



# HEIDENHAIN



Preliminary  
Product Information

## ND 5023

# ND 5023

– The convenient digital readout for milling, drilling, boring machines, and lathes

The ND 5023 digital readout is suited for use on manual milling, drilling and boring machines as well as lathes with up to three axes. Due to the TTL encoder input, the linear encoders LS 328 C and LS 628 C are primarily used for a measuring step of 5 µm.

## Design

The ND 5023 has been conceived for harsh workshop conditions. It features a sturdy aluminum housing and a splash-proof membrane keyboard.

With its clearly organized and user-friendly user interface, operation of the ND 5023 is very simple. The 7-inch TFT color monitor displays all the information you need to machine your workpieces.

The symmetrical design of the ND 5023 ensures ergonomic operation. All key elements are easily accessible, regardless of the mounting location, and the screen is always easy to read.

## Functions

The ND 5023 offers many useful functions for machining with manually operated machine tools. You can access the most important functions quickly and directly via function keys. Soft keys with language-sensitive information in plain language provide context-sensitive operation.

The distance-to-go display facilitates positioning tasks. It enables you to approach the next position quickly and reliably by simply moving until the display reads zero.

Of course the ND 5023 also offers special functions for milling and turning operations, such as:

- Hole patterns (linear, circular)
- Radius/diameter switching
- Sum display for the top slide

You can individually configure the display of the ND 5023 and save your settings in the user management.

## Data interface

A USB interface enables the digital readout to transfer measured values and import or export parameters and tables to a storage medium or a PC.



## Dynamic zoom

The currently moving axis can be graphically highlighted. In "dynamic zoom" mode, the position value is zoomed to its maximum size depending on the number of digits. This greatly improves legibility—especially from a great distance.



## Installation guide

When you switch on the digital readout for the first time, the ND 5023 supports you with an installation guide. You are led step by step through the most important settings until the device is ready for operation.



## Day/night switching

Depending on the ambient-light conditions at the machine, you can switch the screen of the ND 5023 to a light or dark background.

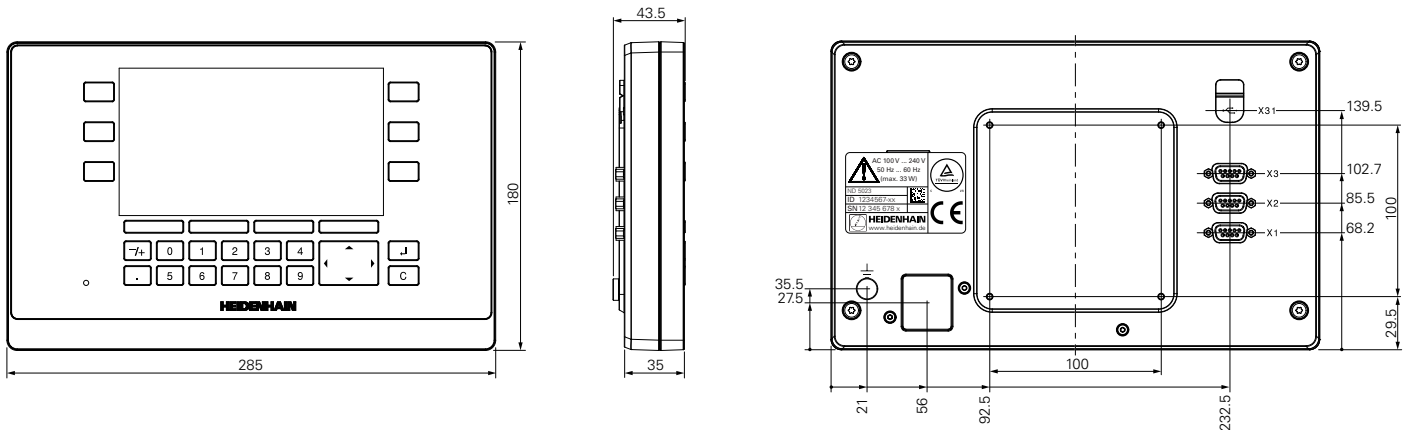




ND 5023	
<b>Axes</b>	Up to 3 axes
<b>Encoder inputs</b>	3 x TTL D-sub, female, 9-pin
Input frequency	≤ 500 kHz
Signal period	2 μm, 4 μm, 10 μm, 20 μm, 40 μm, 100 μm, 10240 μm, 12800 μm
Line count	Any
<b>Display step<sup>1)</sup></b>	<i>Linear axis:</i> 1 mm to 0.0001 mm; 0.005 mm with LS 328C/LS 628C <i>Angular axis:</i> 1° to 0.0001° (00° 00' 01")
<b>Display</b>	7-inch color wide screen (15:9), resolution 800 x 480 pixels for position values, dialog messages, input and graphic functions
<b>Functions</b>	<ul style="list-style-type: none"> <li>• Dialog-guided installation</li> <li>• User and data management</li> <li>• Moving axis highlighted</li> <li>• 10 presets, 16 tools</li> <li>• Reference mark evaluation for distance-coded and single reference marks</li> <li>• Distance-to-go display with nominal position input in absolute or incremental values</li> <li>• Graphic positioning aid</li> <li>• Scaling factor</li> <li>• mm/inch switchover</li> <li>• Integrated help system</li> <li>• Stopwatch, calculator</li> </ul>
For milling/drilling/boring	<ul style="list-style-type: none"> <li>• Calculation of positions for hole patterns (bolt circles, linear hole patterns)</li> <li>• Tool radius compensation</li> <li>• Cutting data calculator</li> </ul>
For turning	<ul style="list-style-type: none"> <li>• Freeze tool position during retraction</li> <li>• Sum display of axes in the top slide</li> <li>• Inclined top slide</li> <li>• Taper calculator</li> </ul>
<b>Error compensation</b>	Linear (LEC) and segmented linear (SLEC) over up to 200 points
<b>Data interface</b>	USB 2.0 type C <ul style="list-style-type: none"> <li>• For output of measured values and parameters to a USB stick or PC</li> <li>• For input of parameters, remote control of keys and commands</li> </ul>
<b>Accessories</b>	Single-position tilting base, multi position holder, mounting frame, protective cover, power cable
<b>Power connection</b>	AC 100 V (−10 %) to 240 V (+5 %), 50 Hz to 60 Hz (±5 %), ≤ 33 W
<b>Operating temperature</b>	0 °C to +45 °C (storage temperature −20 °C to +70 °C)
<b>Protection EN 60529</b>	IP54, back panel IP 40
<b>Mounting</b>	Single position tilting base, multiposition holder; compatible fastening systems to VESA MIS-D 100
<b>Mass</b>	≈ 1.7 kg

<sup>1)</sup> Depends on the signal period or line count of the connected encoder

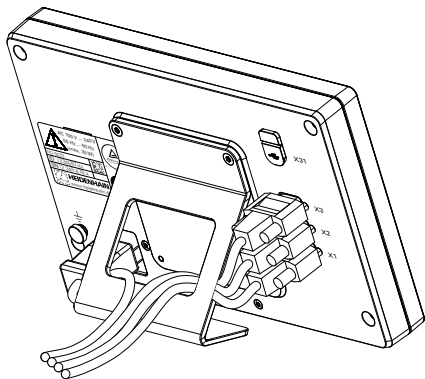
# Mounting



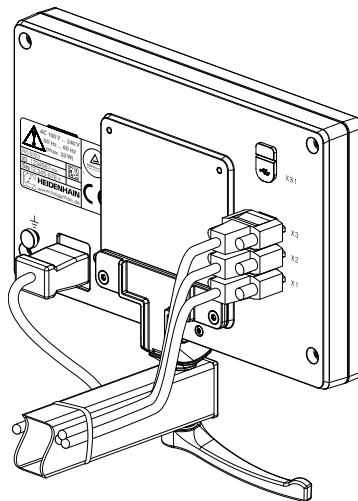
## Mounting modes for the ND 5023

The ND 5023 can be flexibly positioned with the single-position tilting base. The multiposition holder or the mounting frame is suitable for mounting on the machine.

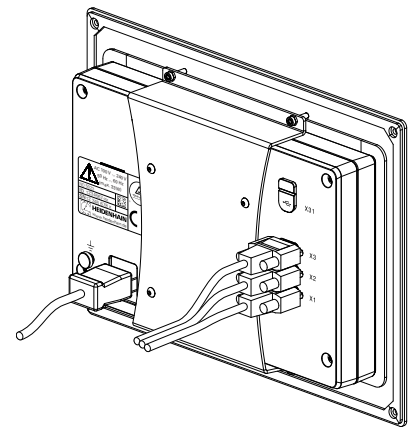
Single-position tilting base



Multiposition holder (on mounting arm)



Mounting frame



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This Product Information supersedes all previous editions, which thereby become invalid. The basis for ordering from HEIDENHAIN is always the Product Information document edition valid when the order is made.



### For more information:

Comply with the requirements described in the following documents to ensure the correct operation of the encoder:

- Operating Instructions ID 1221049
- Installation Instructions ID 1200886