

# RINSTRUM 2100Ex

## INTRINSICALLY SAFE DIGITAL INDICATOR

### HIGHLIGHTS

- Intrinsically Safe Ex ib IIB T5
- NMI Approved for 6,000 Divisions
- 4 x 350Ω Loadcells
- Large 27mm Display
- Serial and Setpoint Output Options

### FEATURES

The 2100Ex is approved for use in hazardous areas and fully complies with these standards:

- IEC60079.0:1998
- IEC60079.11:1999

The Hazardous Area rating is Ex ib IIB T5.

The indicator has been modified internally to ensure it can not generate enough energy to create a spark for the above rating.

The approval allows for the 2100Ex to be installed inside the hazardous area alongside the scale base. This indicator does not need to be installed in a safe area!

The 2100Ex can power up to 4 x 350Ω loadcells and doesn't require barriers to be fitted between the indicator and the loadcells. A standard platform base using up to 4 loadcells can be used in the hazardous area alongside the Rinstrum 2100Ex without any modifications.

Power connection is critical. The 2100Ex is fitted with special power input connectors that can only be plugged in to these approved power supplies:

- 0334 Ex Battery Pack with Safe Area Charger
- 0335 Ex Power Supply - 240VAC to 12VDC

The 2100Ex is fully NMI trade-approved (Certificate No. S304) when using either the above optional AC power input or the removable battery pack.

It is not possible to modify a standard 2100 for use as an Ex unit – this can only be done during manufacture. There are special Ex seals fitted to the housing which must not be broken or else the Ex approval will be void.

The large 27mm LCD is exceptionally easy to read under most conditions, but the LED backlighting, as fitted to the standard 2100, has been removed to achieve the Ex approval.



An on-board battery is fitted for the clock operation and storage of zero/tare values. The current time can be shown in the secondary display.

### AVAILABLE OPTIONS

- Serial Output

The RS-232 serial output is current limited and no other precautions are needed when connecting to another approved Ex device in the hazardous area. This allows a 2101Ex remote display to be connected directly to the 2100Ex.

- Setpoint Outputs (3)

The open collector outputs can be used for setpoint functions **ONLY** when coupled to an intrinsically approved switching module. **The Ranger 0227 Relay Output Module MUST NOT be used in Ex applications.**

The 2100Ex has the following special functions: counting, totalising, intelligent batching, peak-hold and live-weight modes. There are also three standard remote inputs that can be assigned to front key functions like zero, tare, print, etc.

The Intelligent Batching function is for single material batching/filling operations using either single or dual speed feeders. Batching accuracy is maintained by the automatic in-flight correction that is updated after every batch.

# SPECIFICATIONS

PERFORMANCE		
Display	Alpha-Numeric LCD with 6 x 27mm High Digits - No Backlighting	
Display Resolution	Up to 30,000 Divisions, Minimum of 0.25 $\mu$ V/Division	
Count-By	1, 2, 5, 10, 20, 50, 100	
Zero Cancellation	$\pm$ 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 < 0.05 $\mu$ V p-p	
Operating Environment	Temperature -10 to +50 $^{\circ}$ C, Humidity < 90% Non-Condensing	
Trade-Approved	6,000 Divisions 1 $\mu$ V/Division (Valid Only with Approved Power Supplies)	
DIGITAL		
Setup and Calibration	Full Digital with Visual Prompting in Plain Messages	
Memory Retention	Full Non-Volatile Operation	
Digital Filter	Averaging from 1 to 100 Consecutive Readings	
Zero Range	Adjustable from $\pm$ 2% to $\pm$ 20% of Full Capacity	
A/D CONVERSION		
Type	24 Bit Sigma Delta	
Resolution	8,388,608 Internal Counts	
A/D Sync Filter	Fixed 25Hz, FIR Filter > 80dB	
LOADCELLS		
Excitation	8V for Up to 4 x 350 $\Omega$ Loadcells (6 Wire and Shield)	
SERIAL COMMS		
Serial Output	Single RS-232 with Automatic Transmit, Network or Printer Drive	
POWER INPUT		
Approved Supplies	0334	Ex Safe Battery Pack and Charger, FBP1000 (Charger Must be Used in Safe Area)
	0335	Ex Safe Power Pack, 240VAC, PSE150
DIMENSIONS		
Body Size	189mm (L) x 99mm (H) x 23mm (D)	
Panel Cutout	Flush mounted with cable holes drilled separately (template provided)	
FEATURES		
Standard Features	Five Point Linearity Correction and Assignable Function Key for Operator Use	
	Assignable Function Key for Operator Use	
	Three Remote Inputs and lb/kg Switching Fitted as Standard	
	Battery Backed Clock and Calendar Fitted as Standard	
Ex Approval	Ex ib IIB T5	
OPTIONS		
Software	0224 RS-232 Serial Output, and 0225 Three Open Collector Outputs with Check-Weighing Software	
Hardware	0329 Stainless Steel Rear Housing, Gasket and Desk/Wall Bracket 0333 Desk.Wall Bracket	



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