

# **QUBE<sup>2</sup>** DIGITAL DIAGNOSTIC JUNCTION BOX



**RICE LAKE<sup>®</sup>**  
WEIGHING SYSTEMS

800-472-6703  
[www.ricelake.com](http://www.ricelake.com)

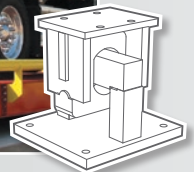
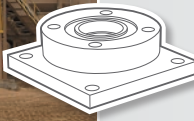
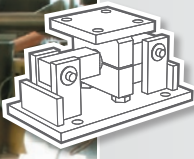
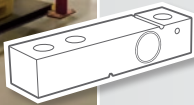
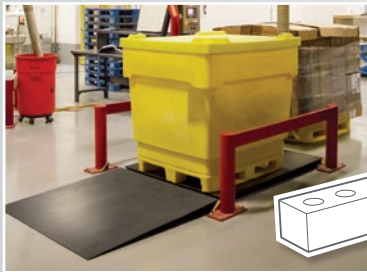
# Identify Problems Before They Happen

Rice Lake Weighing Systems' iQUBE<sup>2</sup>® digital diagnostic junction box compares the output of each load cell to adjacent load cells, ensuring optimal performance and warning operators of weight irregularities. iQUBE<sup>2</sup> converts any analog load cell system into a modern digital system, without replacing individual load cells.

## Enhance the Performance of Any Scale System

iQUBE<sup>2</sup> is ideal for systems using single or multiple scales with two or more load cells. Floor scales, hopper scales, tank scales, vehicle scales and dosing systems can all benefit from an upgrade to the iQUBE<sup>2</sup> digital diagnostic junction box system.

With accelerated data transfer, batching and dosing applications can efficiently achieve target weights when speed and accuracy are critical.



Stainless Steel Enclosures Available

## Instant Alerts and Cell Emulation

Diagnostics can be viewed on the user interface and an email alert is sent in the event of a component error. When a load cell fails, the cell emulation feature calculates weight based on known comparisons to functional load cells, keeping your scale functional until the load cell can be replaced.

## RETURN TO ZERO

If any load cell within a scale system does not return to zero, it could be an indication of scale binding or a damaged load cell. iQUBE<sup>2</sup> uses diagnostic data to troubleshoot these situations and pinpoint any problem areas.

## BALANCE

When a scale begins to display incorrect weights, it usually is not noticed until inventory shortages occur. iQUBE<sup>2</sup> monitors each load cell's output and compares the readings. This ensures overall weight accuracy and detects both mechanical problems and out-of-tolerance load cells.

## NOISE

Also called instability, noise is the most common problem in a scale system, caused by deteriorating resistance to ground inductance, shorting of conductors, excessive vibration or other factors. iQUBE<sup>2</sup> monitors for intermittent signals, alerting operators of a faulty load cell.

## DRIFT

Corrosion, temperature change or strain gauge damage can cause drift. iQUBE<sup>2</sup> scans for drift, which could affect the scale accuracy when the system is loaded.

## Real-Time Monitoring and Diagnostics

iQUBE<sup>2</sup> tracks performance, weight, dead load and current values for each load cell as well as A/D, excitation and load cell bridges. Using these measurements, iQUBE<sup>2</sup> looks for common issues in scale systems.



### VIRTUi<sup>2</sup>

#### Basic Applications

VIRTUi<sup>2</sup> provides the functionality of a basic weight indicator on a PC. For simple installations not requiring process control, this Windows<sup>®</sup>-based solution is ideal.



### 920i<sup>®</sup> Series

#### Complex Applications

The 920i has been tested and trusted by the weighing industry for years. Utilized by a wide range of industrial applications, the 920i offers a customizable LCD graphical display and custom program options, including batching and event-based routines.



PLC



### 1280 Enterprise Series

#### Advanced Applications

Offering ultimate speed and power, the 1280 is capable of virtually any task. With a highly customizable color touchscreen interface, applications including sophisticated batching and complex event-based programs are handled with ease.



## Choose from Three Indicator/Controller Options

Whether connecting a basic scale system, advanced control process or anything in between, Rice Lake offers a solution appropriate for the application.



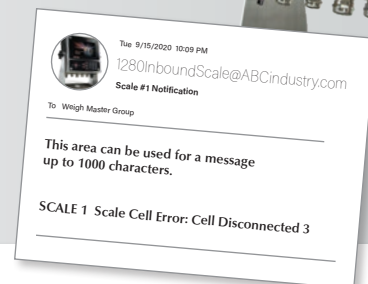
PLC



Web Server



Email Alerts







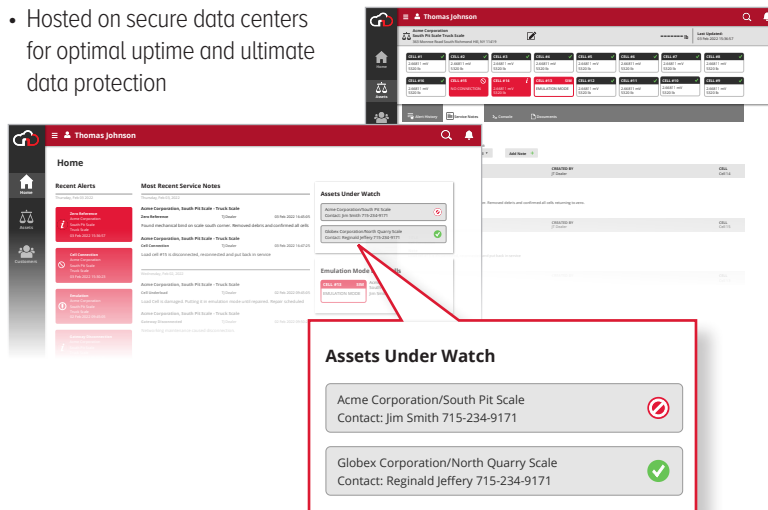
## Increase the Power of iQUBE<sup>2</sup> with VIRTUlink™

VIRTUlink's IoT (Internet of Things) gateway connects the power of iQUBE<sup>2</sup> to the cloud. This enables the digital junction box's real-time diagnostics and process data to be accessible through a convenient, secure web dashboard. iQUBE<sup>2</sup> and VIRTUlink partner together to monitor scale health around the clock. If an issue is detected, VIRTUlink can display an alert and automatically send an email to designated users. By automating alerts and logging diagnostics, iQUBE<sup>2</sup> and VIRTUlink proactively improve any process's uptime and efficiency.

- Sends raw and analyzed values from the scale to the cloud
- Expandable with support for multiple data points from indicators, junction boxes, auxiliary equipment, sensors, web relays and IP cameras

## VIRTUlink Web Dashboard

- Online portal to monitor equipment and review data in real time
- Receive alerts when a problem is detected
- Configure the home screen to display critical assets
- Remotely identify service needs and schedule regular maintenance alerts based on number of weighments or time intervals
- Review technician notes and dispatch customer support faster, with relevant information at your fingertips
- Hosted on secure data centers for optimal uptime and ultimate data protection



## iQUBE<sup>2</sup> STANDARD FEATURES

- Enclosure includes 4-channel board with or without power supply
- NEMA Type 4X enclosures include stainless steel, polycarbonate or fiberglass reinforced polyester
- Up to 16 load cells can be connected using secondary boards
- Connection can be up to 4 separate platforms with a system total, or 4 separate scale systems
- Diagnostic routines for failed cells, weighing errors and system health. Tests for zero return, cell balance (linearity), noise and drift
- Onboard status LEDs for indication of cell health, port activity, heartbeat and digital I/O
- Cell emulator compensates for load cell failure until a repair can be made
- Cal-Match® algorithm automatically trims and calibrates the scale in one pass of test weights
- Standard communication for Port 1 RS-232/485/422. Option card slot for Fiber Optic, Ethernet TCP/IP or Ethernet TCP/IP Wireless, USB or RS-232/485/422
- Can be used as a standalone weight-based controller with serial output
- 4 digital I/O for push-button operation, host control, free running setpoints, or remote cell status

## OPTIONS/ACCESSORIES

- 1280 indicator/controller
- 920i indicator/controller
- VIRTUlink Windows-based indicator software
- VIRTUlink IoT gateway
- Transient protection
- Remote AC power supply
- 9-36 VDC converter
- Revolution® scale software

## SPECIFICATIONS

<b>ENCLOSURE:</b>	NEMA Type 4X polycarbonate (max 2 boards) 11.3 in x 9.3 in x 5.4 in (29 cm x 24 cm x 14 cm) NEMA Type 4X FRP (max 3 boards) 13.3 in x 11.3 in x 5.6 in (34 cm x 29 cm x 14 cm) NEMA Type 4X stainless steel (max 2 boards) 10.3 in x 8.9 in x 4.3 in (26 cm x 23 cm x 11 cm)
<b>BOARD SIZE:</b>	4 in x 5 in (10 cm x 13 cm)
<b>VOLTAGE INPUT:</b>	115/230 VAC power supply, 7-12 VDC power supply, optional 9-36 volts DC converter
<b>LOAD CELL INPUTS:</b>	4 channels (up to 16 with secondary networked boards)
<b>LOAD CELL EXCITATION:</b>	5 VDC, 57 mA maximum per channel
<b>ANALOG RANGE:</b>	-4.5 mV/V to 4.5 mV/V
<b>ANALOG SIGNAL SENSITIVITY:</b>	0.3 uV/grad at 30 Hz 0.5 uV/grad at 100 Hz 1.2 uV/grad at 500 Hz
<b>UPDATE RATE:</b>	Up to 500 per second (4-channel board) Up to 150 per second for (Max. four 4-channel boards)
<b>TEMPERATURE RANGE:</b>	14 F° to 104 F° (-10 C° to 40 C°)
<b>PORTS:</b>	Port 1 and 2
<b>BAUD RATE:</b>	7 even, odd 8 none 9600-460,000

## APPROVALS

