DIGITAL POSITION READOUT SYSTEM NP10

Basic one axis version

X	axis selection key	**ref**	reference point mode
RES	reset key of absolute position	⬆⊕➡	measuring relative to datum points
abs/rel	measuring of relative position	▨	delete
mm/inch	mm/inch measuring	⬦	enter
''	halving of positioning value	**0** ... **9**	numeric value selection keys
P	parameter entry		

1	connector for X axis
2	RIE (option)
3	RS232C (option)
4	plug for main supply voltage
5	power ON/OFF switch
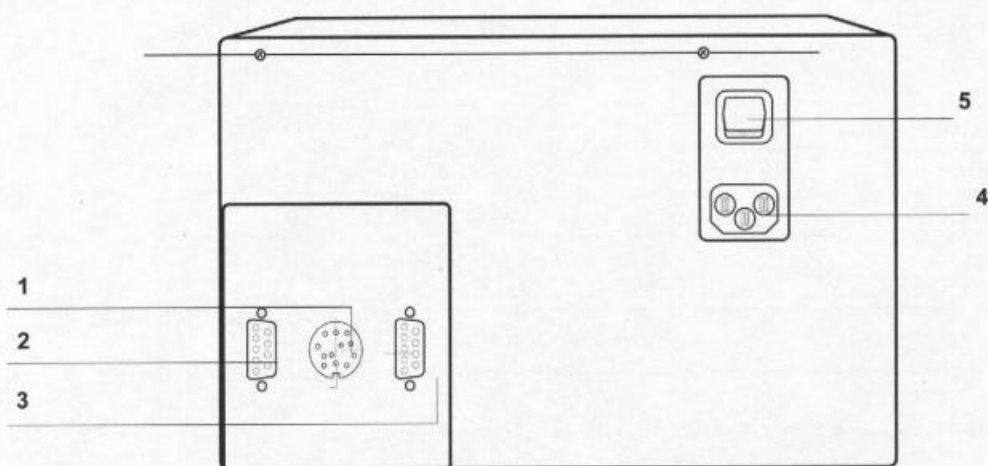
The drawing refers to "S" (box) and
"P" (panel) version.
For "C" (console) and "T" (table-top) see
pages: 109-110.

DIGITAL POSITION READOUT SYSTEM   NP10

Basic one axis version

► GENERAL DESCRIPTION AND FUNCTIONS: ◄

The position readout device NP10 is used in conjunction with different incremental transducers (linear scales, rotary encoders) as a system for measuring position and length on one axis measuring.

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:

|		
☐ Reset	☐ abs/rel measuring	☐ 9 Datum points
☐ Preset	☐ Inch/mm measuring	☐ Machine tool error compensation
☐ Reference point	☐ Halving of positioning value	☐ Parameter entry and display
☐ Velocity measuring	☐ Distance to go display	

OPTIONS:

☐ RS 232 C	☐ Battery back-up system	☐ Sine current interpolation

► TECHNICAL DATA: ◄

Supply voltage special order:	220 V +10% -15%,110 V +10% -15% 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):
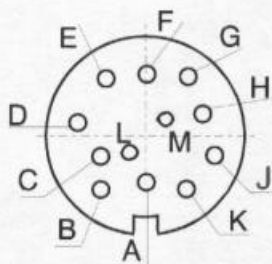
Axis X

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

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

DIGITAL POSITION READOUT SYSTEM
Basic one axis version

NP10

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 µApp (1 kOhm)
Amplitude of ref. signal	2 to 8 µApp (1 kOhm)

Axis X — pin	1	2	3	4	5	6	7	8	9
signal	I_a+	I_a-	+5 V	0 V	I_b+	I_b-	$I_{ri}+$	$I_{ri}-$	shield

---

CONNECTOR FOR RIE:
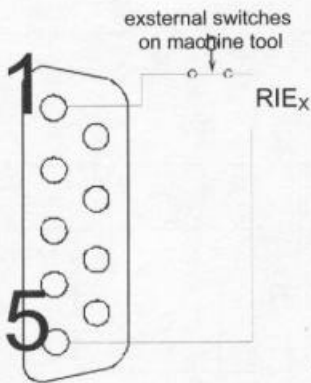
pin	1	2	3	4	5	6	7	8	9
signal	input RIE_X	–	–	–	+5V	–	–	–	–

Remark:

The RIE connector is used in the case of using rotary encoders as measuring tranducers. 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:
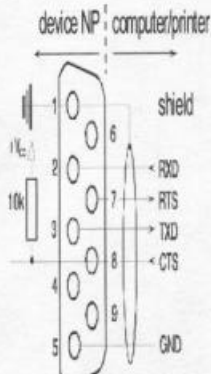
pin	1	2	3	4	5	6	7	8	9
signal	shield	RXD	TXD	–	GND	–	RTS	CTS	–

DIGITAL POSITION READOUT SYSTEM

NP10

Basic one axis version

▶ STANDARD DELIVERY:

Digital readout system NP 10.

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
SI	sine current measuring input signals with interpolation (on special request)
R	RIE connector (in case of connecting rotary encoder as measuring input)
K	RS232C serial interface

▶ 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 10	**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 lenghts from 15 cm to 45 cm)	**DS** = 5V TTL (standard RS422A) **SI** = 11 µA (option on request)	**SM** = **S**witch **M**ode: universal power supply 85-250V (standard for **C**, **T** and **P** version) **LM** = **L**inear **M**ode: standard for **S** version) **LM1:** 110VAC **LM2:** 220VAC	Battery back up	Communcation interface RS232C	Touch sensor	RIE External switch (in case of rotary encoder)