMM-driver for various operating systems, the following commands must be keyed into the CONFIG.SYS:
MS-DOS 6.2

```
DEVICE=C:\DOS\HIMEM.SYS
DEVICEHIGH=C:\DOS\EMM386.EXE
```

DR-DOS 6.0

```
DEVICE=C:\DRDOS\HIDOS.SYS
HIDEVICE=C:\DRDOS\EMM386.SYS
```

In addition it is recommended to install a hard disk cache program (e.g. SMARTDRV.EXE). This program has the task of buffering the access to hard disks. The above mentioned driver programs reduce the access time to the program modules of the software PCSPRO, and even more so with the access to the hard disk. This is clearly evident from the reduced reaction time of the software.

3 Program call

The program is started up by typing in the command
„PCSPRO“.
By keying in „PCSPRO /?“ you are supplied with information on possible parameters.

4 Working with PCS*PRO*

The start selection window

When the program is started, the start selection window appears. It is in this window that the operator decides upon the linkage to be eventually made to the PCS. This will include the type of operating panel, the PLC applied as well as a listing of the most varied coupling possibilites. This selection decides as to what kind of driver will be installed with the final loaded data record. The parametrization of the driver is done with the assistance of the menu heading „Driver Parameter“ in the menu „Project“.
The operator loads an already created data record under the menu heading „File“ or files another data record. If the menu point „START SELECTION“ is called, the start selection window appears again. It is to be noted here that before this action, open data must first be closed, and a new data record must be allocated to the new configuration.

The background window

After concluding the start selection, the background window appears. In this window the operator can recognize what is occupying the PLC area which in turn is dependent on the selected control. The system words of the PCS, as well as the variables area, are presented here. If words are occupied twice over, this will be made apparent by an arrow at the right hand side of the word. Selection of this button causes the indicator of the variables allocated to this word, to be faded into another window. If a variable is highlighted with a cursor key (the corresponding line will be lit up from underneath) the variables editor can be called with the [ENTER] key or a double click of the left mouse button. The respective variable is already loaded and can be adapted.

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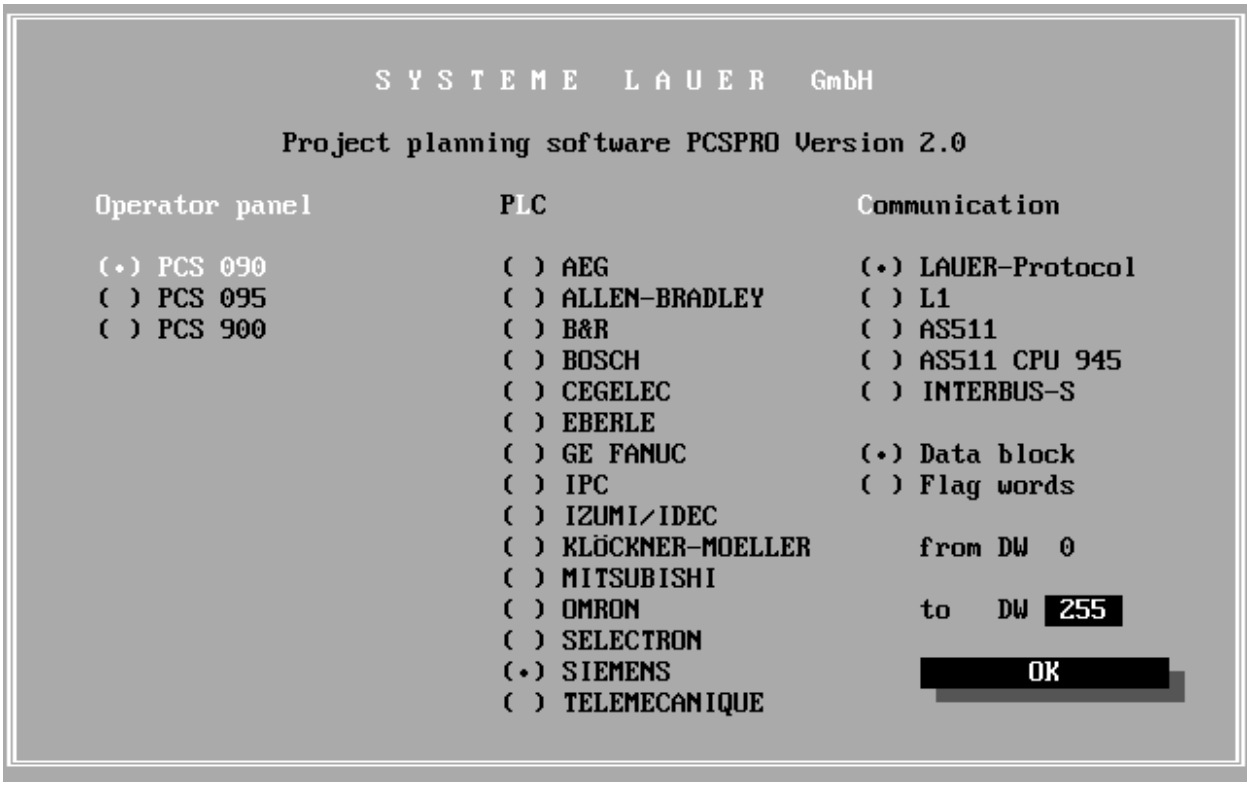
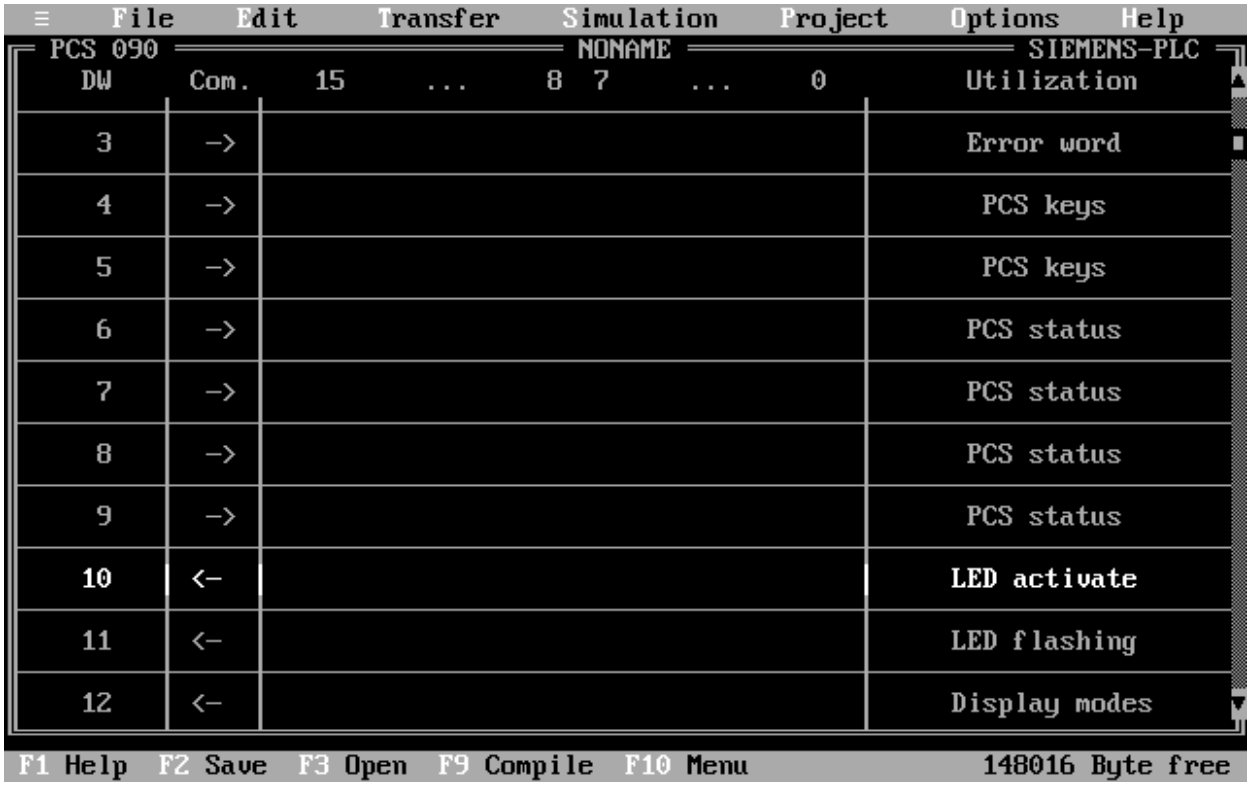


Start selection window



Background window

4 Working with PCS*PRO*

Servicing

The program PCSPRO can be just as easily operated with a keyboard as with a mouse. In the various dialogue windows of the program it is possible to change positions between the individual elements (switches, input lines etc) using the [TAB] key. The key combination [SHIFT]+[TAB] enables the reverse branch direction. Activated switches are underlined in dark writing and acknowledged with the [ENTER] key. When operating with a mouse the selected button will be activated with the left mouse button. The help system can be called up at any time with the right mouse button. The program PCSPRO has a situation orientated help system at its disposal. That means when activating the [F1] key; i.e., the right hand mouse; the help text appropriate to the situation will be called into the display.

Variables designator / Menu designator

The operator can apply up to 16 character length strings as designators for the applied variables, menus and timers (the latter only with the PCS 900).

Data record extension

A further data record can be loaded to an existing file by selecting the button „ATTACH...“ under the menu heading „FILE“. If you want, for example, to use the same definitions of the 128 freely definable characters (PCS 900) for all your data records, then you can file them in a separate file. If need be, the operator only has to load this special character set to any one of the particular data records in question. Included in the delivery there are already character set definitions for the most important PC code pages (files PAGE437.PCS, PAGE850.PCS, PAGE852.PCS, PAGE860.PCS, PAGE865.PCS, PAGE856.PCS) as well as the 7 bit character set of the PCS 200 FZ (KATAKANA.PCS, KYRILL.PCS, SERBOKRO.PCS).

Care to be taken:

The freshly loaded data record may not have any new definitions of texts already filed, such as variables and menus. If this is the case, the planning software emits a corresponding fault message and the file is loaded into the correction editor. The operator now has the possibility of the correc-ting the faulty part of the data record.
Working with PCSPRO

Programing

Programing of the PCS is done with the menu „TRANSFER“. On selection of this menu point the created data record will be compiled and transfered into the PCS. The setting of the transfer baud rate (DIL 7 to the PCS) is automatically taken into consideration by the project planning software.

DIL 7 ON = 115 kBaud transfer rate
DIL 7 OFF = 37.5 kBaud transfer rate

The setting of the PC-Interfaces requisitioned for the programming and simulation is done in the menu „OPTIONS“ under the heading „INTERFACES“.

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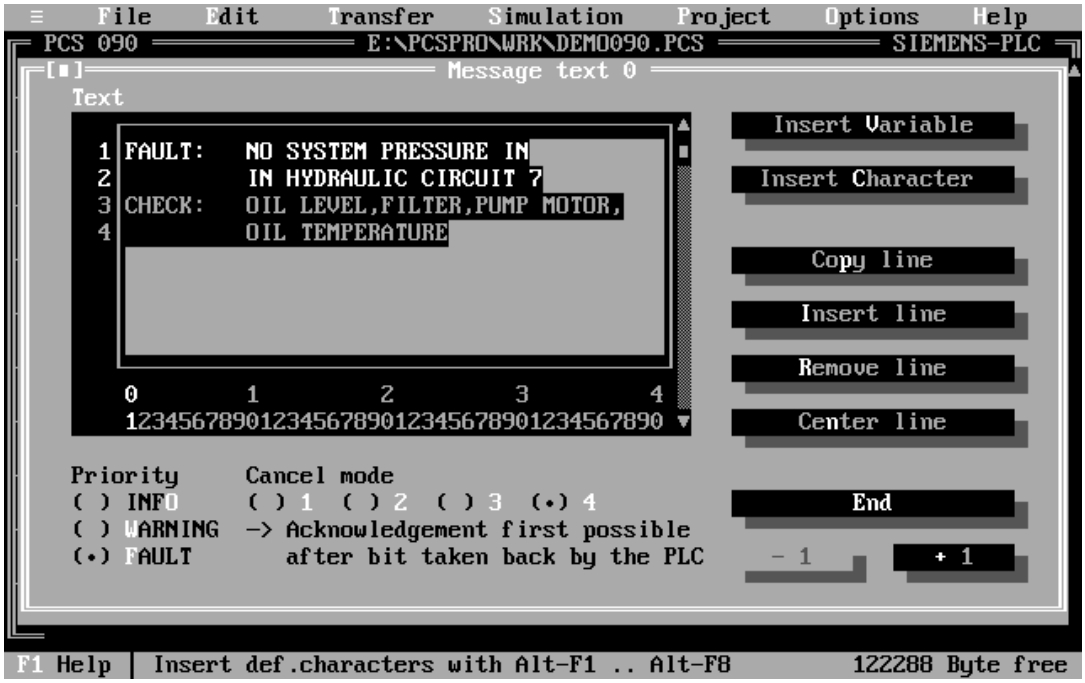
Word processing

The various types of texts (operating texts / message texts / help texts..) can be edited with the pull down menu “EDIT”. The call of the variables editor, i.e. the characters editor, can ensue from these text editors.
When variables are applied to texts, their positions will be filled up with stand-ins that have the respective amount of characters. If the cursor is moved to the 1st position of the variable, information about the variable definition (name of variables, classes of variables...) is blended in. With a double click of the left mouse button on the variable stand-in (or <CTRL>+<RET>), the variable editor can be called directly. The highlighted variable is now loaded and can be adjusted on demand.
On editing the printer text of the PCS 900, the 8 pseudo variables, as listed below, can be inserted into the printer text lines (<TAB> Horizontal tabula-tor, <ESC> Escape, <LF> Line Forward, <FF> Form Feed, <Bd+> Bold on, <Bd-> Bold off, <Un+> Underline on, <Un-> Underline off). These pseudo variables represent 8 editable character strings, each with a maximum of 8 characters, in the dialogue PRINTER PARAMETERS (menu PROJECT). If these pseudo variables, e.g. <LF> are applied, then the sequence can be correspondingly adjusted in a simple manner by changing the printer being used without any alterations having to be made to the printer text.



Message text editor

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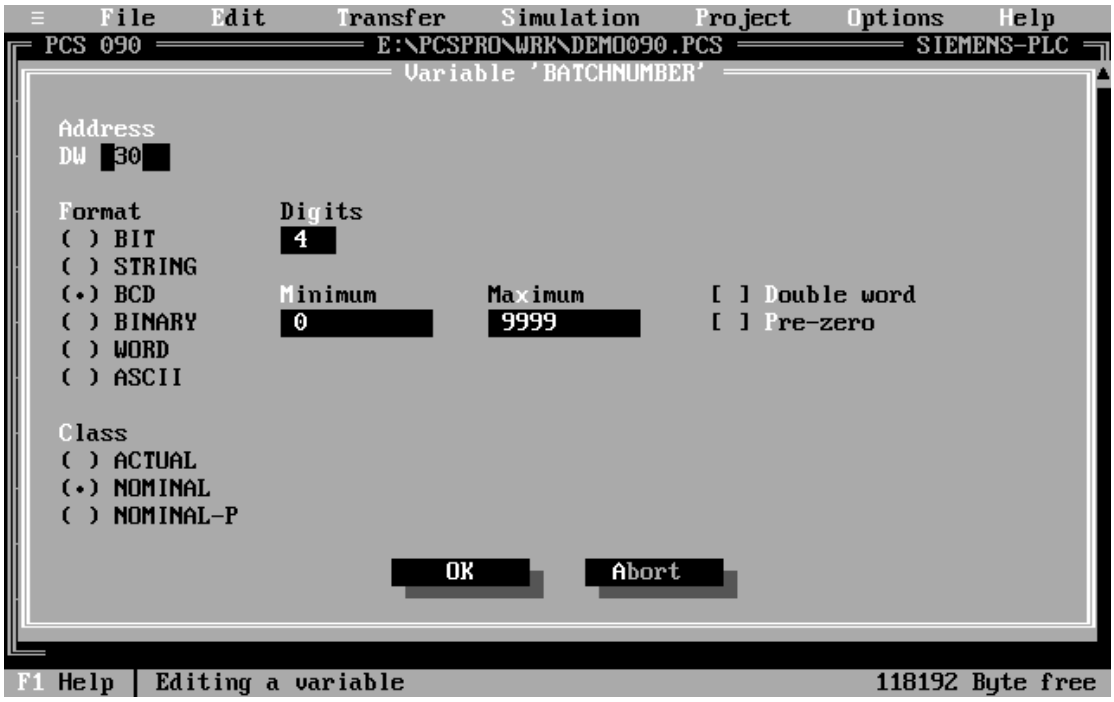
Variables editor

The variables editor is also to be found under the menu heading „Edit“. On calling the editor, the variable just created will be shown to the operator in the selection window. If a new variable is to be created, the operator can call the variables editor after having entered one of the up to 16 cha-racter long designators with the [Edit]-key. All the variable types used in the PCS are listed here, and on the corresponding selection of their attribu-tes (scaling, min/max values, amount of digits, operational signs...), they are faded-in. If the window is quitted by pressing the [ESC] key or respectively by selecting the closing button, the adjustment will be lost.



Variables editor

4 Working with PCS*PRO*

Menu editing

The programer can create guiding structures with the menu editor for the operator. A 127 menus can be filed. A menu on the other hand can consist of 255 nodes. To begin processing the menu, the programmer has to get into the

Menu selection window.

A one to 16 character long name as well as a menu number (0...127) can be assigned to each menu. By selecting the [Edit]-button you call the

Menu editor.

Here the nodes can be filed, renumbered or erased. In processing, guide the highlight to the corresponding node (TAB- or MOUSE key), or create a new node with the input field “NODE NUMBER”. On pressing the [Edit] button you will open up a further window, the

Node editor.

The following arrangements are made in this editor: 1) Assignment of an operating text to the actual node. 2) The setting of possible adjacent nodes. If the button „OPERATING TEXT“ in the dark underlaid display is pressed, the programmer wil be in the

Operating text selection.

Here the operator decides as to which operating text will be assigned to the preselected node. On pressing the [INSERT] button, the highlighted operating text is taken over. At the same time a spring return is made back to the node editor.
Linkage of the individual nodes can be done on a selection basis with the mouse key (clicking of the respective node button) or with the key combination [ALT] + L / R / W / U. This selection brings the programer into the

Node selection window.

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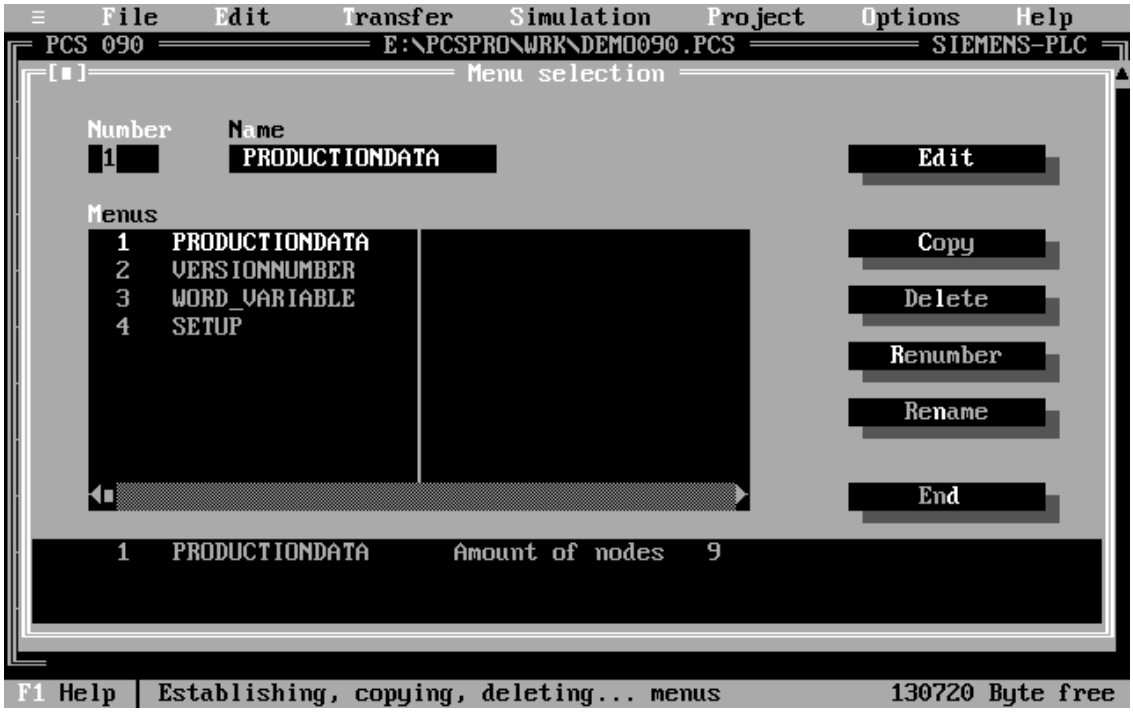
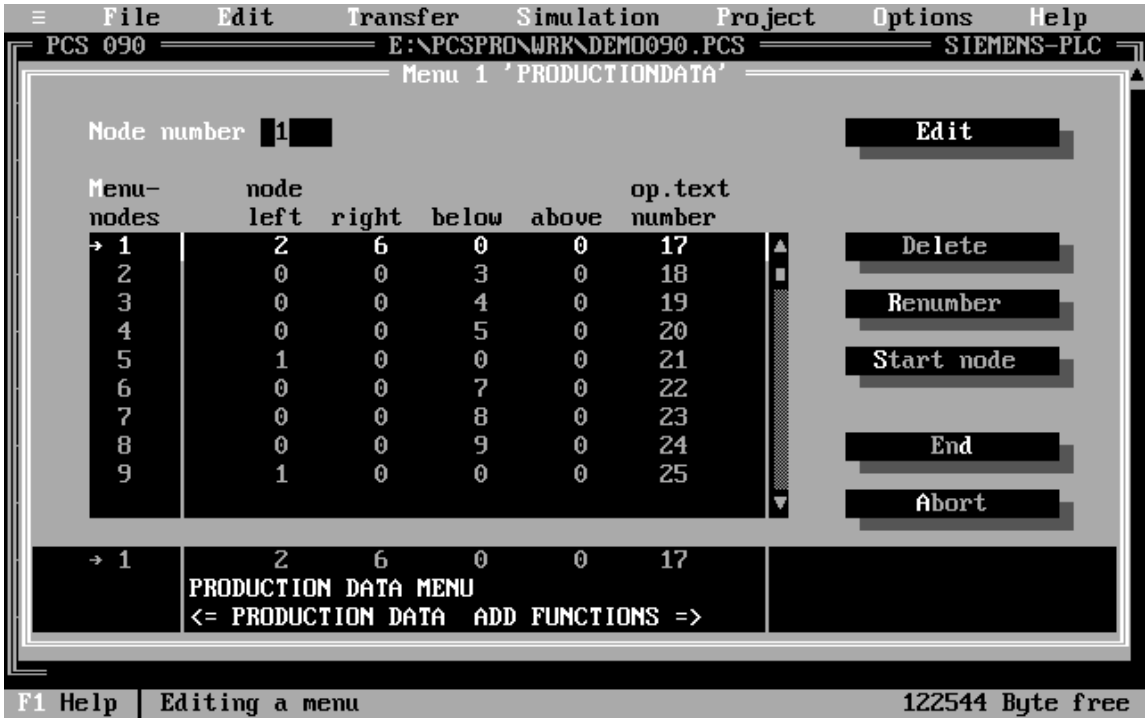


Menu selection



Menu editor

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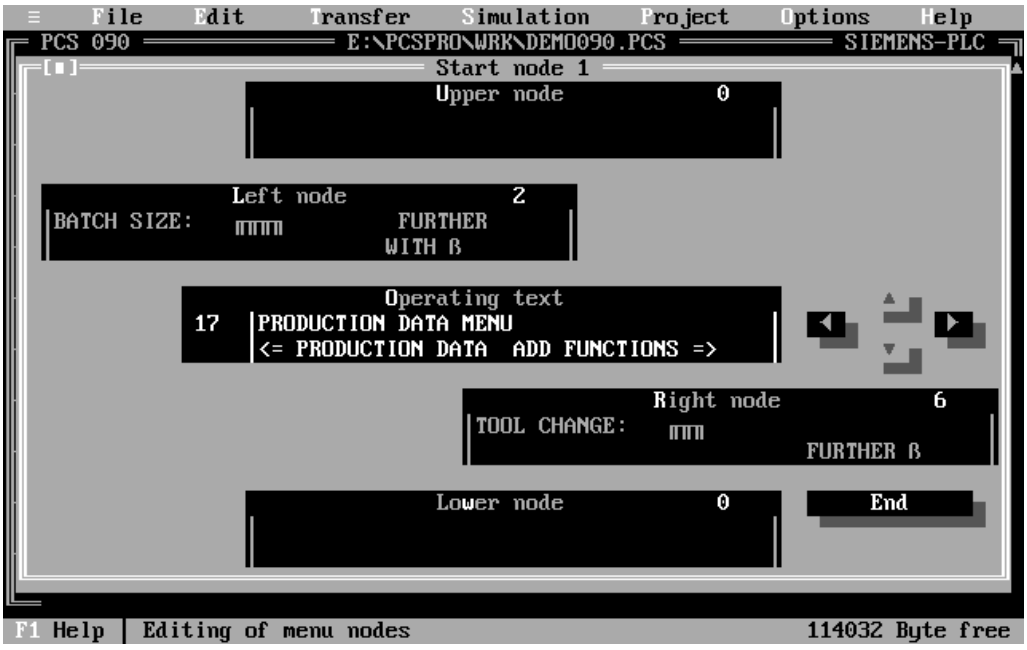
All the nodes already filed and the operating texts appointed to them, are displayed here and can be defined as sequence nodes. Selection is made with the [OK]-button and then a return is made to the node editor. For every filed spring destination, the appertaining cursor key in the window of the planning software is activated. If the arrow keys; either selected with the keyboard or mouse; define the direction, this is carried out as a command and the corresponding operating text is displayed in the simulated display (dark underlaid section).
To change directly over to a new adjacent node, which has not been allocated up to that moment (Button of the corresponding direction is barred), you can use shift and cursor key. Then there will be automatically generated a new node with the first free node number, changed over to this new node and the operating text selection window appears.
This behaviour of the menu node-editor can be used to „teach-in“ the menu structur, by the use of shift and cursor keys and the selection of the corresponding operating text.
If a menu contains unattainable nodes, an error message will be given on leaving the menu editor.
The following procedure in setting up a new menu is recommended:

1) Define every operating text required for the menu structure
2) Define the menu nodes and assign the respective operating texts
3) Fix the start node
4) Link the nodes = set up menu structure (right / left / lower / upper nodes)



Node editor

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Project description

A descriptive text with a maximum length of 1024 characters can be entered under the menu point „PROJECT“. This short description can include the headings.

- Company
- Customer
- Project
- Operator
- Compilation Date
- Remarks

This enables you to later identify the various projects again and serves the purpose of enabling you to have an overall view of file and version administration.
References can be registered here on amendments to the data record on conclusion of the project planning.

Time setting

The display cycle time of message texts in cyclical display mode can be set to a value of between 1 and 60 seconds under the menu heading „TIMES“. With respect to the PCS 900, the format for the date can also be determined.

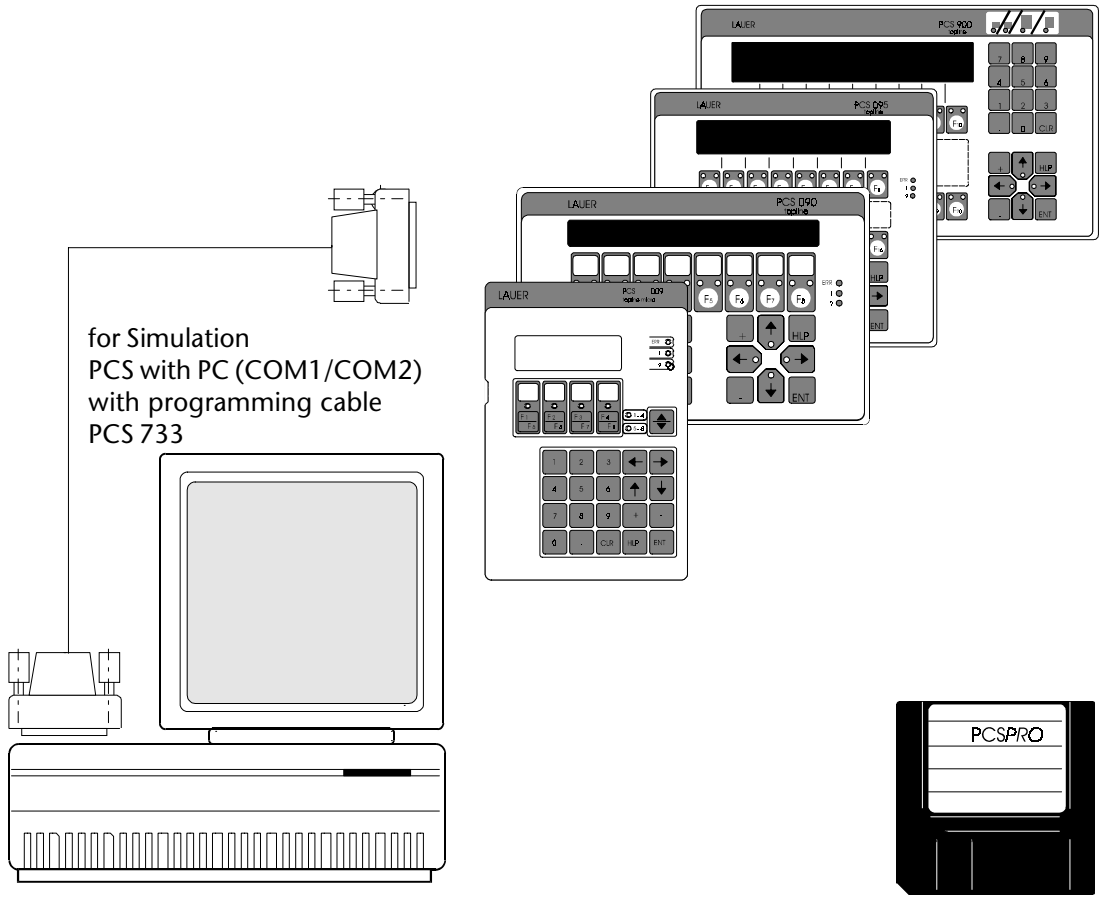
4 Working with PCS*PRO*

Driver parameter

The configuration of the driver software is undertaken with the „DRIVER PARAMETERS“ in the pull down menu „PROJECT“. In the selection field „INTERFACE“, differing interface configurations can be assigned to the various DIL switch positions, (DIL5/6) at the PCS. If the respective arrow button is chosen, then the possible settings will be displayed. They in turn can be taken over by actitvating the [ENTER] key, i.e. the left mouse button. In selecting the L1 driver, the programmer has the possibility of choosing between TTY, RS232 and TTY Timeout * 10. The setting of „TTY Timeout * 10“ is proposed for the application of the PCS along with the AUTOMUX PCS 809 at the AG-interface of the SIEMENS controls.
The precise significance of the individual driver settings can be gleaned from the corresponding manuals PCS 91.SIE, PCS 91.AEG, PCS 91.BOS etc.

Simulation

The activation of the PCS can be simulated with this menu heading. On calling the simulation, the transfer block (DB, features area...) is presented and initialized in the PCS. On successful initialization, all the LEDs light up for a short time, and on commencement of communication the ERR-LED goes out. The bright underlaid word can now be called with the button „EDIT WORD“ and finally amended. The various words can be highlighted on a selection basis with the arrow key of the PC keyboard or with the left mouse button. With the use of the buttons „ADD WORDS“ and „REMOVE WORD“, more words can be taken into the simulation or removed from it.



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Language changeover in the planning software

The displayed texts; of the menu column, of the status line, of the help system; within the planning software appear, depending on their selection in either German, Italian, English, French, Dutch or Danish. This option only applies to the planning software and has no bearing on the PCS data record which you filed, i.e. operating texts, message texts .. .

Colour changeover

If the graphic card that is being used permits a switch over to occur, then the operator has the chance of selecting from the menu heading „COLOR PALETTE“ of the menu „OPTION“, one of the presentations:

- STANDARD COLOURS
- BLACK - WHITE
- MONOCHROME.

Under the presentation modes „BLACK-WHITE“, and „MONOCHROME“, the individually defined characters are presented as Greek letters. Furthermore the corresponding ASCII equivalent and not the defined characters are presented in this setting for the freely definable characters. If the 128 freely definable characters, e.g. for Cyrillic are redefined for the PCS 900, then a projection should in any case be made on a PC with a VGA card and the colour setting STANDARD COLOURS.

The help system

The program has a situation dependent help system. That means, that at any point in time in processing a data record, you receive an appropriate help text for the work on hand with the F1 key or the right mouse button. This enables the operator to have a direct access to information without having to spend time searching in a manual. If the services of the help system are used in the choice of the start selection window, then the required individual components (manual, adaptor cable, programing cable ...) dependent on the selected control type, will be displayed.
On selecting the help system for the background window, the labelling, i.e., the functionality of the words will be written. It is possible to move around the various information topics in the help system.

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Data notation / Work

The following files belong to the programing environment:

- PCSPRO.CF1
- PCSPRO.CF2
- PCSPRO.CFG
- PCSPRO.INI
- PCSPRO.EXE
- PCSPRO.ICO
- PCSPRO.PIF
- PCSPRO.GR
- PCSPRO.EGR
- PCSPRO.HGR
- PCSPRO.IT
- PCSPRO.EIT
- PCSPRO.HIT
- PCSPRO.FR
- PCSPRO.EFR
- PCSPRO.HFR
- PCSPRO.UK
- PCSPRO.EUK
- PCSPRO.HUK
- PCSPRO.NL
- PCSPRO.ENL
- PCSPRO.HNL
- PCSPRO.DK
- PCSPRO.EDK
- PCSPRO.HDK

PCSPRO.CF1
PCSPRO.CF2
PCSPRO.CFG

The EXE-file reads the corresponding configuration for the transfer block PLC <=> PCS from this file. This configuration is PLC specified, and is presented a new for every new control type.

PCSPRO.INI
In the INI file, all information will be saved which effects the actual settings of the planning software. Filed here is the colour setting and the language with which the PCSPRO will be started and which interfaces for programing and simulation will be applied...

PCSPRO.EXE
Program capable of running on the DOS-operating system.

PCSPRO.ICO
This data contains the presentation symbol (icon) which can be displayed, if the software is embodied in the Microsoft Windows environment.

PCSPRO.PIF
This data contains the necessary information for Microsoft Windows in order that the program can also be started from this environment.

PCSPRO.GR Resource-data with German text
PCSPRO.IT Resource-data with Italian text
PCSPRO.FR Resource-data with French text
PCSPRO.UK Resource-data with English text
PCSPRO.NL Resource-data with Dutch text
PCSPRO.DK Resource-data with Danish text

PCSPRO.EGR Resource-data with German error text
PCSPRO.EIT Resource-data with Italian error text
PCSPRO.EFR Resource-data with French error text
PCSPRO.EUK Resource-data with English error text
PCSPRO.ENL Resource-data with Dutch error text
PCSPRO.EDK Resource-data with Danish error text

PCSPRO.HGR Resource-data with German help text
PCSPRO.HIT Resource-data with Italian help text
PCSPRO.HFR Resource-data with French help text
PCSPRO.HUK Resource-data with Englisch help text
PCSPRO.HNL Resource-data with Dutch help text
PCSPRO.HDK Resource-data with Danish help text

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Project files

An XXX.PCS data record file as well as an XXX.DRV driver file with the project specific setting of the driver parameter belongs to a project.

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