

Spindle Position Displays

Hollow shaft max. $\varnothing 25$ mm, manual format alignment with actual value correction

Display LCD two lines, interface RS485

N 141



N 141 with cable output

Features

- Electronic spindle position display
- Absolute multiturn measuring system
- Display: LCD backlit, two lines
- Actual value and target display
- Hollow shaft $\varnothing 20$ mm / $\varnothing 25$ mm
- Interface RS485
- Resolution: 2304 steps/revolution ± 4096 revolutions
- Button for display running value/tool radius

Technical data - electrical ratings

Voltage supply	24 VDC ± 10 %
Current consumption	≤ 30 mA
Display	LCD, 7-segment display, 2-lines, backlit
Measuring principle	Absolute multiturn measuring system
Measuring range	-999,99...+9999,99 mm -99.999...+999.999 inch
Steps per turn	2304
Number of turns	4096 / 12 bit
Spindle pitch	≤ 23 mm
Interface	RS485 (ASCII protocol)
Data memory	Parameter buffer: EEPROM Current value buffer: >10 years by integrated 3 V lithium battery
Programmable parameters	Display position horizontal/vertical Measuring unit mm/inch Counting direction Spindle pitch Spindle tolerance Positioning direction Direction arrows Tolerance window Round up/down
Standard DIN EN 61010-1	Protection class II Overvoltage category II Pollution degree 2
Emitted interference	DIN EN 61000-6-3
Interference immunity	DIN EN 61000-6-2
Approval	UL/cUL

Technical data - mechanical design

Hollow shaft	$\varnothing 20$ mm, $\varnothing 25$ mm
Operating speed	≤ 600 rpm (short-term)
Protection DIN EN 60529	IP 65
Operating temperature	-10...+50 °C
Storing temperature	-20...+70 °C
Relative humidity	80 % non-condensing
Torque support	Torque pin provided at housing
E-connection	- Cable output (30 cm) with male/female connector M16, 5-pin
Operation / keypad	Membrane with one key
Housing type	Surface-mount with hollow shaft
Dimensions W x H x L	56 x 100 x 62.5 mm
Mounting	Surface-mount with hollow shaft
Weight approx.	200 g
Material	Polycarbonate black, UL 94V-0

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Part number					
N 141.	1	0	3	A	01
					<u>Hollow shaft</u>
				A	Hollow shaft ø25 mm
				B	Hollow shaft ø20 mm
					<u>Display</u>
				A	Inclined
					<u>Voltage supply</u>
		3			24 VDC
					<u>E-connection</u>
		0			Cable output with M16 connector
					<u>Interface</u>
	1				RS485

Description

N 141 spindle position display supports the editing engineer in manual spindle positioning operations. The principal benefits of the new electronic spindle position display are saving time in machine setup and editing as well as elimination of errors when aligning formats to new position values. The absolute measuring system captures any change in position even in powerless state. The backlit LCD display provides the editing engineer with all necessary information for efficient editing of the new spindle positions. The two-line display shows both current value and target. A little arrow signalizes the editing engineer the direction the spindle must be turned to get to the new position. The keypad enables switchover from current value to a preset correction value. This is an elegant correction in position changes that for example might result from regrinding of tools. RS485 serial interface enables network of maximum 32 spindle position displays with PC or PLC. For complete solutions also memory controllers serving as decentralized operating and memory terminals are available. Up to 100 format profiles can be stored by teach-in. Upon request the desired profile is recalled upon pressing a button and transmitted to every spindle position display and shown as target.

Accessories

Connectors and cables (page %S)

Z 165.A01	Adaptor cable between cable connector M16 and female M8, 1 m
Z 165.AW1	Cable connector M16, 5-pin, less cable with integrated terminating resistor 120 Ω
Z 165.B01	Mating connector M16, 5-pin, less cable
Z 165.D05	Data and supply cable M16, Master to N 140, N 141 and N 142, 5 m
Z 165.S01	Cable connector M16, 5-pin, less cable
Z 165.V01	Coupling cable between M16 and M16, 1 m

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Terminal assignment

The diagram shows two circular connectors joined by a central coupling. The left connector is labeled 'M16 connector' and the right one is labeled 'M16 female connector'. Both connectors have five pins numbered 1 through 5. The pins are arranged in a circular pattern, with pin 1 at the bottom and pins 2, 3, 4, and 5 arranged clockwise from the top. The M16 connector has a larger outer diameter than the M16 female connector.

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