

RINSTRUM R400 SERIES INDUSTRIAL DIGITAL INDICATORS



R423 STAINLESS STEEL INDICATOR



R420 ABS PLASTIC INDICATOR

HIGHLIGHTS

- 100,000 Divisions @ 0.25 μ V/Division
- NMI Trade Approved for 10,000 Divisions
- Built in RS-232/RS-485
- IP-65 ABS or IP-66 Stainless Steel Housing
- Drives Up to 16 x 350 Ω Loadcells
- Ethernet and Profibus DP Support
- Robust Precise Analogue Output Module

COMMON FEATURES

The R400 series of indicators are designed with both the installer and operator in mind and cover a wide range of applications. They are engineered and built to last with reliability being foremost.

The **modular design** allows for the installation to be commissioned with only the components required, saving on time and money.

Flexibility is the key with its award winning **modular accessory design**. Modules include: additional serial options, input/outputs, analogue outputs, external buttons, Ethernet, Alibi (Data Storage Device) and battery or AC option.

Superior Housings - two housing types are available:

- R420 (ABS) rated to IP-65
- R423 (stainless steel) rated to IP-66

Both housings are designed with extra attention to detail to increase their reliability in the field, thereby reducing unplanned downtime and servicing costs. For example, the R423 uses a high impact polycarbonate lens to protect the LCD from knocks.

Simple Setup - use the menu system directly via the alpha numeric keypad or the configuration utility View400 on a PC.

Operator Friendly - large multi-segment display that uses logical prompts along with dedicated and programmable function keys. Printing can be tailored with custom record, docket or reports printouts. Primary display is 29mm and secondary display 18mm.

Rugged Loadcell Input - Designed to take 16 x 350 Ω loadcells; providing flexibility and reducing the need for summing hardware, simplifying the installation and saving money. The loadcell input is protected with onboard transorbs to limit damage from external voltage surges.

Networking Capability - Support for both Ethernet and Profibus DP to improve integration into larger control systems.

MODULES

The R400 Series flexibility is provided through its broad range of modules that are easy to configure and neatly connect into the rear of the indicator. There are 4 module slots where an indicator can be equipped with only the features required for a given installation.

ROBUST INPUT/OUTPUT MODULES (M4301, M4311, M4321, M4331)

An R400 indicator can be equipped with up to 32 I/O. These I/O are electrically isolated, designed for direct connection into PLC's and are capable of driving low voltage actuators directly.

- Isolated high side (400mA current source) drivers are capable of driving low voltage actuators directly or can be connected directly with PLC controllers.
- Each module has 8 digital I/O ports which are limited to maximum input voltage of 30V and can drive up to 400mA.
- Direct connection between I/O points is supported
- Inputs are isolated to resist against system noise.

BUTTON MODULE (M4302)

The Button Module provides 4 voltage free inputs for use with switches or thumbwheels. The voltage free inputs eliminate the need to wire up complicated input driver circuits.

ISOLATED COMMUNICATIONS MODULE

Communication modules are in addition the built in RS-232/RS-485 ports on the R400 indicators.

- Fully isolated and recommended for application where there is a risk of lightning or surges or where additional communication ports are required.
- M4201 RS-232/RS-232, M4202 RS-232/RS-485, M4203 RS-485/RS-485

PRECISE ROBUST ANALOGUE OUTPUT MODULE (M4401)

The analogue module provides a 4-20mA or 0-10V analogue output and two digital I/O.

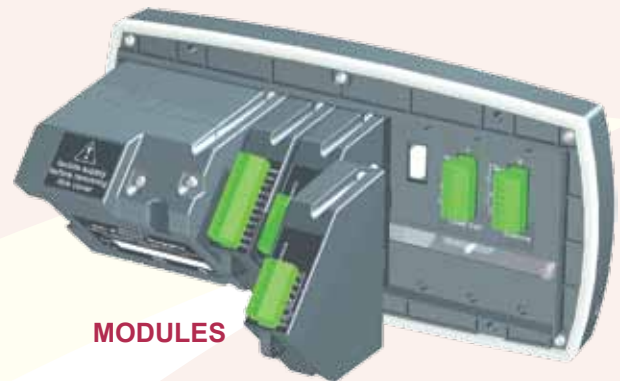
- Isolated so as to resist against system noise and interference therefore reducing unnecessary callouts
- Precise with a 400Hz (2.5ms) update rate and 1/65,000 resolution. The fast update and high D to A conversion rate give a smooth output curve which helps a PLC to see more realistic readings (2.5ms step)
- Scalable to suit the input on the PLC
- Two digital I/O provided the same as the M4301

DATA STORAGE DEVICE MODULE (M4501)

The Data Storage Module provides non-volatile alibi memory storage (6Mb) according to WELMEC 7.2 L. Compatible with later versions of software.

ETHERNET (M4221)

The Ethernet Module provides 10/100 Base TX with auto negotiation (1 x Raw bi-directional port and 10 x Raw transmit only ports).



ACCESSORIES

CONVERTER 0-10V/4-20mA INPUT (M4902)

Connects to the Loadcell Input on R400 Series indicators for a voltage or current input. Useful where an indicator needs to take an input from load pins on a crane scale for example. Suitable for pressure, displacement or strain transducers that output 4-20mA or 0-10V analogue signals.

OPTO-LINK

The magnetically coupled opto-link on the front panel provides a convenient temporary connection to a laptop - no need to access rear of the indicator.

- Transfer of setup and calibration information
- Download of software upgrades

RELAY MODULE

The relay module, used in conjunction with an I/O module, provides 8 x voltage free relay outputs rated to 250VAC and 8A.

- DIN rail mountable
- Provides N/O (normally open) and N/C (normally closed) contacts for each output

SMART WEIGHING

SUPERIOR DIAGNOSTICS

R400 series indicators have a range of diagnostic tools and features that aid system commissioning and maintenance.

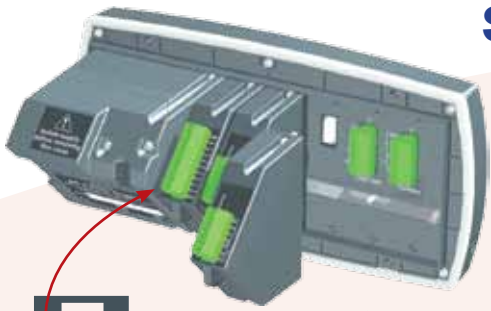
Hardware configuration report summarises how the indicator hardware is setup, providing a record for maintenance purposes or fault finding

Force Output and Test Input functions allow the installer to specifically test I/O to assist in site setup.

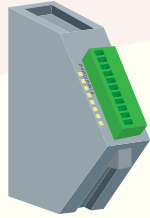
Modules can be swapped in and out without recalibration of the indicator, saving time and effort.

Status LED on each I/O.

Overload counter to review if the scale has been overloaded.



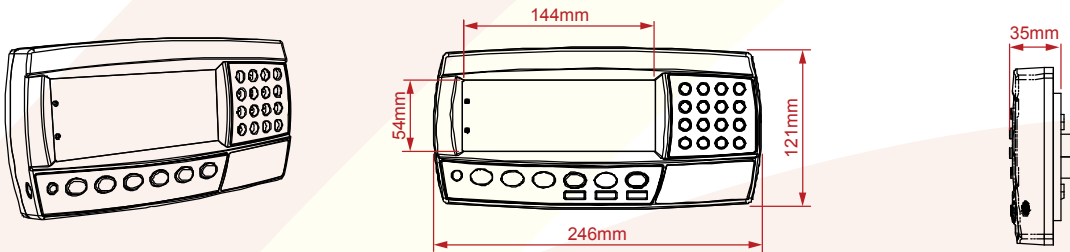
STATUS LEDs



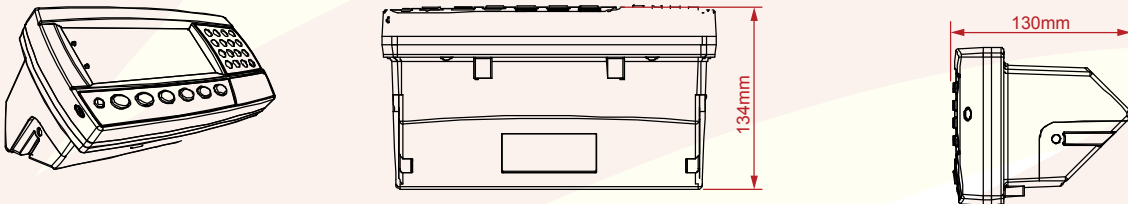
**SWAP MODULES
NO RECALIBRATION
REQUIRED**

DIMENSIONS

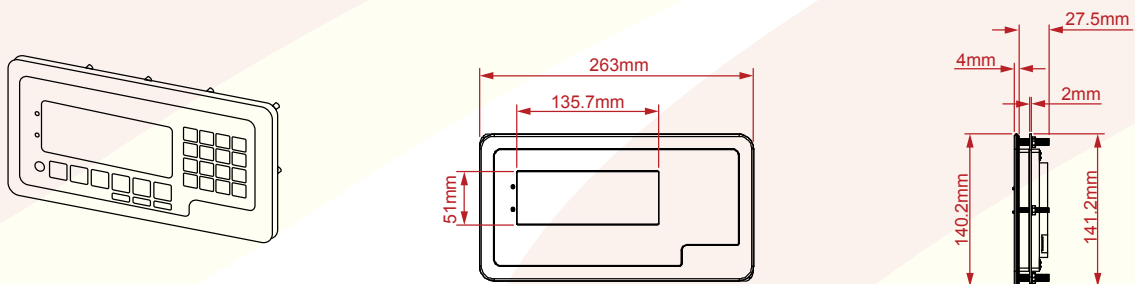
ABS Panel Mount (R420)



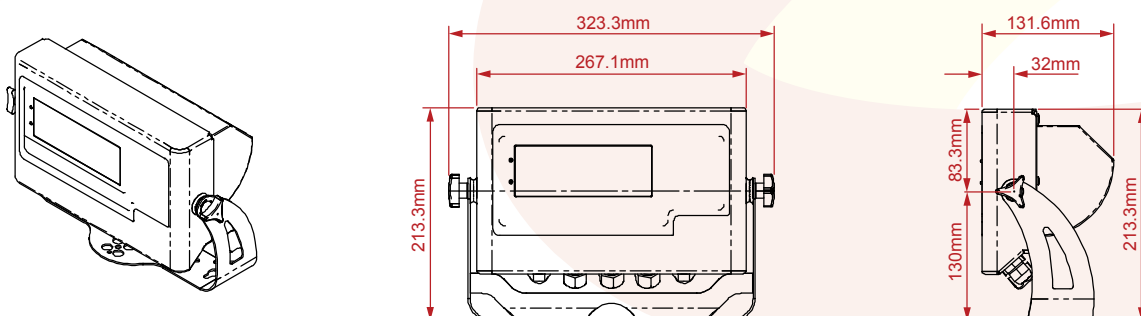
ABS with Rear Boot (R420)



Stainless Steel Panel Mount (R423)



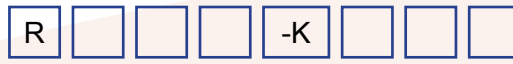
Stainless Steel with Rear Housing and Stand (R423)



SPECIFICATIONS

PERFORMANCE		
Display	LCD with 4 x Alpha-Numeric Displays and LED Backlighting: Primary Display: 6 x 28.4mm High Digits with Units and Annunciators Second Display: 9 x 17.6mm High Digits with Units Third Display: 8 x 6.1mm High Digits Fourth Display: 4 x 7.6mm High Digits	
Display Resolution	Up to 100,000 Divisions, Minimum of 0.25 μ V/Division NMI Trade-Approved to 10,000 Divisions at 0.7 μ V/Division	
Operating Modes	Single Range, Dual Range or Dual Interval	
Zero Cancellation	\pm 2.0mV/V	
Span Adjustment	0.1mV to 3.0mV 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 $^{\circ}$ C to +50 $^{\circ}$ C, 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 30.0 Seconds	
Zero Button	Adjustable from \pm 2% to \pm 20% of Full Capacity	
A/D CONVERTOR		
Type	24 Bit Sigma Delta	
Resolution	8,388,608 Internal Counts	
LOADCELLS		
Excitation	7.4V for Up to 16 x 350 Ω Loadcells (Maximum Total Loadcell Resistance: 1,000 Ω)	
Loadcell Connection	4-Wire or 6-Wire and Shield	
SERIAL COMMS		
Serial Output	Serial 1A: RS-232 Serial Port for Remote Display, Network or Printer Supports Serial 1B: RS-485 Transmit Only for Remote Display Transmission Rates: 2,400, 4,800, 9,600 or 19,200 Baud	
OPTI-LINK	Magnetically Coupled Infra-Red Communications, Conversion Cables Available for RS-232 or USB	
POWER SUPPLY		
Standard	12 to 24VDC (15VA Maximum) - ON/OFF Key with Memory Feature	
AC	Input: 110/240VAC, 50/60Hz, Output: 12VDC, 15VA	
Batteries	2.5AH NiMH Rechargeable Battery Pack Charger Input: 110/240VAC, 50/60Hz, Output: 12VDC	
FEATURES		
Additional Features	Ten Point Linearity Correction 3 x Assignable Function Key for Operator Use 10-Year Minimum Battery Back-Up of Clock and Calendar	
Approvals	NMI Certificate of Approval No. S463 C-tick Approval and CE Approval	
Setpoints	8	
Analogue Outputs	1	
Additional Communications	Module: RS-232/RS-232, Module: RS-232/RS-485, Module: RS-485/RS-485	
Button Inputs	4-Buttons	
Data Storage	1	
Profibus DP	Used with Rinstrum 1400 Profibus-DP Module	
Ethernet	1	
HOUSING		
	R420	R423
Case Material	ABS Plastic	Stainless Steel
Packing Weight	1.0kg	1.2kg
IP Rating	IP-65	IP-66

MODEL CODES

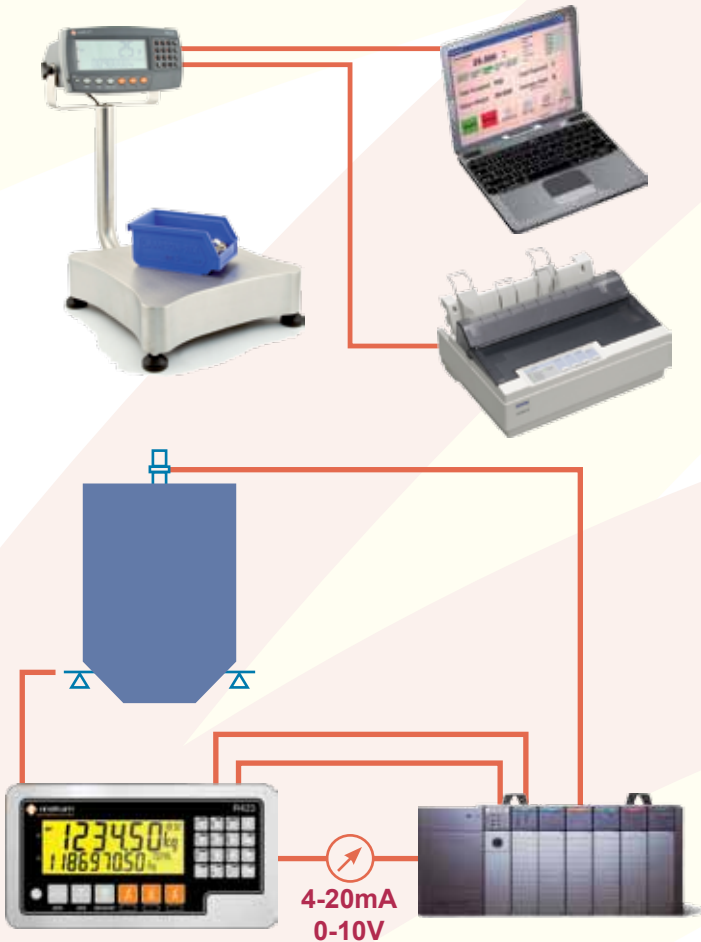


Model:
 R420 = ABS Case
 R423 = Stainless Steel Case

Software:
 K401 = General Multi-Function Indicator
 K402 = As per K401 Plus 250 Product Database
 K404 = Truck Weighing
 K410 = Single Material Filling
 K411 = Multiple Material Batching Controller
 K481 = Summing Indicator
 K482 = Tilt Compensation

K401 SOFTWARE OVERVIEW

EXAMPLE APPLICATIONS



The K401 is a general-purpose indicator suitable for weighbridges, general trade weighing, multiple indicator weighing systems and process control. The Scale Entry/Exit features make the K401 ideal for unmanned weighbridges.

Programmable printing for customised dockets and reports can support two separate printers

- Comprehensive print tokens allow for all instrument data to be printed in a variety of formats
- Custom print strings can be assigned to multiple instrument events, for example long and short press of a print key.

Custom Unit Switching allows for complete flexibility

- Programme for standard weight units (kg, lb, t etc) or
- Define alternative weighing units for your application (litres or force for example)

Flexible set point configuration for improved system integration. A set point can be individually configured to instrument status or weight target triggers. Each set point can be:

- Independently configured for a given function
- Associated with a given output
- Configured for high or low logic
- Defined to use a given weight source – Gross, Net, Alternate Units or Piece count

The large multi-line display assists the operator by displaying current weight and total weight and product name.

HIGHLIGHTS

- Counting with Piece Weight Entry
- Custom Unit Switching
- Set Pointing
- Reporting
- Custom Printing
- PLC Integration
- Only One Product



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