Controller for sheet metal shear applications up to 4 axes
- Selectively with 7” or 10.1” widescreen colour TFT
- Navigation via high-quality resistive touchscreen
- External control panel with keypad available
- Precise positioning of the back gauge
- Cutting gap and cutting angle control
- Sheet support and retract function
- Adjustable cutting length limitation
- RTO (return to operator) function
- Panel based construction
- USB interface

**SERIES P52-100**

Compact 4 axes CNC controller with touchscreen
Customized version for metal shear applications
Product description:
The compact ELGO CNC controller **P52-100** is a cost-effective solution, which has been specially designed for a wide range of metal shear applications. Due to the user-friendly interface, all essential requirements of modern sheet metal shears can be fulfilled. These include the positioning resp. controlling of the back gauge, cutting length, cutting angle and cutting gap.

Based on the given material properties and sheet thickness, the controller is able to calculate and assign the settings for cutting gap and cutting angle automatically. In order to optimize the production process, the adjustable cutting length limiter allows the respective optimal setting of the cutting length.

The clearly structured “Easy Mode” of the monitor shows the most important parameters at a glance. The more comprehensive “Full Mode” also includes the more specific parameters for advanced users.

By using the integrated USB interface it is possible to transfer data backups of material tables to an external data medium (e.g. USB stick or external hard disk).

Equipment properties:

**Features:**
- Controller for metal shear applications up to 4 axes
- Selectively with 7” or 10,1” colour TFT
- Program memory with any number of programs (up to 999 steps per program possible)
- Precise positioning of the back gauge
- Cutting gap and cutting angle control
- Sheet support and retract function
- Adjustable cutting length limitation
- RTO (return to operator) function

**Versions:**
- All-in-One CNC system, consisting of a controller with an integrated touchscreen panel
- Decentralized CNC system, consisting of a controller with a separate touchscreen panel

**Options:**
- External control panel with membrane keypad
- Additional auxiliary axis

Flexible machine design:
For the flexible design of the respective metal shear, two different monitor sizes (7” or 10.1”) with the same functional scope are available.

- Both versions (7” and 10.1”) can be supplied either as a compact all-in-one system or as a decentralized system (controller unit with I/Os and touchscreen panel separately). With the decentralized variant, both components can be integrated separately into the control cabinet. In this case, the touchscreen panel will be installed into the panel cut out and the external controller is snapped onto a DIN rail. This makes sense if there is only a little space behind the front panel of the control cabinet.
- Both variants can optionally be extended by an external control panel with a membrane keypad, which can arbitrarily be placed beside, above or under the controller unit.
- Images and further information can be found on last page.

**Dimensions:**

<table>
<thead>
<tr>
<th>Touchscreen panel with 7” display:</th>
<th>Touchscreen panel with 10” display:</th>
<th>External controller (decentral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W x H = 216 mm x 144 mm</td>
<td>W x H = 286 mm x 194 mm</td>
<td>W x H = 192 mm x 132 mm</td>
</tr>
<tr>
<td>Depth = 32 mm (decentral version)</td>
<td>Depth = 40 mm (decentral version)</td>
<td>Depth = 54 mm*</td>
</tr>
<tr>
<td>70 mm* (All-in-One version)</td>
<td>72 mm* (All-in-One version)</td>
<td></td>
</tr>
<tr>
<td>Cut out: 196 mm x 134 mm</td>
<td>Cut out: 266 mm x 182 mm</td>
<td></td>
</tr>
</tbody>
</table>

*) without connectors
Technical data:

<table>
<thead>
<tr>
<th>Touchscreen panel</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
<td>24 VDC +10% / -20%</td>
</tr>
<tr>
<td>Consumption</td>
<td>max. 200 mA (no load), permitted total current 1 A (without outputs)</td>
</tr>
<tr>
<td>Connection type</td>
<td>Pluggable screw terminals</td>
</tr>
<tr>
<td>Display</td>
<td>7'' Widescreen touch TFT or 10.1'' Widescreen touch TFT</td>
</tr>
<tr>
<td>Resolution</td>
<td>7'' version: 800 x 480 pixels 10.1'' version: 1280 x 800 pixels</td>
</tr>
<tr>
<td>Hardware / Software</td>
<td>ARM Cortex A8, 1 GHz clock frequency, 512 MB RAM, 4 GB Flash, Linux operating system</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>- Serial RS232 interface  - Keypad panel (option) connectable via USB  - Ethernet interface</td>
</tr>
<tr>
<td>Mounting „All-in-One“</td>
<td>Panel installation</td>
</tr>
<tr>
<td>Mounting „Decentral“</td>
<td>Panel installation (touchscreen panel) and DIN rail mounting (controller with I/Os)</td>
</tr>
<tr>
<td>Operation temperature</td>
<td>0 … +45° C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20 … +50° C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controller</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
<td>24 VDC +10% / -20%</td>
</tr>
<tr>
<td>Consumption</td>
<td>max. 400 mA (no load)</td>
</tr>
<tr>
<td>Connection type</td>
<td>Pluggable screw terminals</td>
</tr>
<tr>
<td>Encoder supply voltage</td>
<td>4 x (6 x) 24 VDC or 5 VDC; max. 130mA</td>
</tr>
<tr>
<td>System accuracy</td>
<td>± 1 increment</td>
</tr>
<tr>
<td>Analog inputs</td>
<td>4 x ±10 V, 12 Bit</td>
</tr>
<tr>
<td>Analog outputs</td>
<td>2 x ±10 V with control for hydraulic axes 2 x (4 x) ±10 V with PID control 4 x 10 V reference value for measuring systems (max. 20mA, short circuit proof)</td>
</tr>
<tr>
<td>Digital inputs</td>
<td>16 galvanically isolated inputs, freely programmable, pulse time min. 300 ms</td>
</tr>
<tr>
<td>Digital output</td>
<td>16 galvanically isolated outputs, freely programmable, max. 0.625 A each output, freewheeling circuit for inductive loads, durable short circuit proof</td>
</tr>
<tr>
<td>Input frequency</td>
<td>max. 100 kHz</td>
</tr>
<tr>
<td>Hardware / Software</td>
<td>32 Bit Microcontroller with 1MByte Flash and 128 kB RAM, real-time operating system, see <a href="http://www.freertos.org">www.freertos.org</a></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Serial RS232 interface</td>
</tr>
<tr>
<td>Operation temperature</td>
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</tr>
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</tr>
</tbody>
</table>

Functional overview:

General functions:
- Program library
- Measurement units Millimeter / Inch
- Power down memory
- Counter for machine hours
- Counter for number of strokes

Axis functions:
- Simultaneous axis movement
- Adjustable stroke
- Programmable retract

Controller functions:
- ±10 V servo control
- AC drive control (2 speeds)
- Inverter control with direction signals

Computed functions:
- Cutting length, gap and angle
- Pressure (cutting)

Programmable functions:
- Back gauge position
- Axis speed
- Cutting angle
- Cutting gap
- Cutting length
- Retract function
- Material properties
- Material thickness
- Piece counter
- Step repetition

Miscellaneous functions:
- Diagnostic tool
- Error messages
- Selectable languages
P52-100 - Compact 4 axes CNC controller with touchscreen

10.1" versions:

„All-in-One“
Controller and touchscreen panel in one device

„Decentral“
Touchscreen panel as shown above + external controller unit with I/Os for DIN rail mounting

7" versions:

„All-in-One“
Controller and touchscreen panel in one device

„Decentral“
Touchscreen panel as shown above + external controller unit with I/Os for DIN rail mounting

Hardware options:

External control panel with membrane keypad (216 mm x 144 mm)