ND 1200 QUADRA-CHEK
– the Digital Readouts for 2-D Geometries

The ND 1200 digital readouts can support up to four axes, and function as measuring computers for 2-D geometries. They are mainly suited to optical comparators, measuring microscopes and 2-D measuring machines.

Description
The ND 1200 QUADRA-CHEK digital readouts have a monochrome flat-panel screen for displayed values, dialogs and inputs, graphics functions and soft keys. The robust, diecast aluminum enclosure meets the demands of metrology and production control.

Functions
The appropriate combination of defined function keys and context-dependent soft keys always provides you with a clear overview. The innovative operator guidance provides self-explanatory information about the various functions. It already supports you while setting up the coordinate system (aligning the part and specifying the datum).

Predefined features (point, line, circle) are available for measurement. The "Measure Magic" function makes measurement especially easy: it selects that feature which best matches the shape implied by the points probed. In addition, you can establish relationships (distances, angles) between features.

You can also apply tolerance values to features and relationships. Only those tolerances actually possible are offered for the selected feature. You can create or automatically record measuring programs for repeated parts. The digital readout graphically takes you to the next measuring position during program run.

The ND 1200 captures measuring points of plane contours (2-D) either manually via crosshairs or, as an option, automatically via the optical edge detector.

Data interfaces
You use the data interfaces to output measuring points as well as to read and transmit settings, compensation values and programs. The RS-232-C/V.24 serial interface enables communication with a PC. You can connect printers or memory media to the USB port.

Graphic display
In addition to the position values, the ND 1200 also displays the features graphically. Along with the individual measuring points, the geometrical and arithmetical deviations are also shown. Furthermore, for circles the maximum inscribed circles and minimum circumscribed circles are shown.

Tolerances
You can also apply tolerance values to any feature. Only those tolerances actually possible are offered for the selected feature. This means that a point can only be assigned a tolerance check for its position, whereas a circle can be assigned position, shape and size tolerances.

Defining features
You can use the QUADRA-CHEK digital readouts to define features yourself. For example, this could be a circle whose position and dimensions are exactly defined, or an alignment line that is at a specified angle to a measurable line.

Measure Magic
The Measure Magic function recognizes the geometric pattern based on the distribution of the measuring points, and automatically calculates which feature it is, such as a point, line or circle.
If the measuring points are poorly chosen, then it may not be possible to determine the feature unambiguously. Measure Magic then chooses the more common version. You can have the feature displayed graphically, and then select from the possibilities.

	ND 1202	ND 1203	ND 1204
Axes*	2 (XY)	3 (XYQ) or 3 (XYZ)	4 (XYZQ)
Encoder inputs*	$\sim$ 1 V$_{PP}$ or $\sqcap\sqcup$ TTL (other interfaces upon request)		
Subdivision factor	10-fold (only for 1 V$_{PP}$)		
Display step[1]	Adjustable, max. 7 digits *Linear axes XYZ:* 1 mm to 0.0001 mm *Angular axis Q:* 1° to 0.0001° (00° 00′ 01″)		
Display	5.7″ monochrome flat-panel display for position values, dialogs and inputs, graphics functions and soft keys		
Functions	• Measurement of two-dimensional features (2-D) • Point measurement with crosshairs • Programming of features and parts • Measure Magic: automatic recognition of geometries • Graphic display of measurement results • Entry of tolerances • Measurement series with MIN/MAX display		
Edge detector*	Automatic point measurement via optical edge detector (option)		Upon request
Error compensation	• Linear, and segmented linear over up to 150 points • Squareness calibration • Matrix compensation over up to 30 x 30 points		
Data interface	• RS-232-C/V.24 • USB (type A)		
Other connections	• Foot switch for two functions, or remote keypad • Optical edge detector (only if the option is selected)		
Accessories	Foot switch, remote keypad, fiber-optic cables, holder, demo part, protective cover		
Main power input	100 Vac to 240 Vac (–15 % to +10 %), 43 Hz to 63 Hz		
Operating temperature	0 °C to 45 °C		
Protection EN 60529	IP 00, front panel IP 40		
Mounting*	Tilting base or mounting base		
Weight	*ND with tilting base:* approx. 4.8 kg; *ND with mounting base:* approx. 2 kg		

* Please select when ordering
[1] Depends on the signal period of the connected encoder as well as the subdivision factor

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