

**KNOW YOUR PROCESS.**

**Bulk density and moisture monitoring solutions from the experts in dry-flow product efficiency, accuracy and measurement**

**CONTROL YOUR PROCESS.**

**Reduce downtime and startup cycles**



**Solve packaging problems**



**Improve product spec and quality assurance**



**Improve waste margin**

**Minimize energy costs**

**3 $\sigma$   
III SIGMA**

# RELIADENS



## INSTANT BULK DENSITY FEEDBACK FOR DRY FLOWING PRODUCTS

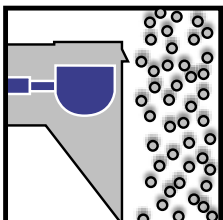
The first on-line automated mechanical bulk density monitoring system designed specifically for dry flowing products, ReliaDens™ revolutionized process control through bulk density measurement. ReliaDens delivers unsurpassed accuracy and versatility for companies processing cereal, snack food, pet food, gypsum, metal powder, fertilizer, grain, plastic, and any other dry flowing products.

## HOW RELIADENS WORKS

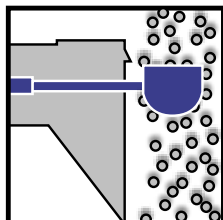
Mounted on-line wherever there is a 9–18" gravity drop, ReliaDens uses a 4-step cycle with system tares at the start of every sampling cycle. ReliaDens takes an actual sample of product for evaluation (rather than inferred values) and can sample as often as every 15 seconds. The sampling process uses no radiation. The sample is returned into the product stream, so there's no waste.

"I WISH EVERYTHING  
WAS AS EASY TO WORK  
WITH AS THE III SIGMA  
SYSTEM"

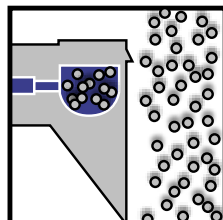
IT ENGINEER  
BREAKFAST CEREAL



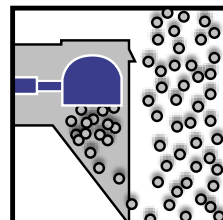
1 Auto Zero



2 Sample



3 Measure density



4 Product return

30  
III SIGMA

# AUTOMATIC, REPEATABLE, DEPENDABLE

## BULK DENSITY AND MOISTURE MEASUREMENT

If you could know exact bulk density and moisture at any given time, at a chosen point in the process, how much money could your company save? III Sigma gives you the answer.

ReliaDens and AquaDens enable the strict monitoring of bulk density and moisture required to make corrections before problems get out of control. So you can:

- Make better use of labor resources by eliminating the need to take hand samples
- Reduce product waste due to off-spec throwaway and “sell by weight/dispense by volume” issues
- Reduce packaging costs
- Get real-time data to reduce costs associated with downtime (faster startup time)
- Increase accuracy of nutritional claims
- Maintain consistent, high quality product profiles for taste, texture and feel
- Reduce customer complaints concerning product quality

**“OUR III SIGMA UNITS HAVE BEEN IN SERVICE FOR OVER FIVE YEARS. DURING THAT TIME WE’VE UPGRADED CONTROL PROGRAMS AND ADDED ETHERNET COMMUNICATIONS TO OUR PLANT WIDE INSTRUMENT NETWORK. THE EQUIPMENT IS DURABLE IN THAT WE’VE ONLY CHANGED OUT ONE LOAD CELL AND ONE CYLINDER DURING THAT TIME. THE RESULTS ARE ALWAYS ACCURATE AND WORK VERY WELL OVER A WIDE RANGE OF DENSITIES.**

**THE INTERFACE IS EASY TO USE AND UNIT CALIBRATION IS ALSO EASY. WE’VE HAD NO PROBLEMS WITH CALIBRATION DRIFT AND THE UNITS CONTINUE TO WORK WELL IN A RATHER HOSTILE ENVIRONMENT.”**

**TECHNICAL ENGINEER  
BEVERAGE INDUSTRY**

**WHEN YOU CAN  
CONTROL A PROCESS...  
...YOU CAN IMPROVE IT.**

ReliaDens and AquaDens are compact, simple to install and calibrate, and easy to retrofit into existing process lines. So you can test in the locations that are most appropriate — not just most accessible to operators — and sample exactly the same way each time to eliminate human error or bias.

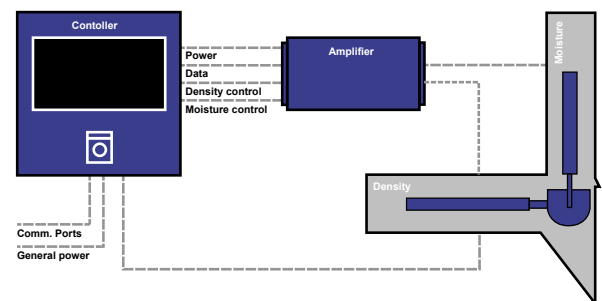
### INSTANT BULK DENSITY AND MOISTURE INFORMATION AT CRITICAL POINTS

Because measuring bulk density and moisture is quick and easy with ReliaDens and AquaDens, you can gain full control of processes by taking measurements at critical points where shifts in bulk density and moisture occur. With ReliaDens and AquaDens, more measurement locations means more information and more control.

- Achieve greater consistency in cooking and frying
- Improve dryer control
- More control of coating application



With a III Sigma solution in every plant, at every critical point along the process stream, you can ensure consistent process control — and maximum savings — throughout your company.



# AQUADENS

“III SIGMA  
EQUIPMENT IS THE  
GOLD STANDARD IN  
THE INDUSTRY”

PROCUREMENT SPECIALIST

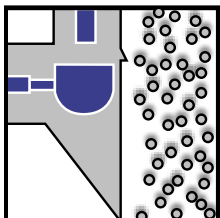
## CONTROL DENSITY AND MOISTURE FOR BETTER TOLERANCE ADJUSTMENT

AquaDens™ combines the accuracy and reliability of the ReliaDens with the precision of III Sigma total moisture monitoring technology. Measuring both bulk density and moisture on the same sample with AquaDens enables bulk density compensation to measure total product moisture — not just surface moisture. AquaDens measurements can be repeated as often as every minute for immediate adjustments to address any variations.

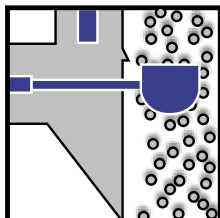


## HOW AQUADENS WORKS

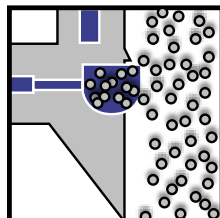
AquaDens takes a unit volume of product directly from the product stream for analysis, using a 6-step cycle with an enhanced Radio Frequency technique. Readings are not affected by changes in temperature or production rate, so you can rely on accurate moisture measurement in a variety of operating conditions.



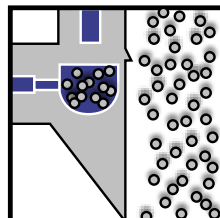
1 Auto Zero



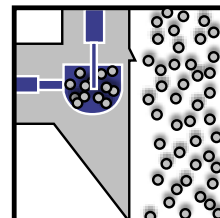
2 Sample



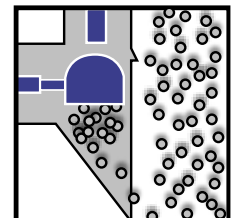
3 Retract



4 Measure density



5 Measure moisture



6 Product return



# III SIGMA

## THE BULK DENSITY AND MOISTURE SOLUTIONS COMPANY

Founded in 1993, III Sigma is the leader in automated, on-line bulk density and moisture monitoring systems for dry-flow processes. III Sigma customers include Fortune 100 companies in a broad range of industries: cereals, grains, fertilizers, metal powders, pet foods, pharmaceuticals, plastics, polystyrene, snack foods, wood products, and others.

Patented III Sigma technology measures the bulk density and moisture of dry-flowing products with a frequency, consistency and accuracy that other sampling methods cannot provide. But III Sigma doesn't just sell equipment. Combining advanced technology with practical dry process expertise, III Sigma helps customers answer these key questions:

- Is there a problem in the process?**
- Where is the problem?**
- How can it be corrected?**

III Sigma offers the tools to identify and solve problems indicated by bulk density and moisture, the flexibility to customize solutions for specific requirements, and the knowledge to help you achieve maximum return on investment.

## PROVEN SOLUTIONS BUILT ON REAL-WORLD EXPERIENCE

ReliaDens and AquaDens grew from years of working in dry process production plants. Recognizing first-hand the shortcomings of conventional bulk density sampling methods — and the enormous benefit potential of automation — IIISigma began developing solutions to address bulk density sampling issues. III Sigma solutions are the result of years of research and testing to perfect today's ReliaDens and AquaDens.



**MAKE A BETTER PRODUCT.  
AND SAVE MONEY DOING IT.**

Beyond improving product consistency and tightening specifications, III Sigma customers realize dramatic cost savings with improved response for faster process corrections, acceleration of startup to in-spec product, lower scrap rates, and packaging material reduction.

For example:

**A major pet food manufacturer achieved a \$4 million reduction in packaging costs**

**A major dry laundry detergent manufacturer achieved a 70% decrease in consumer complaints about "number of loads" per package**

**A major dry cereal manufacturer achieved a 7% reduction in give-away**

**A snack manufacturer significantly improved product consistency, reduced bulk density variation, and cut packaging costs by adjusting fryer oil temperature to control product expansion**

Find out how III Sigma can help you know your process — and how to control it. For a free multimedia product demo and ROI calculator CD, a personalized proposal, or more information, contact III Sigma today:

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