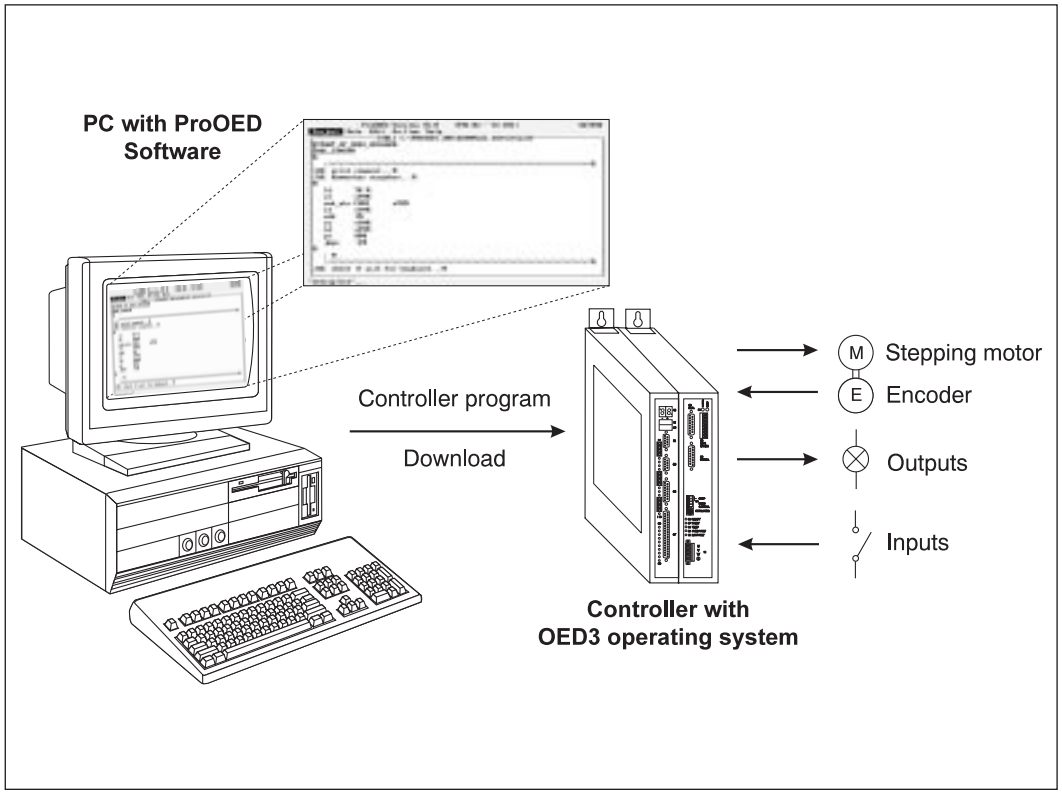

Programming Software for Positioning and Sequence Control Units with operating system OED3 Version 3

ProOED 3

Version 3.0

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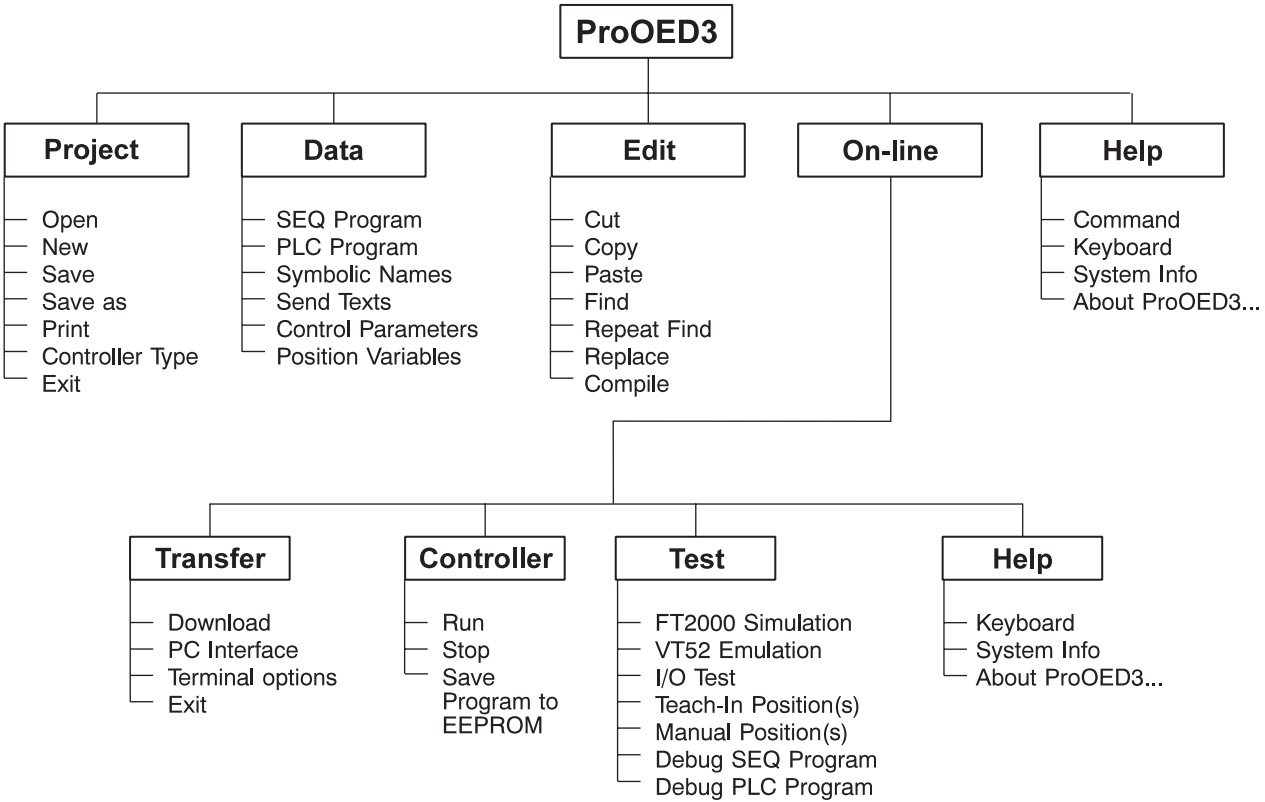
a company of Schneider Electric

Menue structure of ProOED3



Procedure for creating a control program

In the following, the steps to create a control program with ProOED3 are listed. Prerequisites for programming and program execution on the controller are correct wiring and setup of the controller; see standard controller documentation and ProOED3 documentation.

Operating steps	**Description of operating steps**
1. Start of ProOED3	Change to the controller's project directory: - "C:\USR\PROOED3.300\PROJECTS" for Series 300 controllers - "C:\USR\PROOED3.01x\PROJECTS" for WDP3-014/WDP3-018 controllers Type "START"
2. Create a new project or open an existing project	Menue "Project/New" or "Project/Open"
3. Select current controller type	Menue "Project/Controller Type"
4. Enter program parts	Menue "Data/..." - "SEQ (Sequence) Program" for sequential motion operation, communication via serial interface, I/O connections. - "PLC Program" for time-parallel execution of I/O operations and sequence program part. - "Symbolic Names" for individual identifiers in the program. - "Send Texts" for communication via serial interface. - "Control Parameters" for basic controller setup. - "Position Variables" for teach-in operation Menue "Edit/..." to edit : SEQ Program, PLC Program and Symbolic Names
5. Compile PLC and/or sequence program part	Menue "Edit/Compile"

6. Connect PC with controller and select PC interface for data transmission (default : COM 2).

Menue "On-line/Transfer/PC Interface"

7. Activate editing mode on the controller

For Series 300 controllers:
Press key 41 on-side until "01" is displayed on the controller (Stop status);
then press and hold both keys 41 and 42 on + side until "Ed" is displayed.

For WDP3-014/WDP3-018 controllers:
Press - key until "01" is displayed on the controller (Stop status);
then press and hold both keys + and ↵ until "Ed" is displayed.

"EDIT>" is displayed on the PC monitor.

8. Loading program (parts) into the controller

Menue "On-line/Transfer/Download"

NOTE
If program part was not compiled before calling menue ".../Download" a "?" is displayed in front of the according program part name.

9. Starting the control program

Menue "On-line/Controller/Run"

10. Program test

Menues "On-line/Test/..."
- "FT2000 Simulation" to test FT2000 operation dialogues
- "VT52 Emulation" to test terminal operation dialogues
- "Debug SEQ Program" to view sequence program part
- "Debug PLC Program" to view PLC program part

11. Save program in EEPROM

Menue "Online/Controller/Save program to EEPROM"

ATTENTION
Before switching off power supply the programme transfer must be completed.
Important program data will otherwise be destroyed which can only be restored by the Berger Lahr Service.

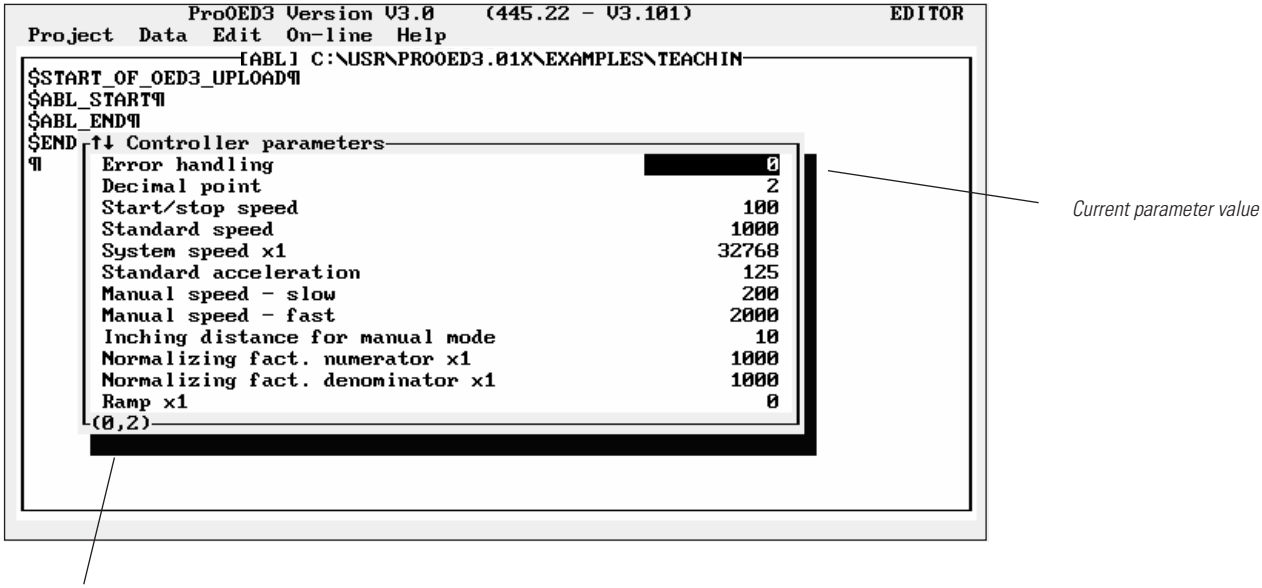
12. Print program

Menue "Project/Print"
The control program is stored an ASCII text file (*.LSO) in the current project directory and can then be printed out with the MS-DOS command: "PRINT".

Control parameters

The control parameters are used to initialize the controller. The required parameter values can be entered with the editor "Control Parameters". Parameter selection is done with the keys <↑> and <↓>.

The overview on the next page shows the available parameters and their meaning.



Current parameter value

range (min/max) of the selected parameter

NOTE
A control parameter download must be done with the ProOED3 menue "Online/Transfer/Download" after editing the control parameters.

Parameter	Range of values (default)	Description
Error handling by user	0 - 2 (0)	Controller response in case of an error 0 = Controller is stopped. The controller displays "99" and the error menue is transferred to the PC or operating terminal via the interface c1. 1 = Sequence program is stopped. The controller displays an error code and the error menue is transferred to the PC or operating terminal via the interface c1. 2 = Error code is displayed in the controller's seven-segment display. Error handling by application program (jump to subprogram from Label L0)
Decimal point	1 - 3 (2)	Number of decimal places for sending and receiving decimal numbers with the commands snd_dez and rec_dez
Start-/Stop speed	1024 - 10000 Hz (100) Series 300 4 - 10000 Hz (100) WDP3-01x	The speed at which the axis is started or stopped
Standard speed	1 - 200000 Hz (1000) Series 300 4 - 40000 Hz (1000) WDP3-01x	Speed of all axes (can be changed with "vel" command in the user program)
System speed x1 to x4	1 - 200000 Hz (32768) Series 300 4096 - 40000 Hz (32768) WDP3-01x	The maximum system speed
Standard acceleration	1 - 2000 Hz/ms (125)	Maximum ramp gradient to accelerate and decelerate axes (can be changed with "acc" command in the user program)
Manual speed - slow	1 - 10000 Hz (200) Series 300 4 - 10000 Hz (200) WDP3-01x	Speed for slow manual movement by flag m0 or m1
Manual speed - fast	1 - 10000 Hz (2000) Series 300 4 - 10000 Hz (2000) WDP3-01x	Speed for fast manual movement by flag m2
Inching distance for manual mode	1 - 100 steps (10)	The distance for short-time activation (approx. 200 ms) of the manual movement flags m0 or m1 0 = Continuous running at short-time activation of manual movement flags.
Normalizing factor numerator x1 to x4	±2147483647 (1000)	Numerator for the normalizing factor used in point-to-point mode for converting user-defined units
Normalizing factor denominator x1 to x4	1 - 2147483647 (1000)	Denominator for the normalizing factor used in point-to-point mode for converting user-defined units
Ramp x1 to x4	0 - 3 (0)	The shape of the ramp for acceleration and deceleration 0 = Linear ramp 1 = Exponential ramp 2 = Sine square ramp 3 = Optimum ramp for stepping motors
Active limit switches	0 -3 (3)	Limit switch function: 0 = No limit switch active 1 = Negative limit switch active 2 = Positive limit switch active 3 = Both limit switches active

Type of reference movement x1 to x4	0 - 3 (0)	Specifies the limit switch to be approached in a reference movement using the commands "ref" and "reff" 0 = Negative limit switch 1 = Positive limit switch 2 = CCW reference switch (as seen from front towards motor shaft) 3 = CW limit switch (as seen from front towards motor shaft)
Clearing speed limit switch	1 - 10000 Hz (200) Series 300 4 - 10000 Hz (200) WDP3-01x	Speed when moving out of limit switch or reference switch range
Max. allowed distance limit switch	10 - 55924053 (10000)	The drive must have left again a limit switch (reference switch) within this distance.
Clearing distance limit switch	0 - 1000 steps (0)	Clearing distance from limit switch or reference switch after a reference movement (position = 0).
Encoder setting (only for Series 300 controllers)	-1 - 2 (0)	Encoder connection usage -1 = Connection 1 not used, connection 2 for electronic gear (WDP3-31x) 0 = Connection 1 for electronic gear, connection 2 not used 1 = Connection 1 for rotation monitoring, connection 2 for electronic gear 2 = Connection 1 for electronic gear, connection 2 for rotation monitoring Encoder connection 1 is only available on the WP-311 and WDP5-318 controllers
Encoder evaluation DG1 or DG2 (DG = Encoder connection)	0 - 5 (3)	Encoder resolution (increments/revolution) and encoder evaluation (single, double, quadruple) 0 = 500 encoder, single evaluation 1 = 500 encoder, double evaluation 2 = 500 encoder, quadruple evaluation 3 = 1000 encoder, single evaluation 4 = 1000 encoder, double evaluation 5 = 1000 encoder, quadruple evaluation
Gear interface signals	0 - 1 (1)	Set type of input signal at encoder input 0 = Pulse/direction signal 1 = A/B signal
Rotation monitoring x1 to x4	0 - 1 (0)	0 = Disable rotation monitoring 1 = Enable rotation monitoring
External I/O modules (only for Series 300 controllers)	0 -5 (0)	Number of external MP926 I/O modules on RS 485 HS interface
Lauer operating panel (only for Series 300 controllers)	0 - 8 (0)	Type of Lauer operating panel: 1, 2, 3, 4 = 8 Byte data of type micro, mini, midi, maxi; 5, 6, 7, 8 = 16 Byte data of type micro, mini, midi, maxi If either the value 5, 6, 7 or 8 has been set, the "External I/O modules" parameter may only be set to 0,1 or 2.

x1 to x4 = axis 1 to 4

Creating a PLC and sequence program

The sequence and PLC program parts are entered with the editors "SEQ Program" and "PLC Program". All available commands for the sequence and PLC program parts are listed on the next pages.

NOTE
Individual symbolic names for operators and operands, e.g. COM1 for c1, are entered with the editor "Symbolic Names".

Compile and download program parts into the controller

After creating a PLC or sequence program part it must be compiled (menue option "Edit/Compile" or key combination <Alt> + <F1>) and then be downloaded into the controller with the menue option "On-line/Transfer/Download". While compiling the syntax is checked, comments are deleted and symbolic names are replaced.

WARNING
For compiling and downloading, the actual controller type must be set (see menue option "Project/Controller Type" or key combination <Alt> + <F2>)

SEQ editor

PLC editor

Editor keys and key combinations

Key	Function
↑,↓, ←, →	Move cursor
↵	Hard return
Ins	Toggle insert and replace mode
Del	Delete the character to the right of the cursor
Home	Jump to the beginning of the line
End	Jump to the end of the line
Backspace	Delete the character to the left of the cursor
Page up or down	Scroll upwards or downwards by pages
Strg + Home	Jump to first line
Strg + End	Jump to last line
Tab	Enter a tab
Shift + ↑,↓, ←, →	Mark text for copying or cutting
Ctrl + c	Copy marked text to the clipboard
Ctrl + x	Cut out marked text and copy it to the clipboard
Ctrl + v	Paste text from the clipboard at the cursor position
Ctrl + y	Delete line
Ctrl + f	Find a specific string
Alt + g	Go to a specific line
Alt + F1	Compile PLC or SEQUENCE program
Alt + F2	Specify the controller type
F1	Open help window with command list
F3	Repeat previous find operation
F4	Find and replace

Command group	operator	operand(s)	Function
Loading and storing	ld	<fkvwiqmxtnp>	Loading or reading operand into the CR
	ldn	<iqm>	Loading or reading the negated operand into the CR
	st	<fnvwqmxtp>	Storing the CR content
	stn	<qm>	Storing the CR content
Setting and resetting	r	<qm>	Setting output or flag to 0
	s	<qm>	Setting output or flag to 1
Timer (availabe in the PLC prog. only)	stimer	<t>	Loading and activating timer
Logical operations	and	<iqm>	AND operation of the CR with operand
	andn	<iqm>	AND operation of the CR with negated operand
	or	<iqm>	OR operation of the CR with operand
	orn	<iqm>	OR operation of the CR with negated operand
Arithmetic commands	add	<fknvw>	Addition of the CR with operand
	div	<fknvw>	Division of the CR with operand
	mul	<fknvw>	Multiplication of the CR with operand
	sub	<fknvw>	Subtraction of the CR with operand
Relational commands	eq	<fknvwiqm>	CR equal to operand ?
	gt	<fknvw>	CR greater than operand ?
	lt	<fknvw>	CR less than operand ?
Program jump operations	jmp	<Lk>	Unconditional jump
	jmpc	<Lk>	Conditional jump if CR = 1
	jmpn	<Lk>	Conditional jump if CR = 0
	label	<L>	Label for program jump operation
	end		Program end and jump to program start
Communication with Lauer operating panel*	ld_LKey*	<knvw>	Read key status of operating panel
	ld_LBit*	<knvw> <knvw>	Read bit from data interface of operating panel
	ld_LInt*	<knvw>	Read word from data interface of operating panel
	ld_LDint*	<knvw>	Read double word from data interface of operating panel
	st_LBit*	<knvw> <knvw>	Write bit to data interface of operating panel
	st_LInt*	<knvw>	Write word to data interface of operating panel
	st_LDint*	<knvw>	Write double word to data interface of operating panel
Subprogram calls (available in the sequence prog. only)	cal	<L>	Unconditional subprogram call
	calc	<L>	Conditional subprogram call if CR = 1
	caln	<L>	Conditional subprogram call if CR = 0
	ret		Conditional subprogram call if CR = 0

Axis operating mode	mode	<x>	<k>	Axis operating mode: point-to-point mode = 0 Position following mode via encoder connection (electronic gear) =1 Position following mode via variable = 2
Positioning in point-to-point mode	vel	<x>	<fknvw>	Set speed (default setting with parameter)
	acc	<x>	<fknvw>	Maximum acceleration (default setting with parameter)
	move(f)	<x>	<fknvw>	Positioning to relative target position (f = with wait until position is reached)
	pos(f)	<x>	<fknvw>	Positioning to absolute target position (f = with wait until position is reached)
	ref(f)	<x>		Reference movement for absolute positioning (f = with wait until reference point is reached)
	stop(a)*	<x>		Stops an axis (a = stop all axes on multi-axis controllers)
	setsiglist*	<x>	<knvw>	Activate position list to toggle output (set/reset)
	settrigger*	<x>	<k>	Activate trigger function (store current position after activating trigger input)
Electronic gear in position following mode	gearn	<x>	<fknvw>	Gear ratio denominator
	gearz	<x>	<fknvw>	Gear ratio numerator (activate gear ratio)
	goff	<x>	<fknvw>	Position offset to reference variable
Linear interpolation for multi-axis controllers	setipos*	<x>	<knvw>	Target position for linear interpolation (for two or for three axes)
	linmove(f)*			Linear interpolation to relative target position (f = with wait until position is reached)
	linpos(f)*			Linear interpolation to absolute target position (f = with wait until position is reached)
Communication via serial interface	cursor	<c>	<fknvw>	Cursor positioning of VT52 terminal or FT2000 terminal
	screen	<c>	<fknvw>	Screen control for VT52 terminal or FT2000 terminal
	rec_dez	<c>	<fnvw>	Receive decimal number, convert to binary number, and store
	rec_var	<c>	<fnvw>	Send, edit and receive number
	rec_var_n	<c>	<fnvw>	Receive number
	rec_char(_n)	<c>	<fnvw>	Receive character (_n = without waiting, no character received -> CR = -1)
	snd_char	<c>	<fknvw>	Send character
	snd_dez	<c>	<fnvw>	Convert binary number to decimal number and send
	snd_str	<c>	<fknvw>	Send a string
	snd_var	<c>	<fknvw>	Send number
Read/output analog values via analog interface	getanalog*	<a>	<knvw>	Read voltage at analog input (1st operand=analog module, values via analog 2nd operand=analog input)
	setanalog*	<a>	<knvw>	Output voltage at analog output (1st operand=analog module, 2nd operand=analog output)
Miscellaneous commands	amp	<x>	<k>	Switch power controller off or on (0 = off, 1 = on, CR is 0 when power controller is off)
	brake*	<x>		Define output for activating brake (x1 ->q4, x2 ->q5, x3 ->q6, commands x4 ->q7)
	clrerror	<x>		Clear axis signal error
	getport	<im>	<fknvw>	Read inputs or flags and convert to integer number (2nd operand = number of inputs of flags)
	handshake	<i>	<q>	Synchronization with master controller for input/output (set output = 1 and wait until input = 1)
	restart			Restart sequence program
	setcurrent	<x>	<fknvw>	Set motor current (2nd operand = percentage of current set on front panel)
	wait	<fkvnw>		Suspend program execution for a specific time (ms)
	wsave			Save position variables (W variables) to EEPROM
	nop			Dummy command (500 µs to 1000 µs execution time). This command is only available in the PLC program part.

Commands only availlable in the Sequence program part

** only for Series 300 controllers*

List of operands

All operands used with a command are listed in the table on the previous page <in brackets>.
The following list shows the function and the range of values of the available operands.

Operands		Function	Range of values
a	a2	Analog interface (only for Series 300 controllers)	Input voltage: ± 10000 mV, Output voltage: + 10000 mV
c	c1	Serial interface 1	
	c2	Serial interface 2 (only for Series 300 controllers)	
f	f1, f2, f3	FRAM-Variable (only for WDP3-01x controllers)	± 2147483647
i	i..	Free signal inputs on the controller:	0, 1
	i0 to i20	Inputs i0 to i20 for single-axis controllers	
	i0 to i30	Inputs i0 to i30 for multi-axis controller WDPM3-314	
	i0 to i40	Inputs i0 to i40 for multi-axis controllers WPM-311	
	i0 to i8, i10, i11	Inputs i0 to i8, i10, i11 for WDP3-01x controllers	
k	k	Constants (value)	± 2147483647
L	L0 to L100	Labels 0 to 100 (L0 is reserved by application program for error handling)	
m	m..	Flags:	0,1
	m0	1 = Manual movement to the right	
	m1	1 = Manual movement to the left	
	m2	0 = Manual movement slow 1 = Manual movement fast	
	m3	Axis selection for manual movement:	
	m4	m3 = 0 and m4 = 0 --> axis 1 m3 = 1 and m4 = 0 --> axis 2 (for multi-axis controllers) m3 = 0 and m4 = 1 --> axis 3 (for multi-axis controllers) m3 = 1 and m4 = 1 --> axis 4 (for multi-axis controllers)	
	m10	0 = Deactivate manual operation 1 = Activate manual operation	
	m11	0 = Manual movement not active 1 = Manual movement active	

m	m..	Flags (continued)	
	m21 to m999	Freely available For Series 300 controllers with external MP 926 I/O modules: m32 to m111 = external inputs (max. 5 modules x 16 inputs) m112 to m191 = external outputs (max. 5 modules x 16 outputs)	
	m1001 to m1004	Movement status flag for axis 1 to 4 0 = axis stopped, 1 = axis positions	
	m1011 to 1014	Trigger input flag for axis 1 to 4 (only for Series 300 controllers)	
	m1015	0 = Invalid FRAM variables 1 = Valid FRAM variables (only for WDP3-01x controllers)	
n	n1 to n99	Indirect access via variable v1 to v99 and w100 to w499	1 to 499
p	p1	Encoder 1 (only possible with WP-311 and WDP5-318 controllers)	
	p2	Encoder 2	
q	q0 to q9	Signal outputs q0 to q9 for Series 300 controllers	0,1
	q0 to q3	Signal outputs q0 to q3 for WDP3-01x controllers	
t	t0 to t9	Timers 0 to 9	0 to 864000 (x 100 ms)
v	v..	Variables:	± 2147483647
	v0	Axis number in case of error in sequence program part	
	v1 to v99	Freely available	
	v100	Error code for the seven-segment display	
	v101 to v104	Position following variable for axis 1 to 4	
	v111 to v114	Trigger position for axis 1 to 4	
w	w100 to w499	Position variables 0 to 499 for axis 1, 2, 3, 4	
x	x1 to x4	Axis 1 to axis 4 (x2, x3, x4 for multi-axis controllers)	

Error messages while programming

Messages while compiling	Help for error rectification
No memory available	Make 555 kByte MS-DOS memory available (deactivate other MS-DOS applications)
Compiler not initialized	Select available controller type from the „Project/Controller Type“ menue option
Preprocessor not initialized	Too many symbolic names in assignment list --> reduce number of symbolic names
Input line too long	Shorten the program line
Output line too long	Shorten the program line
1st macro statement too long	Shorten symbolic names
2nd macro statement too long	Shorten symbolic names
Too many lines	Reduce number of symbolic names
Too many errors	Eliminate programming errors
$ABL_START not found	Insert $ABL_START at the beginning of the SEQ program component (in second line)
$ABL_END not found	Insert $ABL_END at the end of the SEQ program component (line before last)
$ABL_START already exists	Delete $ABL_START from SEQ program component
$ABL_END already exists	Delete $ABL_END from SEQ program component
Too many lines in SEQ section	Delete lines from SEQ program component
$SPS_START not found	Insert $SPS_START at the beginning of the PLC program component (in second line)
$SPS_END not found	Insert $SPS_END at the end of the PLC program component (line before last)
$SPS_START already exists	Delete $SPS_START from PLC program component
$SPS_END already exists	Delete $SPS_END from PLC program component
Too many lines in PLC section	Shorten PLC program component
$START_OF_OED3_UPLOAD not found	Insert $START_OF_OED3_UPLOAD at the beginning of the program component
$END_OF_OED3_UPLOAD not found	Insert $END_OF_OED3_UPLOAD at the end of the program component
$START_OF_OED3_UPLOAD already exists	Delete $START_OF_OED3_UPLOAD from the beginning of the program
$END_OF_OED3_UPLOAD already exists	Delete $END_OF_OED3_UPLOAD at the end of the program
Unrecognized compiler error	Call Technical Services department, phone: (07821) 946-257
Invalid operator	See chapter 6.1.3.2, command list
Invalid operand	See chapter 6.1.3.2, command list
Operands missing	See chapter 6.1.3.2, command list
Too many operands	See chapter 6.1.3.2, command list
Invalid range of values	See chapter 6.1.3.3, operand list
Invalid operand type	See chapter 6.1.3.2, command list

Error messages	Help for error rectification
Connected with controller with old software	OED3 version of controller and ProOED3 version do not match (e.g. OED3 version 2 and ProOED3 version 3)
Controller does not answer	Supply voltage not available or link to controller disrupted
Other error messages	Call Technical Services department

Controller error messages

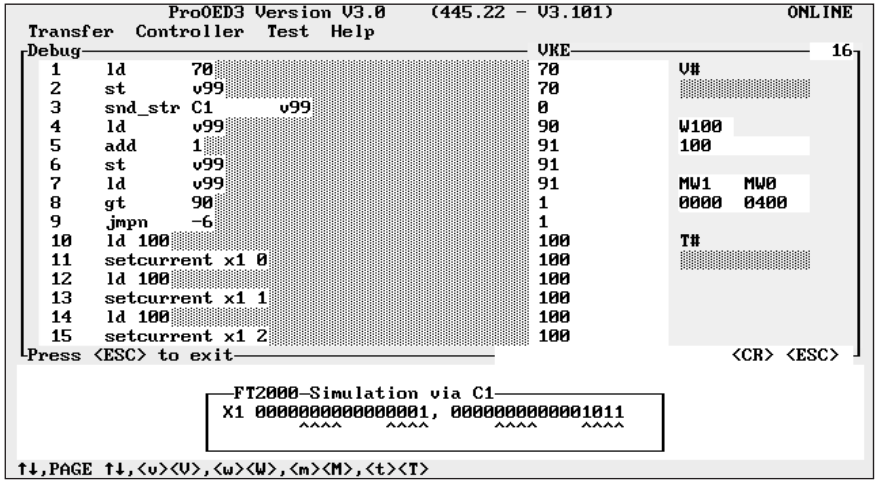
Errors are displayed on the controller seven-segment display or in an error menue on the PC or terminal depending on the setting of the "Error handling" control parameter.
Also the response to axis signal errors (e.g. limit switches, stop etc.) can be defined by the application program.
If error handling is not effected by the application program (see parameter setting), errors can be acknowledged by the front panel keys.

Controller seven-segment display	Cause	Help for error rectification
A..	Error during self-test	Technical Services department
03	Short-circuit between two motor leads	Check cabling; it may be necessary to replace the motor
04	Power controller not ready Line interruption	See power controller troubleshooting table Disconnect the unit and check the cable
05	Overvoltage on power controller	Connect a bleed resistor
07	Power controller overtemperature	Let the power controller cool down while the motor is at a standstill
08	Error on encoder for electronic gear line broken	Check encoder wiring
09	Motor overtemperature	Reduce the phase current, reduce the load
11	Power controller undervoltage	Check the voltage supply
12	Rotation monitoring active, contouring error	Check mechanical components for ease of movement
14	Power controller no supply voltage or defective	Check voltage supply; it may be necessary to replace the power controller. Switch on supply for power controller first, then for processor unit.
16	Short-circuit on one output	Check signal connector wiring
20	Incorrect limit switch LIMP or limit switch malfunction	Invert sense of rotation of the motor. Check function of the limit switch LIMP

21	Incorrect limit switch LIMN or limit switch malfunction	Invert sense of rotation of the motor. Check function of the limit switch LIMN
22	CW limit switch LIMP activated	Move out of the limit switch range
23	CCW limit switch LIMN activated	Move out of the limit switch range
26	Reference switch defective or disconnected	Check reference switch
30	STOP input active	Deacitvate STOP input
40 *41* *42*	Internal errors: 40 = Error during initialization 41 = Error in SEQUENCE component 42 = Error in PLC component	Call Technical Services department.
48	OED3 operating system not installed on controller	Call Technical Services department.
52	No link via RS485 HS interface	Check wiring to external MP926 I/O modules Specify the correct number of MP926 I/O modules with the parameter "External I/O modules"
55	Controller defective	Call Technical Services department.
56	No EEPROM available	Call Technical Services department.
57	EEPROM write error	Call Technical Services department.
80	Battery voltage low	Replace controller battery. Caution! Data may be lost!
98	Error handling by application program	Error rectification by OED3 application program. Change the the "Error handling" control parameter in ProOED3.
99	Error display by ProOED3	Analyze with PC or terminal (see description of error menue on the following page)

Error menue on PC or operating terminal

A detailed error analysis is possible with the following error menue on the PC (with ProOED3) or operating terminal, if the number "99" is displayed in the controller seven-segment display.



Error menue during FT2000 terminal simulation

The error menue displays errors in encoded format line by line (for error descriptions, see below).
To display the next two lines, press the return key on the PC or the operating terminal.

NOTE
Axis signal errors can be handled by the application program if the "Error handling by user" control parameter is set to "2" and if the corresponding error handling routine is programmed in the subprogram starting from "Label L0". Axis signal errors can be reset in the program with the "clrerror" command.

Error display	Meaning		
Controller error xxx	**xxx**		**Controller error code**
	000	=	Program error in line xxx, see below
	219	=	Error during RS 485 HS interface initialization
	222	=	Error in parameter data
	233	=	Error at "setipos" (too many axes specified)
	234	=	No EEPROM available
	236, 237	=	Incorrect data type when reading data with the command "ld"
	238, 239	=	Incorrect data type when storing data with the command "st"
	249	=	Label does not exist
	250	=	Multiple label
	251	=	Jump outside of application program (e.g. "jmp 3000")
	252	=	Incorrect operand data type specified
	253	=	Unrecognized command
	254	=	Subprogram call depth exceeded (max. 7)
	255	=	One or more signals of axis x1 active, see below
	256	=	One or more signals of axis x2 active, see below
	257	=	One or more signals of axis x3 active, see below
	258	=	One or more signals of axis x4 active, see below
	259	=	Error on serial interface
	260	=	Invalid character for transmission (command "snd_char")
	263	=	Invalid characters for transmission (command "rec_var" or "rec_var_n" or "rec_dez")
	264	=	Axis specified several times with "setipos" command
PLC: xxx SEQUENCE: xxx	**xxx**		**Program component and line number in which the error occurred** --> Display line number in ProOED3 debug mode
I 00000000000000000000 Bit 20 0	**Bit**		**Signal input on the controller**
	0 to 15	=	Inputs i0 to i15
	16	=	Input LIMP, positive limit switch (input i16 on multi-axis controllers)
	17	=	Input LIMN, negative limit switch (input i17 on multi-axis controllers)
	18	=	Input REF, reference switch (input i18 on multi-axis controllers)
	19	=	Input STOP, stop switch (input i19 on multi-axis controllers)
	20	=	Input TRIG, trigger input (input i20 on multi-axis controllers)
P 0000000000000000, 000000000000000 Bit 15 . . . . . .0 Bit 15 . . . . . 0 Encoder 1 Encoder 2	**Bit**		**Encoder errors**
	8	=	Contouring error
	9	=	Encoder error

C 0000000000000000, 0000000000000000
Bit 15 . . . . . .0 Bit 15 0
Interface 1 Interface 2

Bit		Serial interface error
2	=	Non-initialized interface accessed
4	=	Hardware interface already assigned
5	=	Memory error
6	=	Receive buffer too small
7	=	Send string too short
8	=	Invalid command in send string
11	=	Receive buffer overflow
12	=	Overrun error
13	=	Parity error
14	=	Framing error

X1 0000000000000000, 0000000000000000
X2 0000000000000000, 0000000000000000
X3 0000000000000000, 0000000000000000
X4 0000000000000000, 0000000000000000
Bit 15 . . . . . .0 Bit 15 0
Program error Axis signals

Bit		Programming error
0	=	One or more signals active, see below
2	=	Command not permitted in position following mode
3	=	Wait position already active (e.g. "posf", "movef")
4	=	Command not permitted with interrupted/blocked axis
5	=	Invalid master curve for ramp calculation
6	=	Insufficient information on reference variable in position following mode
7	=	Command not permitted during axis movement
8	=	Command not permitted during a reference movement
10	=	Incorrect parameter value
11	=	Value cannot be calculated
12	=	Invalid parameter value specified
13	=	Command cannot be executed under the prevailing conditions
14	=	Undefined value requested

Bit		Axis signal error	Controller error messages
0	=	Positive limit switch active	20 or 22
1	=	Negative limit switch active	21 or 23
2	=	Reference switch defective	26
3	=	Stop active	30
8	=	Contouring error	12
9	=	Encoder error	08
10	=	Power controller not ready	04
11	=	Power controller overtemperature	07
12	=	Motor overtemperature	09