SERIES Z-89

2/3 Axis Position Indicator

- Power down memory
- Selectable decimal point
- Multi edge function
- Pulse factor
- Reference value
- External reset or preset inputs
- Digital brightness control
1. Operation

The diagram shows a display with buttons labeled `Select`, `F`, `→`, `↑`, `in/abs`. Below is the explanation of each button:

**Select**
To select Axis by pressing sequentially. LED of selected axis illuminates

**F**
1. To select desired parameter
2. To store edited value

→
To select the digit to be changed

↑
To increment the digit between 0 and 9

**in/abs**
To change from absolute to incremental measurement. Axis must be selected first

**F + →**
To set Datum position of selected axis

**F + → + ↑ + in/abs**
Press together for 3 seconds: Mode of selected axis is activated
2. Setting of Parameters

1. Select axis X, Y or Z by pressing Select

2. Press F, →, ↑, in/abs together for 3 seconds
   Second display shows P01 for parameter 01

3. Press F. First display shows value of the parameter (i.e. 101)

4. Press → and ↑ to select and to increment the digit

5. By pressing F new value will be stored and second display goes to next parameter (P03)
   Repeat steps 3. to 5. for each Parameter.

6. Press F, →, ↑, in/abs together for 3 seconds. Parameter mode is relocked and actual
   values appear

7. Press Select until no LED’s are illuminated
### Parameters (available for each axis)
Parameters without function will be skipped

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>Selection/Adjustment</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>P 01</td>
<td>X X X</td>
<td>0 = Counting direction (up)</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Counting direction (down)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = mm Mode</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Inch Mode</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Axis not activated</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Axis activated</td>
<td></td>
</tr>
<tr>
<td>P 03</td>
<td>Decimal point</td>
<td>0 to 3 = 0 / 0.0 / 0.00 / 0.000</td>
<td>1</td>
</tr>
<tr>
<td>P 04</td>
<td>Memory</td>
<td>0 = Power down memory <strong>ON</strong></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Power down memory <strong>OFF</strong></td>
<td></td>
</tr>
<tr>
<td>P 05</td>
<td>Buttons</td>
<td>X X</td>
<td>00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = F and → for setting datum is activated</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = F and → for setting datum is not activated</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = incr/abs activated</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = incr/abs not activated</td>
<td></td>
</tr>
<tr>
<td>P 06</td>
<td>Multi edge trigger</td>
<td>0 = One edge multiplier</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Two edge multiplier</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = Four edge multiplier</td>
<td></td>
</tr>
<tr>
<td>P 08</td>
<td>Pulse multiplication factor</td>
<td>0.0001...9.9999</td>
<td>1.0000</td>
</tr>
<tr>
<td>P 09</td>
<td>Datum value</td>
<td>0.0 to 999999.9</td>
<td>0.0</td>
</tr>
<tr>
<td>P 14</td>
<td>Display brightness</td>
<td>0...9 = 0 = dark, 9 = bright</td>
<td>5</td>
</tr>
<tr>
<td>P 15</td>
<td>Function of input ST 1 (4,5,6)</td>
<td>0 = Preset datum</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = Reset</td>
<td></td>
</tr>
<tr>
<td>P 16</td>
<td>Configuration</td>
<td>1 = Loading of default parameters (all three axis will be defaulted again)</td>
<td>0</td>
</tr>
<tr>
<td>P 24</td>
<td>Tool offset</td>
<td>activated by input/ST5 (under development)</td>
<td>0.0</td>
</tr>
<tr>
<td>P 99</td>
<td>Software Version</td>
<td>Displays the software number and version</td>
<td></td>
</tr>
</tbody>
</table>
4. Connections

Built on housing

ST 1A

BU 3 BU 2 BU 1

ST 4 ST 3 ST 2 ST 1

ST 1

1 2 3 4 5

Panel housing

ST 1A

BU 3 BU 2 BU 1

ST 4 ST 3 ST 2 ST 1

BU 1...3 (resp. ST 2...4)

Encoder system

Pin 1 = 0 V GND
Pin 2 = 24 VDC out
Pin 3 = A
Pin 4 = B
Pin 5 = PE
Pin 6 = A’ Option
Pin 7 = B’ Option
Pin 8 = Z Option
Pin 9 = Z’ Option

* Functions are adjustable in Register P15

Assembly - Built on housing:

Bottom side

2 press nuts M6

The measuring system connectors are depending upon assembly 9 pin D-SUB’s or 5 pin screw terminals

ST 1

DC-POWER SUPPLY and Inputs (PNP)
Pin 1 = PE
Pin 2 = 0 V GND
Pin 3 = +24 VDC in
Pin 4 = Input X Axis*
Pin 5 = Input Y Axis*
Pin 6 = Input Z Axis*
* Functions are adjustable in Register P15

ST 1A

AC-POWER SUPPLY (115/230 VAC)
Pin 1 = L1
Pin 2 = N
Pin 3 = PE
## 5. Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>7 digits red, 14 mm high</td>
</tr>
<tr>
<td>Power supply</td>
<td>24 VDC, +/- 10% or 115/230 VAC (+/- 10 %)</td>
</tr>
<tr>
<td>Consumption without measuring systems</td>
<td>max. 150 mA</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>0° ...+ 50° C</td>
</tr>
<tr>
<td>Encoder supply</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Counting frequency/Encoder</td>
<td>20 KHz</td>
</tr>
<tr>
<td>Input Signals (Connector ST1)</td>
<td>PNP active high</td>
</tr>
<tr>
<td>Encoder Inputs (Connectors ST2,3,4)</td>
<td>PNP active high</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Black metal panel housing</td>
</tr>
<tr>
<td>Dimensions</td>
<td>w x h = 144 x 144 mm</td>
</tr>
<tr>
<td>Installation depth</td>
<td>85 mm with Encoder Connector</td>
</tr>
<tr>
<td>Cut out</td>
<td>w x h = 138 x 138 mm</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 43</td>
</tr>
</tbody>
</table>
6. Type designation Z-89

Z 89 – 000- 024 – XYZ –XXXXXX

Z = Indicator/Counter
2 or 3 axis indicator, 7 digit 14mm display

Version
000 = standard
001 = first special version
etc.

Power supply
024 = 24 VDC
115 = 115 VAC
230 = 230 VAC

Encoder input
0 = A/B  24V/24V 20KHz PNP (Phoenix connectors)
1 = A/B/0  24V/24V 20KHz PNP (D-SUB Connectors)
2 = A /A  B /B  24V/TTL 100KHz PNP (D-SUB Connectors)
3 = A /A  B /B  0 /0  24V/TTL 100KHz PNP (D-SUB Connectors)
4 = A /A  B /B  0 /0  5V/TTL 100KHz PNP (D-SUB Connectors)
5 = A, B  5V/5V 100KHz PNP (Phoenix connectors)
6 = A/B  24V/24V 100KHz PNP (D-SUB Connectors)
X = Axis not active (only 2 axes version)

Special Features
A = Free standing housing
S = Serial link RS 232*
E = External input
C= Can BUS Interface*

*under construction
7. Liability exclusion / Guarantee

We have checked the contents of this instruction manual carefully, to the best of our knowledge and belief for conformity with the described hardware and software. Nevertheless errors, mistakes or deviations can not be excluded, therefore we do not guarantee complete conformity. Necessary corrections will be included in the subsequent editions. We appreciate your ideas and improvement suggestions very much. Reprint, duplication and translation, even in extracts, are only allowed with a written authorization by the company ELGO Electric GmbH. We constantly strive for improving our products, therefore we keep all rights reserved for any technical modifications without any notice.

ELGO Electric does not assume any liability for possible errors or mistakes.

The guarantee period is one calendar year from the date of delivery and includes the delivered unit with all components. ELGO Electric GmbH will at its option replace or repair without charge defects at the unit or the included parts, verifiable caused by faulty manufacturing and/or material in spite of proper handling and compliance to the instruction manual.

Damages verifiably not caused by ELGO-Electric GmbH and due to improper handling are excluded from any guarantee e.g. by applying faulty voltage, diffusion of liquid into the interior of the engine, using force, scratching the surface, chemical influences etc.!!

Subject to modifications © ELGO Electric GmbH 2006

ELGO - Electric - GmbH
Measure - Control - Position
Carl - Benz - Straße 1, D-78239 Reilasingen
phone: 0049-7731/93 39 - 0, Fax: 288 03
Internet: www.elgo.de, Mail: info@elgo.de