

# RINSTRUM

## R310

### BASIC

### Digital Indicator



- Trade 4,000 Divisions
- Battery Operation
- 20 mm LCD Display
- Compact ABS Housing
- Bright LED Backlighting
- Zero, Tare, Gross/Net keys

The Rinstrum 310 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 in-field 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 back-lighting for easy reading under all conditions, including bright sunlight. The backlighting LEDs use a new matrix design for very even light distribution.

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

The R310 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.

**There are no outputs of any kind in the R310.**

**No Serial, no setpoints, no clock/cal/ram.**

**This indicator provides weight only display.**

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 R310’s at any time.

#### Standard features include:

- **OIML & NSC approved, 4000 divisions**
- **30,000 divs. @ 20 updates per second**
- **5 points linearity correction**
- **rin-LINK connectivity**
- **20mm LCD display with LED backlighting**
- **12-24VDC power input**
- **4 & 6 wire loadcell wiring**
- **Spring loaded, screwless cable terminations**

<b>Performance</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)	
Count-by	1, 2, 5, 10, 20, 50, 100 (Entered in Displayed Weight)	
Zero Cancellation	+ / - 2.0mV/V	
Span Adjustment	0.1mV/V to 3.0mV/V full scale	
Stability/Drift	Zero: < 0.1 $\mu$ V/ $^{\circ}$ C, Span < 10ppm/ $^{\circ}$ C, Linearity < 20ppm, 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	None fitted or available	
OPTO-LINK	By-directional isolated infra-red to RS232 PC 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)	
<b>Features</b>		
Extra Features	Five point linearity correction	
Approvals	NSC approval pending (4000 divisions at 0.8 $\mu$ V/division). NMI approval pending (4000 divisions at 0.8 $\mu$ V/division). C-tick approval and CE approval pending.	