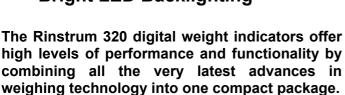# RINSTRUM R320
## Digital Indicator

- **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 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 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 R320 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.

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

The RS-232 serial output is rated to 15kV static protection and can be set for automatic, network or printing functions. There are two setpoint 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 loadcell wiring*
- *Spring loaded, screwless cable terminations*
- *2 isolated transistor outputs*
- *lb/kg Switching, Counting, Totalising, Live Weight, Hold & Peak Hold*

| Performance | |
|---|---|
| Display | LCD with six 20mm high digits |
| Backlight | LED backlight |
| Display Resolution | Up to 30,000 divisions, minimum of 0.25$\mu$V/division<br>(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: < 0.1uV/°C, Span < 10ppm/°C, Linearity < 20ppm, Noise < 0.2$\mu$Vp-p |
| Operating Environment | Temperature: –10 to +50°C ambient, Humidity: <90% non-condensing |

| Digital | |
|---|---|
| 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 |

| A/D Converter | |
|---|---|
| Type | 24bit Sigma Delta |
| Resolution | 8,388,608 internal counts |
| A/D Sync Filter | 20Hz, FIR filter > 80dB |

| Load Cells | |
|---|---|
| Excitation | 5 volts for up to 4 x 350 ohm load cells (6-wire + shield) |

| Serial Comms | |
|---|---|
| Serial output | Single RS-232 as automatic transmit, network or printer drive |
| OPTO-LINK | By-directional isolated infra-red to RS232 PC link. |

| Power Input | | |
|---|---|---|
| **Standard** | **General** | 12 to 24VDC (2.5 VA maximum) ON/OFF key with memory feature |
| **Variants** | **AC** | AC Plug pack:  110/240VAC 50/60Hz in 12VDC 0.5A out |
| | **Battery** | 4 x AA batteries (Alkaline or rechargeable NiMH, NiCad etc) |

| Dimensions | |
|---|---|
| Body size | Desk stand: 164mm (L) x 75mm (H) x 83mm (D)<br>Panel mount:  164mm (L) x 75mm (H) x  28 mm(D) |
| Panel cutout | 120 mm x 60 mm rectangular cutout |

| Features | |
|---|---|
| Extra Features | 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) |
| | Battery backed clock calendar |
| 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. |