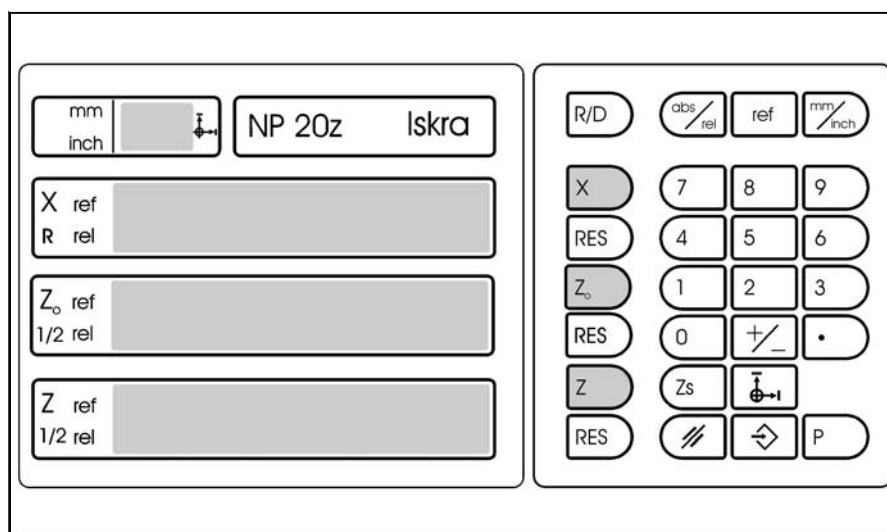
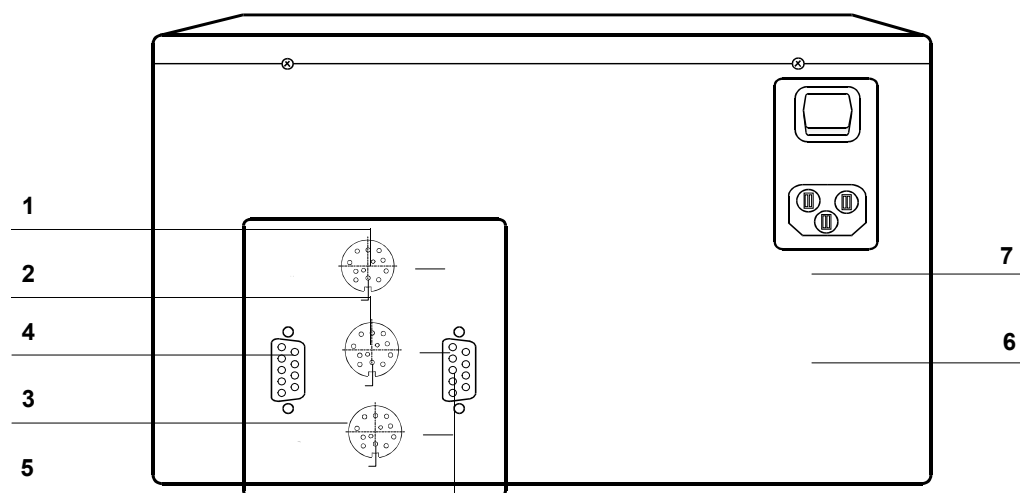


Special version for lathes with separate displays and topslide



X	Z₀	Z	axis selection keys	ref	reference point mode
RES			reset key of absolute position		measuring relative to datum points
			measuring of relative position		delete
			mm/inch measuring		enter
			diameter/radius measuring	0 ... 9	numeric value selection keys
P			parameter entry	Z_s	summing of position values Z and Z ₀



The drawing refers to "S" (box) and "P" (panel) version.
For "C" (console) and "T" (table-top) see pages: 109-110.

1	connector for X axis
2	connector for Z ₀ axis
3	connector for Z axis
4	RIE (option)
5	RS232C (option)
6	plug for main supply voltage
7	power ON/OFF switch

DIGITAL POSITION READOUT SYSTEM

NP20Z

Special version for lathes with separate displays and topslide

GENERAL DESCRIPTION AND FUNCTIONS:

The position readout device NP20Z is used in conjunction with different incremental transducers (linear scales, rotary encoders) as a system for measuring position and length on lathes.

The microcomputer based structure guarantees high operating reliability while software enables the introduction of additional new functions in order to simplify operation and to adapt the device to users.

FUNCTIONS:

q Reset	q abs/rel measuring	q 99 Datum points
q Preset	q Inch/mm measuring	q Machine tool error compensation
q Reference pont	q Radius/diameter measuring	q Parameter entry and display
q Velocity measuring		q Summing of position values Z and Z ₀

OPTIONS:

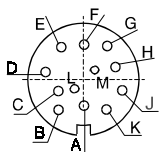
q RS 232 C	q Battery back-up system	q Touch sensor
<input type="checkbox"/> Sine current interpolation		

TECHNICAL DATA:

Supply voltage - standard:	<u>for S version</u> 220 VAC or 110 VAC	<u>for P, C, T version:</u> 85 - 250 VAC
- special order:	85 - 250 VAC	/
Supply voltage frequency	48 Hz - 62 Hz	
Power consumption	cca 20 VA	
Operating temperature	0 - 45°C	
Relative humidity	5 - 75%	
Mechanical protection	IP 42	
Vibrations	1 g from 10 to 150 Hz	
Shocks	15 g	
EMC:		
Immunity	EN 50 082/2	
Emission	EN 50 081/1	
Dimensions	W x H x D = 250 x 150 x 101 mm	
Weight	1.5 kg	

MEASURING SIGNALS:

Input signals - square-wave inverted signals (DI, DS):



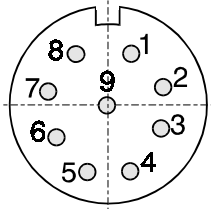
Supply voltage	5 V (from device)
Max. counting frequency	1 Mhz
Connector	12 pole, Amphenol

Axis X, Z, Z₀

contact	A	B	C	D	E	G	H	K	L
signal	shield	0V	A	\bar{A}	B	RI	\overline{RI}	+V	$\frac{L}{B}$

MEASURING SIGNALS:

Input signals - sine -wave current signals (SI option, available on special request):



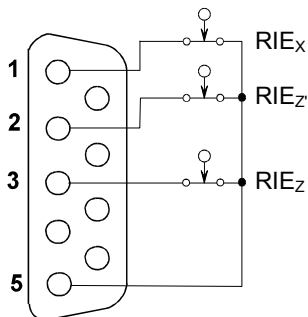
Supply voltage	5 V
Max. frequency	50 KHz
Connector	9 pole, Contact
Amplitude of measuring signals	7 to 16 μ App (1 kOhm)
Amplitude of ref. signal	2 to 8 μ App (1 kOhm)

Axis X, Z, Z₀

pin	1	2	3	4	5	6	7	8	9
signal	I _{a+}	I _{a-}	+5 V	0 V	I _{b+}	I _{b-}	I _{r+}	I _{r-}	shield

CONNECTOR FOR RIE:

external switches on machine tool



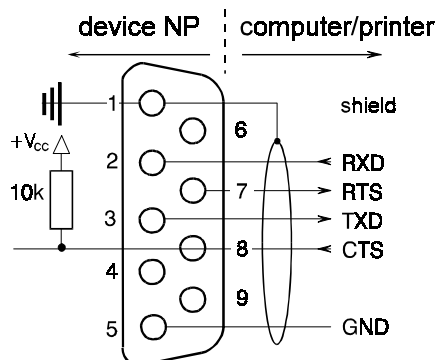
pin	1	2	3	4	5	6	7	8	9
signal	input RIE _x	input RIE _z	input RIE _z	-	+5V	-	-	-	-

Remark:

The RIE connector is used in the case of using rotary encoders as measuring transducers. A rotary encoder emits one reference pulse at each turn of the axis, therefore, a selection switch RIE has to be mounted on the machine tool for each axis.

This switch allows only one of many reference pulses in a whole measuring range to reach the readout device for calibrating purposes. The pulse is enabled when the switch is open.

CONNECTOR FOR RS 232 C:



pin	1	2	3	4	5	6	7	8	9
signal	shield	RXD	TXD	-	GND	-	RTS	CTS	-

DIGITAL POSITION READOUT SYSTEM

NP20Z

Special version for lathes with separate displays and topslide

STANDARD DELIVERY:

Digital readout system NP 20Z.

Power supply cable with plug-in connector for 220 VAC, 50 Hz, 3 m length.

Spare fuse 0.2 AT for 220 VAC, or 0.4 AT for 110 VAC.

DIMENSIONS:

For dimensions of different housing types see :

"HOUSING TYPES S, P, C and T"

pages 109-110.

OPTIONS:

All devices can be delivered with the following options:

B	Battery back-up system
TS	touch sensor
R	RIE connector
K	RS232C serial interface
SI	sine current measuring input signals with interpolation electronics (on special request)

Accessories:

For "S" - box version: stand D
For "C" - console version: console from 15 cm to 45 cm
For details see pages: 109-110

ORDERING DATA:

Standard delivery:				Options:			
NP 20Z	Housing	Input measuring signals	Power supply	B	K	TS	R
	S = Box C* = Console T = Table top P = Panel C* = In case of console DRO's ordering it is required to order separately Console itself (available lengths from 15 cm to 45 cm)	DS = 5V TTL (standard RS422A) SI = 11 μ A (option on request)	SM = Switch Mode: universal power supply 85-250V (standard for C , T and P version) LM = Linear Mode: standard for S version) LM1 : 110VAC LM2 : 220VAC	Battery back up	Communication interface RS232C	Touch sensor	RIE External switch (in case of rotary encoder)

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