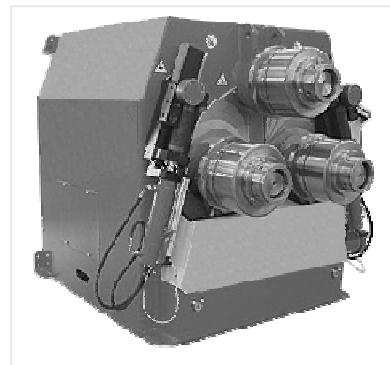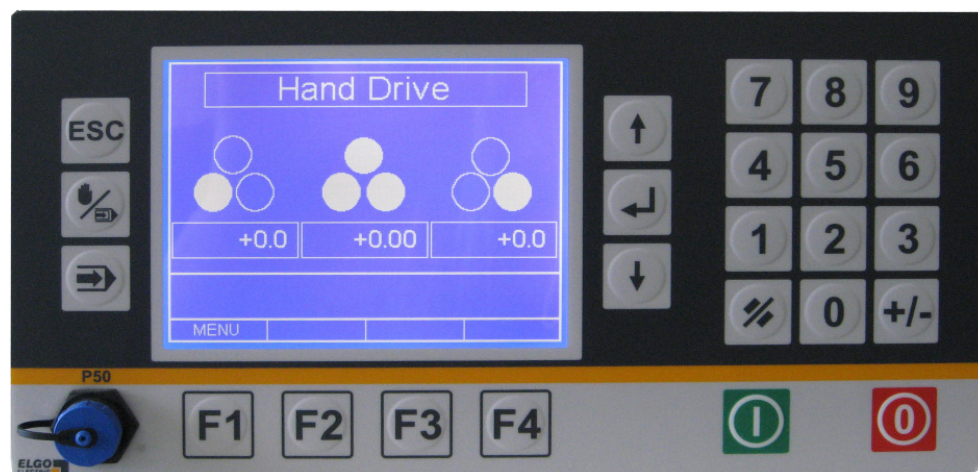# Series P50-003

Application bending machine

Series P50-003 Modular 4-axis position control for bending machines

General: The ELGO *P50-003* is a position controller for maximum four axes. Analog inputs (0-10V) or incremental encoder signals (e.g. rotary encoder) are possible, because the P50-003 is a flexible system. The software of the version *P50-003* is specially designed for bending machines. Three different drive signals (switch-mode-positioning) or an analogue voltage (PID controlled positioning) are available to activate the motors. In addition to this there are 16 inputs and outputs available for external devices. The P50 is able to memorize up to 1000 steps.

The advanced design of the P50 fulfills the requirements of the modern design of the machine manifactures. The teach-function allows the operator to memorize and to work off profiles or workpieces in an easy way. At a glance all the important data are presented and the graphical structure provides an intuitive use of the controller.

Features:

■ High resolution LCD-Monochrom-Display (320 x 240 Pixel)
■ Low-cost-terminal for all ELGO-positioning modules
■ Masks programmable with CoDeSys
■ All ELGO-CPU-Boards can be connected via RS232
■ Free configurable in- and outputs
■ Pictogram function
■ Simple operator interface
■ Integrated language switching
■ Parameter in- and output through RS232 interface possible
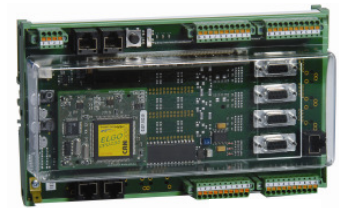
P50-PLC

P50-Terminal

Standard functions:

■ Adjustable Position control outputs (3 speeds)
■ Visualization of the current position and the programmed position
■ Absolute - or Relative positioning
■ Reference and reference run
  mm / inch - Switching
■ Pulse multiplication factor and edge triggering
■ Tolerance window
■ Software limit switches
■ Backlash
■ Up to 1000 programmable steps
■ Impulse control
■ Piece counter
■ Manual Operating Mode
■ Cutting length limit
■ Retract Function
■ Value memory

PLC - Programming

CoDeSys:
CoDeSys stands for Controller Development System and is a development tool for control systems.
CoDeSys allows the PLC programmer a simple introduction to the powerful resources of the language IEC1131 standard. The use of the editors and debugging features, has got the sophisticated development environment of higher programming languages as a model (such as Visual C + +).

Advantages:

■ Virtual commissioning through integrated simulation operation
■ Real time debugging
■ Short start-up times
■ Detailed project planning and documentation
■ Import of foreign projects
■ Project comparison e.g. for the import of modules from other projects
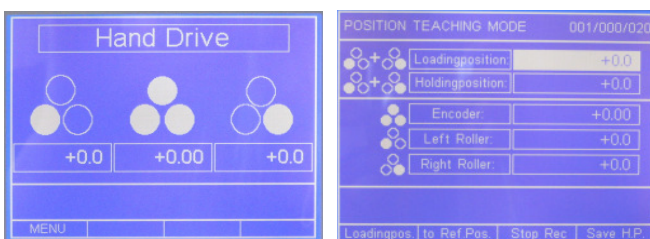
Example: Menu guide

Technical data:

Display	LCD 320 x 240 pixel, dot matrix with blue background lighting and white print
Power supply	24 VDC
Current consumption	350 mA (without measuring system)
Supply Encoder	24 VDC or 5 VDC (max. 130 mA)
Analog inputs	(option) 12 Bit resolution at 5 VDC measuring system supply
Input signals	The input assignment and the input logistics are freely programmable, Minimum pulse duration: 300 m/s, Input current/pin: max. 10 mA
Output signals	The output assignment and the output logistics are freely programmable, Open Drain (PNP), Short circuit proof, Output current: max. 80 mA, Freewheeling diodes are integrated
Value memory	E²Prom,, lifetime: 10^5 ,ein off cycle or 10 years
Connection technology	Phönix-connectors
Hardware	16-Bit High Speed - processor with 2 MByte flash-memory and 512 KByte program memory, real time clock,, CANopen-interface
Repeat accuracy	+/- 1 Increment
Input frequency	100 KHz (higher on request) corresponds at 0,1 mm resolution: 120 m/min. (2 m/s)
Operation temperature	0… +45 °C
Dimensions	
Dimensions front panel (W x H)	287,8 x 143,8 mm
Outbreak (W x H)	216 x 127 mm
Install depth without plug	28,0 mm

Dimensions:

P50-Terminal

P50-PLC
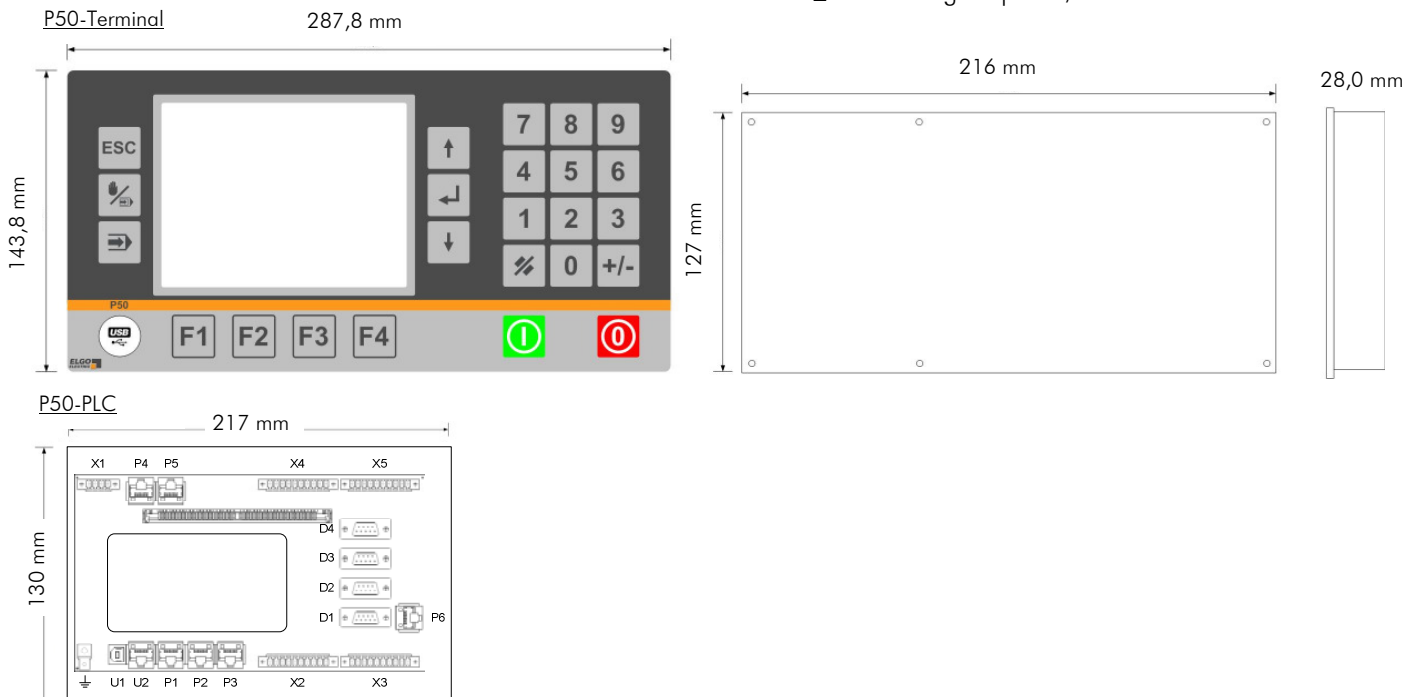
Order designation:

For orders please use the following order code:

P50 - _ _ _ - _ _ _ - _ _ _ - _ _ - _ _
A A A - B B B - C C C - D D - E E

A Version
PLC   programmable logic controller
LCT   Low-Cost-Terminal
TSM   Touch Screen Monochrom

B Version
000   ELGO standard
003   Application bending machine

C Power supply
024   24 VDC

D Measuring inputs for SPS
X   not equipped
0   A, B, (PNP) 24 VDC supply measurement systems 24 VDC–20 KHz
1   A, B, 0 (PNP) 24 VDC supply measurement systems 24 VDC-20KHz
2   A, A´, B, B´ 24 VDC supply measurement systems 5V-TTL-100KHz
3   A, A´, B, B´,0, 0´24 VDC supply measurement systems 5V-TTL-100KHz
4   one analog input (only applies to 2nd axis)
5   two analog inputs (only applies to 2nd axis)

E Outputs (Drive signals for each axis for PLC)
X   not equipped
0   digital switch outputs (transistor outputs, PNP)
1   Analog output PID (PID regulated)
2   Analog output +/- 10 V