

RANGER 2100 Ex

Intrinsically Safe Digital Indicator

- Ex ib IIB T5
- NSC 6,000 Divisions
- 4 x 350 Ohm Load Cells
- Large 27mm LCD Display
- Serial & Setpoint Output Options



The 2100 Ex 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 2100 Ex to be installed inside the Hazardous Area alongside the scale base. This indicator does not need to be installed in a safe area!

The 2100 Ex can power up to 4 x 350 Ohm 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 2100Ex without any modifications.

Power connection is critical; the 2100 Ex 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 2100 Ex is fully NSC approved (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.

Australian Made – Two Year Warranty

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:

1) 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 2101 Ex remote display to be connected directly to the 2100 Ex.

2) 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 2100 Ex has these 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	LCD with six 27mm high digits – no backlighting
Display Resolution	Up to 30,000 divisions, minimum of 0.25 μ V/division
Count-by	1, 2, 5, 10, 20, 50, 100
Zero Cancellation	+ / - 2.0mV/V
Span Adjustment	0.1mV/V to 3.0mV/V full scale
Stability/Drift	Zero: < 0.1 μ V/ $^{\circ}$ C, Span < 10ppm/ $^{\circ}$ C, Linearity < 20ppm, Noise < 0.05 μ V p-p
Operating Environment	Temperature -10 to +50 $^{\circ}$ C, humidity < 90% non condensing
Trade Approved (S403)	6000 divisions 1 μ V/div (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 +/- 2% to +/-20% of full capacity
A/D CONVERTER	
Type	24 bit Sigma Delta
Resolution	8,388,608 internal counts.
A/D Sync Filter	25/30Hz Selectable, FIR filter > 80dB
LOAD CELLS	
Excitation	8 volts for up to 4 x 350 ohm load cells (6 wire + shield)
SERIAL COMMS	
Serial Output	(Software option 0224) Single RS-232 as automatic transmit, network or printer drive
POWER INPUT	
Approved Supplies	0334 Ex safe battery pack & charger FBP1000 (charger must be used in safe area) 0335 Ex safe power pack, 240VAC. PSE150
DIMENSIONS	
Body Size	189mm (L) x 99 mm (H) x 23 mm (D)
Panel Cutout	Flush mounted with cable holes drilled separately (template provided)
FEATURES	
Standard Features	Five point linearity correction Assignable function key for operator use 3 remote inputs Battery backed clock & calendar fitted as standard
Ex Approval	Ex ib IIB T5
"RANGER-SMART"	0224 RS-232 serial output for auto, printing or network
Software Options	0225 3 open collector outputs (resources shared with remote inputs)
Hardware Options	0329 stainless steel rear housing, gasket and desk/wall bracket 0333 desk/wall bracket

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