

NORDIC TRANSDUCER

# RINSTRUM

## R310 & N310

## R320 & N320

### Digital Indicator

- Trade 4,000 Divisions
- Compact ABS Housing
- Internal Batteries
- RS-232 Serial Output
- Special Functions
- 20 mm LCD Display
- Bright LED Backlighting



The Rinstrum 320 digital weight indicators offer high levels of performance and functionality by combining all the very latest advances in weighing technology into one compact package.

A powerful 24 bit Sigma-Delta A/D converter ensures fast and accurate weight readings are attained. The four layer, surface mount PCB has a low power consumption and offers extreme durability under harsh operating conditions.

All Rinstrum models will have a long market life due to the use of FLASH ROMs which allows infield updating to the later software revisions or to accept custom functions.

Another innovation is the Rinstrum "Rin-LINK" - a dedicated optical data coupling that connects to the inbuilt IR port on the indicator display for PC access to all setup and calibration functions.

The cosmetically appealing ABS housing design incorporates provision for pole mounting, anti-skid feet for desk mounting and an integral battery compartment for portable & stand-alone uses.

A 20mm, 6 digit LCD display has super-bright LED backlighting for easy reading under all conditions, including bright sunlight. The backlighting LED's use a new matrix design for very even light distribution.

The silicon keypad is extremely operator friendly; the operation is light and responsive with both tactile and audible feedback.

The blank keypad button controls the special functions; such as counting, totalising, peak-hold, etc. Labels are supplied to name the function of this key for the operator.

The N/R 300 can power up to 4 x 350 Ohm load cells and is software selectable for either 4 wire or 6 wire operation (sense wire linking is not required).

The comprehensive setup and calibration functions are displayed in plain English messages for easy configuration. The software auto-detects the type of power input (plug-pack or internal batteries) and alters the power saving functions accordingly.

( for 320 ) An on-board clock/calendar/ram ensures zero, tare, totals and other critical data is not lost or corrupted.

( for 320 ) The RS-232 serial output is rated to 15kV static protection and can be set for automatic, network or printing functions. There are two set-point outputs available for high/low level control applications.

The "Rin-VIEW" software allows PC access to all indicator functions and the ability for the setup and calibration data to be saved, restored or copied into other R320's at any time.

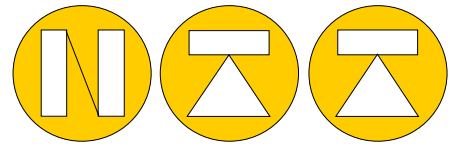
#### Standard features include:

- OIML & NSC approved, 4000 divisions
- 30,000 divs. @ 20 updates per second
- 5 points linearity correction
- Battery backed ram for zero, tare, etc.
- Clock & calendar on-board
- rin-LINK connectivity
- 20mm LCD display with LED backlighting
- 12-24VDC power input
- 4 & 6 wire load cell wiring
- Spring loaded, screw less cable terminations
- 2 isolated transistor outputs
- lb/kg Switching, Counting, Totalising, Live Weight, Hold & Peak Hold

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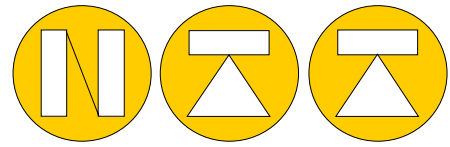
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<b>Performance</b>	<b>310 and 320</b>
Display	LCD with six 20mm high digits
Backlight	LED backlight
Display Resolution	Up to 30,000 divisions, minimum of 0.25 $\mu$ V/division (Trade 4000 divisions at 0.8 $\mu$ V/division ! only R version)
Count-by	1, 2, 5, 10, 20, 50, 100 (Entered in Displayed Weight)
Zero Cancellation	+ / - 2.0mV/V
Span Adjustment	0.1 mV/V to 3.0mV/V full scale
Stability/Drift	Zero: < 0.1 $\mu$ V/ $^{\circ}$ C, Span < 10p pm/ $^{\circ}$ C, Linearity < 20p pm, Noise < 0.2 $\mu$ Vp-p
Operating Environment	Temperature: -10 to +50 $^{\circ}$ C ambient, Humidity: <90% non-condensing
<b>Digital</b>	
Setup and Calibration	Full digital with visual prompting in plain messages
Memory Retention	Full non-volatile operation
Digital Filter	Sliding window average from 0.1 to 4.0 seconds
Zero Range	Adjustable from +/- 2% to +/-20% of full capacity
<b>A/D Converter</b>	
Type	24bit Sigma Delta
Resolution	8,388,608 internal counts
A/D Sync Filter	20Hz, FIR filter > 80dB
<b>Load Cells</b>	
Excitation	5 volts for up to 4 x 350 ohm load cells (6-wire + shield)
<b>Serial Comms</b>	
Serial output	Single RS-232 as automatic transmit, network or printer drive
OPTO-LINK	By-directional isolated infra-red to RS232 PC link. ( Rin-link )
<b>Power Input</b>	
<b>Standard</b>	<b>General</b>
	12 to 24VDC (2.5 VA maximum) ON/OFF key with memory feature
<b>Variants</b>	<b>AC</b>
	<b>Battery</b>
	AC Plug pack: 110/240VAC 50/60Hz in 12VDC 0.5A out 4 x AA batteries (Alkaline or rechargeable NiMH, NiCad etc)
<b>Dimensions</b>	
Body size	Desk stand: 164mm (L) x 75mm (H) x 83mm (D) Panel mount: 164mm (L) x 75mm (H) x 28 mm(D)
Panel cut-out	120 mm x 60 mm rectangular cut-out
<b>Features</b>	
<b>Extra Features for N &amp; R320</b>	Five point linearity correction Assignable function key for operator use. Functions include Unit switching, counting, manual hold, peak hold and livestock weighing. 2 isolated transistor drive outputs (open-emitter) RS-232 automatic transmit, network or printer driving Battery backed clock calendar
<b>Approvals R-310 &amp; R-320</b>	NSC approval pending (4000 divisions at 0.8 $\mu$ V/division). NMI approval R76 (4000 divisions at 0.8 $\mu$ V/division). C-tick approval pending.

*N-310 & N320 is the non approved versions of R-310 R-320 for normal non approved general weighing, all functions and options are the same.*

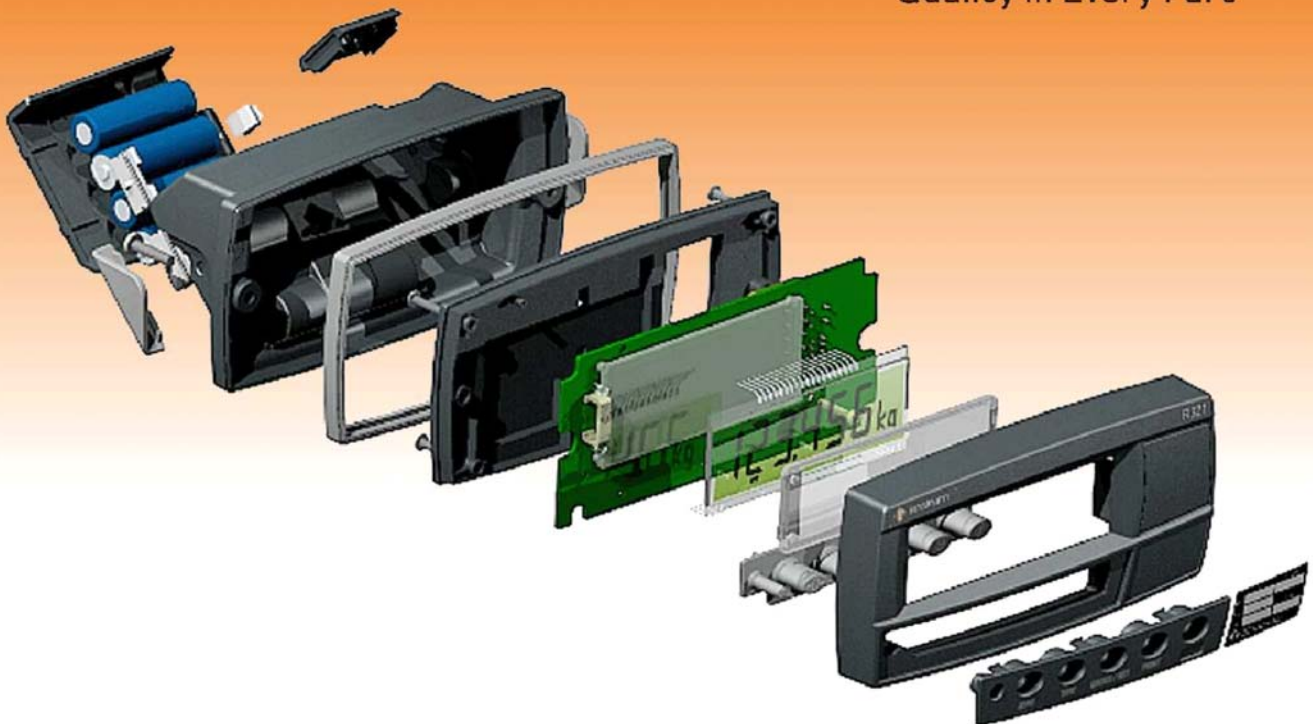


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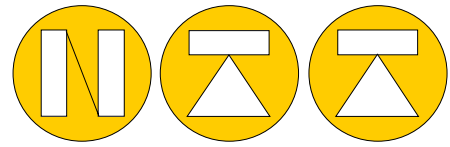


## R300 Series

Quality in Every Part



*N & R-310 / 320 building set, can be supplied as panel mount unit with good sealing, or as table stand model with external 230VAC to DC power supply or with rechargeable batteries as shown, with external charger. Bracket for wall mounting is also an option which can be supplied from stock. Stainless steel version = R-323 is also an option !*



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**N-310 Non approved**  
**R-310 Approved R76 4000d**

*For basic weighing jobs where only the weighing result is of interest, no function key, no RS232, no set-points*

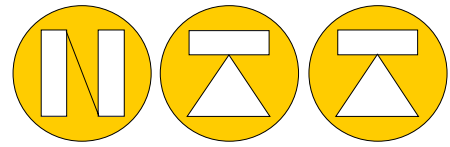
**320**



**N-320 Non approved**  
**R-320 Approved R76 4000d**

*Function key with selection of 5 different function modes  
 Five point linearity correction  
 RS232 output automatic or as network with address to more instruments  
 2 OC set-point outputs  
 2 way Rin-Link communication  
 Clock calendar  
 Peak*





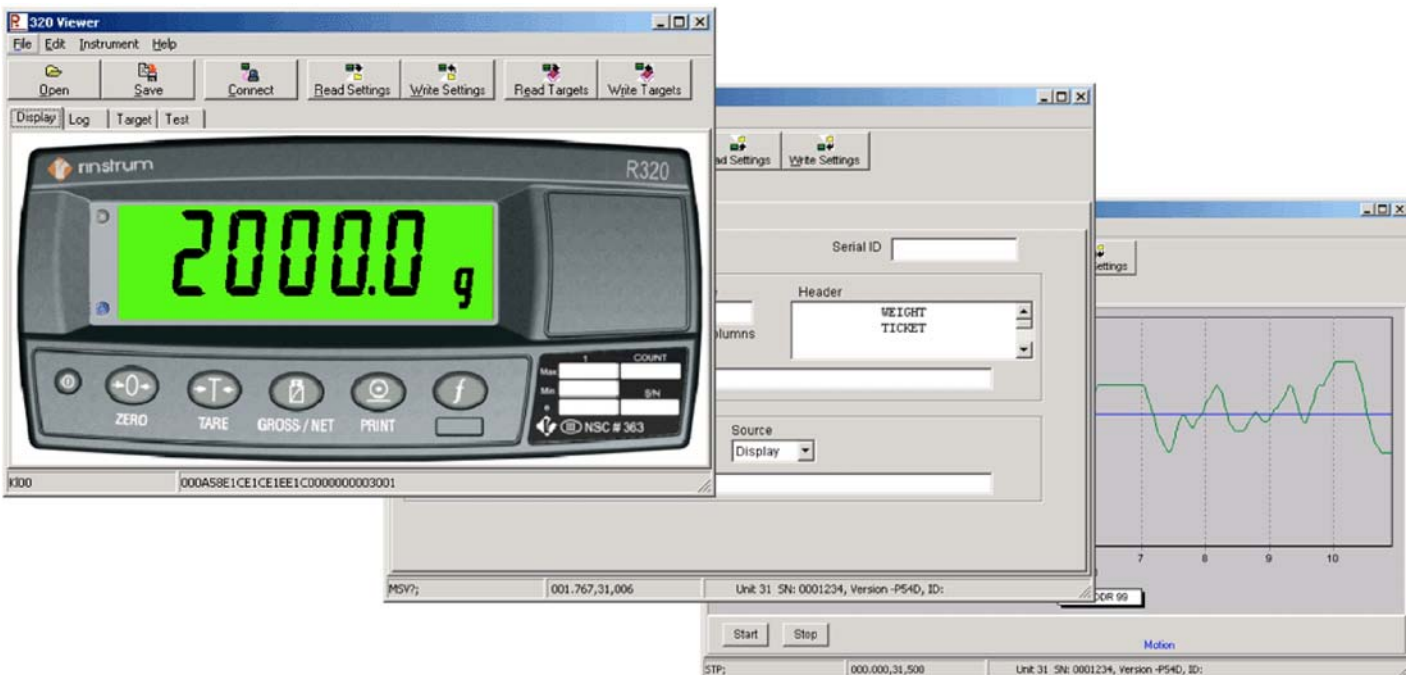
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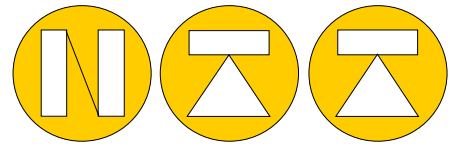
**Rin-Link** communication via external infra-red transmission as shown, mainly for use with 320 models where all setup and calibration data can be downloaded and data from 320 can be uploaded. Rin-View will show the indicator on the PC + also give the possibility to log the weighings into a ASCII file there can be used in other programs.

Now also with USB connection to PC !!



**Rin-View PC software for 320 models both for setting up, indication and logging.**





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## Mounting possibilities



*NTT supply Load cells for all type of weighing jobs in the industry of to day.*