

# ND 1300 QUADRA-CHEK

## – the Digital Readouts for Convenient 2-D Measurement

The ND 1300 QUADRA-CHEK digital readouts can support up to four axes. They function as measuring computers with 2-D measurement of points, suiting them for measuring microscopes, measuring projectors and profile projectors, as well as for video measuring machines if the video edge detection option is installed.

### Description

The digital readouts of the ND 1300 series are characterized by the large, color touchscreen. Their enclosures consist of robust, diecast aluminum.

### Functions

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, slot and rectangle) are available for measurement. The "Measure Magic" function makes measurement especially easy. In addition, you can establish relationships (distances, angles) between features.

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.

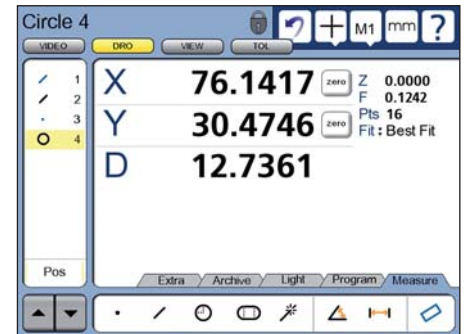
Depending on the option installed, the ND 1300 probes the points of plane (2-D) contours either automatically or manually via crosshairs, optical edge detection, or a video camera. The integrated image processing function of the video option provides a special benefit: the video image is shown on the screen in real time, and can be saved and output via the data interface. The digital readout even assumes complete control of the illumination and the motor zoom.

### 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.

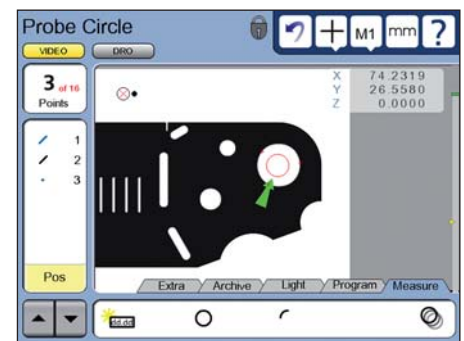
### Clearly structured display

The large, color, flat-panel touchscreen enables simple operation with intuitive operator guidance, since in each mode only those functions actually available are offered for selection. The numeric keypad and the few basic function keys are located in ergonomically favorable positions.



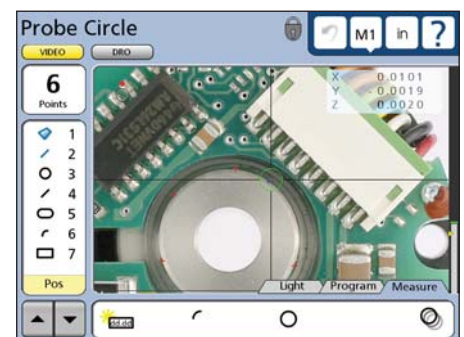
### Point measurement

The ND 1300 readouts are designed for 2-D measurements. You are provided with various tools with which you can manually or automatically measure points. For automatic point measurement you simply roughly approach the position. The actual edge is automatically detected by the active tool (option). This objective point measurement permits a high degree of repeatability. This makes it possible for you to work quickly and reliably, without tiring, while at the same time maintaining a low degree of measurement uncertainty.



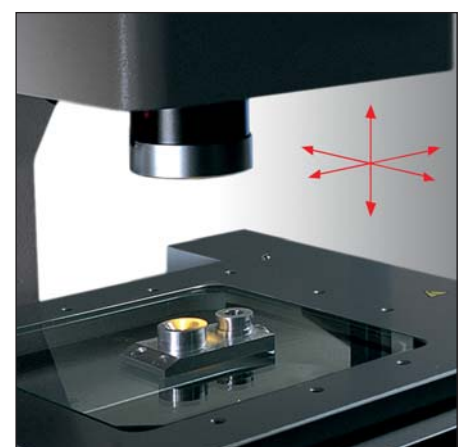
### Integrated image processing

The ND 1300 with video option optimally combines in one unit the functions of a position display unit with the capability of displaying the image of the measured object directly on the screen. The separate PC with a frame grabber or monitor with crosshair generator that you would normally need is not necessary. Video cameras with S-Video or composite interfaces can be connected.



### Axis positioning

The CNC option lets the ND 1300 work as a full-fledged control, directly controlling the positioning of the X, Y, Z and Q axes. Servo motors and stepper motors can be connected. The necessary servo amplifiers for two or three axes are available as accessories.





	ND 1302	ND 1303	ND 1304
<b>Axes*</b>	2 (XY)	3 (XYQ) or 3 (XYZ)	4 (XYZQ)
<b>Encoder inputs*</b>	~ 1 V <sub>PP</sub> or □□ TTL (other interfaces upon request)		
<b>Subdivision factor</b>	10-fold (only for 1 V <sub>PP</sub> )		
<b>Display step<sup>1)</sup></b>	Adjustable, max. 7 digits <i>Linear axes XYZ: 1 mm to 0.0001 mm; Angular axis Q: 1° to 0.0001° (00° 00' 01")</i>		
<b>Display</b>	8.4" color flat-panel display (touchscreen); resolution: SVGA 800 x 600 pixels, for position values, dialogs and inputs, graphics functions, soft keys, and display of video images with the <i>Video</i> option		
<b>Functions</b>	<ul style="list-style-type: none"> <li>• Measurement of two-dimensional features (2-D)</li> <li>• Point measurement with crosshairs</li> <li>• Programming of features and parts</li> <li>• Measure Magic: automatic recognition of geometries</li> <li>• Graphic display of measurement results</li> <li>• Entry of tolerances</li> </ul>		
Edge detector* (option)	<ul style="list-style-type: none"> <li>• Automatic point measurement via optical edge detector</li> </ul>		
Video* (option)	<ul style="list-style-type: none"> <li>• Automatic point measurement via video edge detection</li> <li>• Manual autofocus (only for Z axis)</li> <li>• Show live images</li> <li>• Archive and output live images (<i>Archive</i> option, only with the <i>Video</i> and <i>Zoom</i> options)</li> <li>• Zoom and light control, programmable (<i>Zoom</i> option, only with the <i>Video</i> and <i>CNC</i> options)</li> </ul>		
CNC* (option)	<ul style="list-style-type: none"> <li>• Automation of measurement tasks</li> <li>• Axis control (for XYZQ) for servo and stepper motors</li> <li>• Autofocus via stepper-motor control</li> </ul>		
<b>Error compensation</b>	<ul style="list-style-type: none"> <li>• Linear, and segmented linear over up to 1000 points</li> <li>• Squareness calibration; matrix compensation over up to 30 x 30 points</li> </ul>		
<b>Data interface</b>	RS-232-C/V.24; USB (type A)		
<b>Other connections</b>	<ul style="list-style-type: none"> <li>• Foot switch for two functions, or remote keypad</li> <li>• Video connection for S-Video and composite (<i>Video</i> option)</li> <li>• Light control over six light sources and zoom control (for <i>Video</i> and <i>Zoom</i> options)</li> <li>• CNC outputs and inputs for joystick (for <i>CNC</i> option)</li> </ul>		
<b>Accessories</b>	Foot switch, remote keypad, fiber-optic cables, holder, servo amplifier, calibration standard, demo parts, protective cover		
<b>Main power input</b>	100 Vac to 240 Vac (-15 % to +10 %), 43 Hz to 63 Hz		
<b>Operating temperature</b>	0 °C to 45 °C		
<b>Protection EN 60529</b>	IP 00, front panel IP 40		
<b>Mounting*</b>	Tilting base or mounting base		
<b>Weight</b>	<i>ND with tilting base: approx. 4.8 kg; ND with mounting base: approx. 2 kg</i>		

\* Please select when ordering; the options *Edge detector* and *Video* cannot be combined

<sup>1)</sup> Depends on the signal period of the connected encoder as well as the subdivision factor

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