

POSITIP, ND Position Display Units

For up to 6 axes



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A digital readout (DRO) consists of one or more linear encoders for traverse measurement and a display unit for position values. DROs are typically fitted or retrofitted on:

- Machine tools such as milling, drilling and boring machines, lathes, electrical discharge machines, grinding machines
- Measuring machines

Features:

- User-friendly functions for easier operation of manual machines and equipment
- Axis designations and functions adjustable for milling, drilling, boring and turning
- Problem-free installation, maintenance-free operation
- Fast payback with economical use



POSITIP 880

KT Edge Finder

The 3-D edge finder is a triggering probe. Used together with the ND 780 and POSITIP 880 display units from HEIDENHAIN, the KT simplifies workpiece locating and speeds datum setting.



	POSITIP 880
Description	Display with dialog-supported user guidance on a color flat-panel display, HELP functions, graphic functions and program memory, splash-protected full-travel keyboard
Axes	Up to 6 axes from A to Z and Z ₀ , Z _S ; $\sim 1 V_{PP}$
Display step	10 μ m, 5 μ m, 1 μ m or finer
Reference points	Milling: 99; turning: 1
Tool data	For 99 tools
Functions	<ul style="list-style-type: none"> • REF reference-mark evaluation for distance-coded or single reference marks • Distance-to-go display with nominal position input in absolute or incremental values • Contour monitoring with magnify function • Programming of max. 999 program blocks per program
For milling, drilling and boring machines	<ul style="list-style-type: none"> • Calculation of positions for hole patterns (circular and linear patterns) • Cutting data calculator <p>Probing functions for reference-point acquisition with the KT edge finder: "Edge," "Centerline" and "Circle center"</p> <p>Positioning aids for milling and roughing rectangular pockets</p>
For turning	<ul style="list-style-type: none"> • Radius/diameter display • Separate or sum display for Z and Z₀ • Taper calculator • Freezing the tool position for back-off • Oversize allowance for positioning • Multipass turning cycle
Interfaces	<p>KT edge finder</p> <p>Over separate module IOB 89:</p> <ul style="list-style-type: none"> • Position-dependent switching function (inputs, outputs) <p>RS-232-C/V.24, Centronics</p>



ND 780



ND 523

ND 780	ND 522	ND 523
Display with dialog-supported user guidance on a monochrome flat-panel display, HELP functions, graphic functions, splash-protected silent keyboard	Display with dialog-supported user guidance on a monochrome flat-panel display, HELP functions, graphic functions, membrane keyboard	
Up to 3 axes from A to Z and Z ₀ , Z _S ; \sim 1 V _{PP}	2 axes; □□TTL	3 axes; □□TTL
5 μm (with LS 328C/LS 628C)		
10		
For 16 tools		
-	Contour monitoring	
KT edge finder, edge finder with contact triggering	-	
Over separate module IOB 49: • Position-dependent switching function (inputs, outputs) • Servo control of a constant velocity	-	
RS-232-C/V.24	USB	

ND 200 Position Display Units

For one axis



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Due to their performance range, the position display units of the ND 200 series are predestined for measuring and inspection stations, but are also intended for simple positioning tasks such as infeed for a circular saw or the stroke of press travel. The switching inputs and outputs of the ND 287 permit operation also in simple automated environments. A large graphic TFT monitor displays the measured values, the status and the soft-key row.

Functions

The standard position display ND 280 provides the basic functions for simple measuring tasks. The ND 287 features numerous functions for measuring, processing and statistically evaluating positions, for example sorting and tolerance check mode, minimum/maximum value storage, and measurement series storage. These data make it possible to calculate mean values and standard deviations and display them in histograms or control charts. With its modular design, the ND 287 permits optional connection of a second encoder for sum/difference measurement or of an analog sensor, for example for temperature compensation.

Data interfaces

The ND 28x have serial interfaces for measured value transfer to a PC or printer, for input/output of parameters and compensation value lists, and for diagnostics.



	ND 280	ND 287
Input signals¹⁾	1 x \sim 11 A _{PP} , \sim 1 V _{PP} or EnDat 2.2	
Encoder inputs	D-sub connector (female), 15-pin	
Input frequency	\sim 1 V _{PP} : ≤ 500 kHz; 11 μA _{PP} : ≤ 100 kHz	
Signal subdivision	Up to 1 024-fold (adjustable)	
Display step (adjustable)	<i>Linear axis:</i> 0.5 to 0.002 μm <i>Angular axis:</i> 0.5° to 0.00001° and/or 00°00'00.1"	
Functions	<ul style="list-style-type: none"> • REF Reference mark evaluation • 2 datums 	
	–	<ul style="list-style-type: none"> • Sorting and tolerance checking • Measurement series (max. 10000 measured values) • Minimum/maximum value storage • Statistics functions • Sum/difference display (option)
Switching I/O	–	Yes
Interface	V.24/RS-232-C; USB (UART); Ethernet (option for ND 287)	

¹⁾ Automatic detection of interface

IK 220

Universal PC counter card

The IK 220 is an expansion board for PCs for recording the measured values of **two incremental or absolute linear or angle encoders**. The subdivision and counting electronics **subdivide** the **sinusoidal input signals** to generate up to **4096 measuring steps**. A driver software package is included in delivery.



	IK 220			
Input signals (switchable)	~ 1 V _{PP}	~ 11 μA _{PP}	EnDat 2.1	SSI
Encoder inputs	2 D-sub connections (15-pin) male			
Max. input frequency	500 kHz	33 kHz	–	
Max. cable length	60 m		50 m	10 m
Signal subdivision (signal period : meas. step)	Up to 4096-fold			
Data register for measured values (per channel)	48 bits (44 bits used)			
Internal memory	For 8192 position values			
Interface	PCI bus (plug and play)			
Driver software and demonstration program	For Windows 98/NT/2000/XP in VISUAL C++, VISUAL BASIC and BORLAND DELPHI			
Dimensions	Approx. 190 mm × 100 mm			

EIB Series

External Interface Box

The External Interface Box subdivides the sinusoidal output signals from HEIDENHAIN encoders and converts them into absolute position values with the aid of the integrated counting function. After the reference mark has been crossed, the position value is defined with respect to a fixed reference point.



EIB 392

For more information, see Product Information *EIB 100* and *EIB 300* as well as the Product Overview of *Interface Electronics*.

	EIB 192	EIB 392
Design	Housing	Connector
Protection	IP 65	IP 40
Input	~ 1 V _{PP}	
Encoder connection	M23 connector 12-pin, female	<ul style="list-style-type: none"> D-sub connector 15-pin M23 connector 12-pin, female
Subdivision	≤ 16384-fold	
Output	Absolute position values	
Interface	<i>EIB 192/EIB 392</i> : EnDat 2.2 <i>EIB 192F/EIB 392F</i> : Fanuc Serial Interface <i>EIB 192M/EIB 392M</i> : Mitsubishi High Speed Serial Interface	
Power supply	5 V ± 5 %	