SERIES Z59

2/3 Axis Position Indicator

- Power down memory
- Switch over for absolute or relative measurement
- Digital Display brightness control
- Reference value
- mm/inch switch over
- Pulse scaling factor
- Selectable decimal place
1. OPERATION 2

2. SETTING OF PARAMETERS 4

3. PARAMETERS 5

4. CONNECTIONS 6

5. TECHNICAL SPECIFICATIONS 7

6. MAGNETIC LINEAR ENCODERS 8

7. TYPE DESIGNATION 10

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1. Operation

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.
The Axis must be selected at 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 (ie 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 step 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
### 3. Parameters
(available for each axis)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Function</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>P 01</td>
<td>X X X</td>
<td>101</td>
</tr>
<tr>
<td>P 03</td>
<td>Decimal point</td>
<td>1</td>
</tr>
<tr>
<td>P 04</td>
<td>Memory</td>
<td>0</td>
</tr>
<tr>
<td>P 05</td>
<td>Buttons</td>
<td>00</td>
</tr>
<tr>
<td>P 06</td>
<td>Edge Multiplier</td>
<td>0</td>
</tr>
<tr>
<td>P 08</td>
<td>Pulse Multiplication</td>
<td>1.0000</td>
</tr>
<tr>
<td>P 09</td>
<td>Datum value</td>
<td>0.0</td>
</tr>
<tr>
<td>P 14</td>
<td>Display brightness</td>
<td>5</td>
</tr>
<tr>
<td>P 15</td>
<td>Function of Input ST 1/4 (5,6)</td>
<td>0</td>
</tr>
<tr>
<td>P 16</td>
<td>Configuration</td>
<td>0</td>
</tr>
<tr>
<td>P 24</td>
<td>Tool Offset</td>
<td>0.0</td>
</tr>
<tr>
<td>P 99</td>
<td>Software Version</td>
<td>shows Software Number and Version</td>
</tr>
</tbody>
</table>
4. Connections

<table>
<thead>
<tr>
<th>ST 1 (PNP)</th>
<th>ST 2...4 (PNP)</th>
<th>BU 1...3</th>
<th>ST 5 (under Development)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply/Inputs</td>
<td>Encoder</td>
<td>Magnetic sensor</td>
<td>Options</td>
</tr>
<tr>
<td>Pin 1 = PE</td>
<td>Pin 1 = 0 V</td>
<td>Pin 1 = 0 V</td>
<td>Tool offset</td>
</tr>
<tr>
<td>Pin 2 = 0 V</td>
<td>Pin 2 = +12 - 30 V DC</td>
<td>Pin 2 = A</td>
<td>RS 232</td>
</tr>
<tr>
<td>Pin 3 = +24 V DC</td>
<td>Pin 3 = A</td>
<td>Pin 3 = A</td>
<td>CAN-Bus</td>
</tr>
<tr>
<td>Pin 4 = Input Axis X</td>
<td>Pin 4 = B</td>
<td>Pin 4 = B</td>
<td></td>
</tr>
<tr>
<td>Pin 5 = Input Axis Y</td>
<td>Pin 5 = PE</td>
<td>Pin 5 = PE</td>
<td></td>
</tr>
<tr>
<td>Pin 6 = Input Axis Z</td>
<td>Pin 6 = Input Axis Z</td>
<td>Pin 6 = Input Axis Z</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram](image_url)

Sensor BU1 - BU3

Sensor BU1 - BU3
5. Technical specifications

Display : 7 digits red, 10 mm high
Power supply : 24 V DC, +/- 10%
Consumption without measuring systems : max. 50 mA
Ambient Temperature : 0° to + 50° C
Encoder supply : 24 V DC
Counting frequency/Encoder (incl. edge multiplier) : 20 KHz
Maximum speed with Magnetic Sensor : 2.5 m/sec
Resolution/Magnetic Sensor : 0.1 mm
Input Signals (Connector ST1) : PNP
Encoder Inputs (Connectors ST2,3,4) : PNP
Enclosure : Black metal, for fitting into control panel
Dimensions : w x h = 96 x 72 mm
Depth : 75 mm with Encoder Connector
      95 mm with Magnetic-Sensor Connector
Cut-out : w x h = 92 x 66 mm
Protection class : IP 43
6. Magnetic Linear Encoders

Essential Features

The flexible tape is precisely calibrated with north and south poles. These divisions are picked up by a Sensor. The space between poles on the tape provides an analogue sinusoidal voltage output for the sensor.

High Accuracy

With a maximum cumulative error of 0.01 mm/m and resolution of 0.1 mm this type of measuring system can achieve a longer length (up to 32 m) with better accuracy. Blacklash, slip, screw pitch, gearbox or other mechanical errors are eliminated with this direct measurement system.

Simple Mounting

The tape is simple to attach to the machine (eg by means of double sided sticky tape). Due to its high flexibility it can cope with uneven surfaces or radi without affecting accuracy. A second steel tape is fitted on top of the magnetic tape, to protect it. The equipment will operate satisfactorily with a measuring gap of 0.1 to 2.0 mm.

High Environmental Protection Class

The magnetic measuring system offers the greatest protection against hostile environments. The Sensor is protected to IP67.

Magnetic Tape MB 20.50

The complete tape comprises 3 components.

Can be supplied in lengths from 0.5 to 32 m.
A The magnetised highly flexible tape, whose underside is bonded to:

B A ferrous flexible steel tape. This tape shields the rubber tape from mechanical damage and at the same time forms the magnetic path. This provides security against external magnetic influences. A and B are supplied factory bonded.

C To enable the above tape to be flexible for transport and mounting, the third steel tape (nonferrous) is supplied separately. This is used to protect the magnetic tape from mechanical damage and is fitted over the tape.

Sensor MS 20.59

The Sensing Head provides the signal from which the pulse output is created by the electronic system.

Dimensions:

Over the distance X, the gap between sensor and measuring tape must fall between 0,1 and 2,0 mm.

Sensor Cable Length - signal processing
The sensor is available in the following standard-length: 1 m, 3 m, 5 m, 8 m, 10 m, 15 m. Special lengths can be manufactured to order.
7. Type designation

Z 59 – 000- 024 – XYZ –XXXXXXXX

**Z** = Display/Counter

2 or 3 axis display

**Construction**

000 = standard
001 = 1st special version

etc

**Supply voltage**

024 = 24 V DC +/10%

**Encoder input**

0 = A/B 24V/24V 20KHz PNP
1 = A/B/0 24V 24V 20KHz PNP
2 = A /A  B /B 100KHz
9 = Magnetic sensor 0,1 mm resolution
M = high speed counting for MIX/EMIX/LMIX system
N = high speed counting for MIX/EMIX/LMIX system with maker input
X = Axis mot active

**Special Features**

E = External input

*under construction

**Accessories**

Magnetic tape :MB 20.50.25.0

Incremental Magnetic tape

Pole distance 2,0 mm

Length of tape

Magnetic Sensor MS 20.59.xx,x

Incremental Magnetic sensor

Length of cable

Power supply 400mA 24Vdc din rail mounting version

**MB 20.50.25.0**

**MS 20.59.XX,X**

**NG13.0**