

CPC® SMART COUPLING

○ Automatic Product ID & Data Capture for Fluid Applications



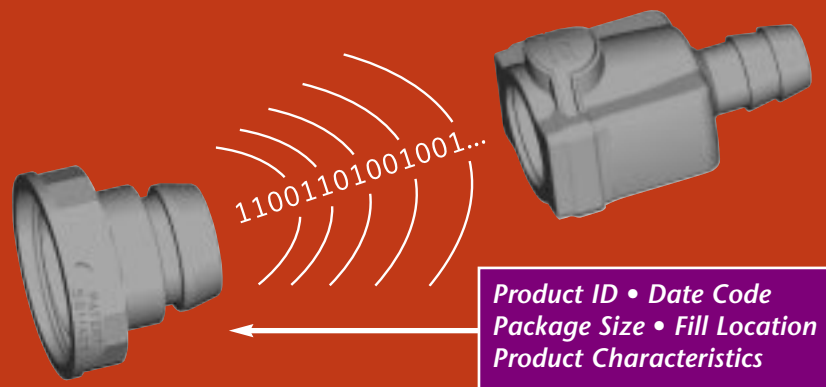
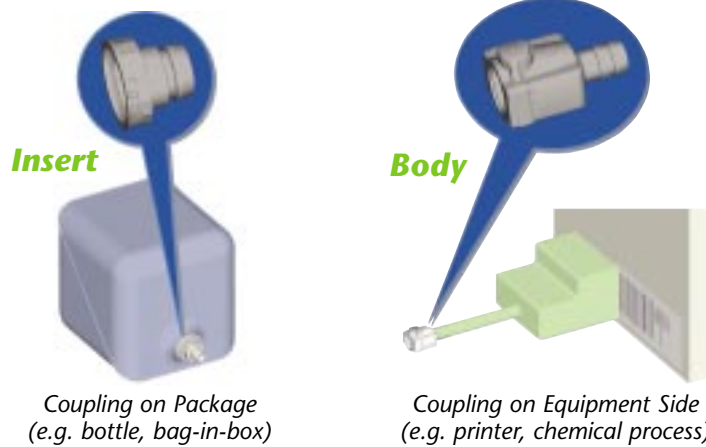
○

Knowledge Provides the Power to Control

Continually driven by innovation, Colder Products Company® (CPC) has created the patent-pending Smart Coupling to automatically exchange information across a coupling at the time of connection to help ensure proper fluid delivery.

The CPC Smart Coupling enables users to store data on the package coupling or fluid delivery line using contactless Radio Frequency Identification (RFID) technology. When the two halves are connected, data is automatically transferred across the coupling from the product side (e.g. rigid container or bag-in-box) to the reader on the equipment side. This data can be sent on to your control system where it can compare operating parameters against tag identification to make decisions to continue or halt the process at a systems level. Stand-alone versions not requiring integration into a control system are also available.

As illustrated below, the package side coupling includes a "tag" stored with data. The equipment coupling includes a "reader" that powers the communication and reads the information on the tag.



CPC Smart Coupling



Control, Protect & Enhance Your Fluid Handling Process

CPC's Smart Coupling provides enhanced value compared with traditional couplings. The Smart Coupling allows OEMs to obtain data to more effectively manage regulatory compliance and to control processes to improve product performance and verify maintenance procedures.

The Smart Coupling uses proven RFID technology so companies can have confidence that inadvertent misconnections can be stopped at a systems level. The Smart Coupling can detect and lock out unapproved materials before the product has a chance to flow through the coupling by adding a physical lock-out option.

PREVENTS MISCONNECTIONS

due to operator error or out-of-sequence connections.

PROTECTS YOUR BRAND

by ensuring that only quality products are allowed to pass through, thus reducing the possibility of out-of-date, misapplied, or inferior products from being used. This enhances your process so that finished product matches design specifications to meet the quality expectations your valued customers have come to expect.

SAVES TIME

with the automatic process of documentation such as package and media lot numbers and date codes.

PROLONGS EQUIPMENT LIFE

by protecting against the accidental or intentional use of harmful media that could disable or destroy equipment.

CPC Smart Coupling Fits Many Applications



DISPENSING

A dispenser manufacturer may support a business model of providing dispensers at no cost and assure product sales by locking out competitive brands. Smart Coupling Technology could be used to verify sugared vs. non-sugared soda to circumvent health and safety issues for diabetics.

CHEMICAL HANDLING

The Smart Coupling may be used to verify connection of correct media and filling sequence prior to filling, reducing potential for hazardous mixing combinations and improving quality control.



FLEXIBLE PACKAGING

Flexible packaging such as bag-in-box can use CPC's DUDC package inserts which accommodates most 38mm fitments. UDC readers can be used with fluid lines from 1/4" - 3/4". UDC inserts are used with rigid containers.

Determining product application suitability is solely the customer's responsibility.



SANITIZING

AmeriSpa™ uses the CPC Smart Coupling to verify that cleaning and sanitizing processes match their intended specifications and approved chemicals. Clean-in-Place operations can use the Smart Coupling to verify line hook up to cleaning fluid.

MEDICAL

A medical device manufacturer may use the Smart Coupling to verify that connected devices match specifications pre-determined by the physician.



PRINTING

An ink jet printer manufacturer can verify date codes, color codes, viscosity, particle size and more for product identification or auto-calibration purposes. Plant operations can identify ink parameters and verify they match job specifications as well as use for inventory control and management.



Determining product application suitability is solely the customer's responsibility.



To find out how your specific applications can benefit from CPC® Smart Couplings, contact us at 1-866-621-9168 or smart@colder.com.

Auto-Identification & Data Capturing Smart Couplings



CPC SMART COUPLING

CPC's Smart Coupling series uses a variety of non-contact technologies incorporating a reader within a coupler body to read data from a tag that is built into the package insert. This technology can be used to capture product identification codes (batch, lot and date) and a variety of other information used for quality assurance purposes, or to improve health and safety aspects of managing consumable fluids.

The RFID version allows for 48 bytes of user programmable data on the RFID tag. RFID tags retain data for a minimum of 10 years through 100,000 write cycles. Current versions of the Smart Coupling operate at 8VDC-24VDC with maximum power consumption of 350mW. Communication takes place over RS 232 from the reader to your control system.



APPLICATIONS:

- Chemical handling equipment
- Medical devices
- Printing and labeling equipment
- Food and beverage dispensing
- Cleaning and maintenance equipment
- Clean-in-place and other sterilizing operations
- Packaging machinery

UNIVERSAL DISPENSING FEATURES:

- Universal 38mm cap fits most manufacturer's fitment necks
- Automatic shut-off when disengaged minimizes spillage
- Integral terminations eliminate leak points and quicken assembly for faster installations
- Shrouded thumb latch protects against accidental disconnects
- Available CIP adapter for coupler simplifies the task of flushing or sanitizing dispensing lines

The CPC Smart Coupling can be used to collect fluid product data stored on an RFID tag on the coupling insert for flexible packaging such as bag-in-box and rigid fluid containers. Data transfer takes place at the point of connection to ensure that package information read is the one that is connected.

The Smart Coupling interrogator uses RFID technology to retrieve product data from an RFID tag and sends this data to your control system for analysis. Your control system can then make comparisons and send commands to start the process or send a warning that incorrect media has been connected.



DUDC & UDC

DUDC: The patented 3/8" flow DUDC is a disposable connection for most standard vol-pack bags with 38mm fitment necks that provides a closed sanitary system. CPC's positive connection design and a large, shrouded thumb latch pad produce a coupler that is easy to grip and simple to operate.

UDC: The patented 3/8" flow reusable cap allows you to thread on the cap to any 38mm spout. Customers may find this convenient for use when transitioning to the DUDC or as a flexible, reusable adapter for dispensing.

SPECIFICATIONS

Size: SP-400 38mm

Tubing Size: 1/4" thru 3/4" I.D.; 9.5mm thru 19mm I.D.

Coupler Body Materials:

Housings valve and thumb latch: polypropylene

Springs: 316 stainless steel

O-ring: FDA Silicone, FDA Buna-N and FDA EPDM

Cap Materials:

UDC

Cap and cap valve: acetal

O-ring: FDA Silicone, FDA Buna-N and FDA EPDM

DUDC

Cap: polypropylene

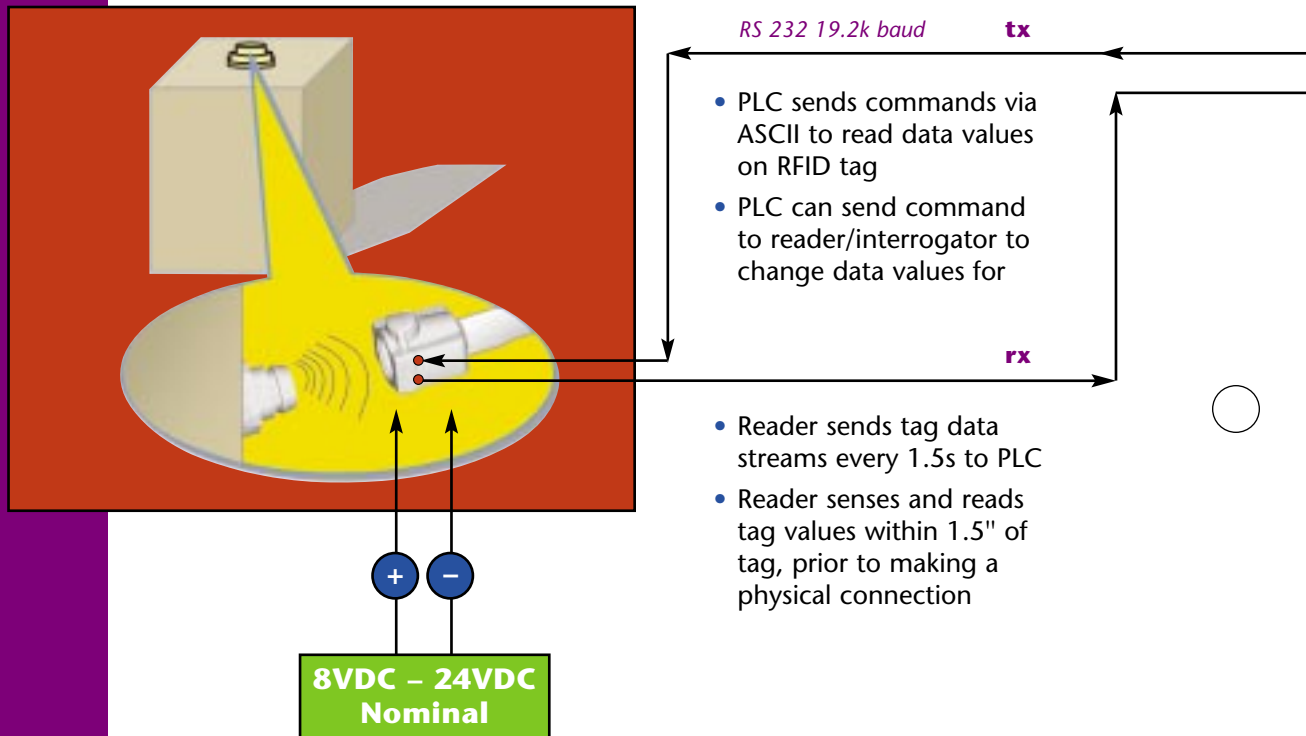
Cap valve: NSF Santoprene, FDA EPDM

Smart Couplings Can Integrate into Various Control Systems

Example of Integration of Smart Coupling Components into a Control System

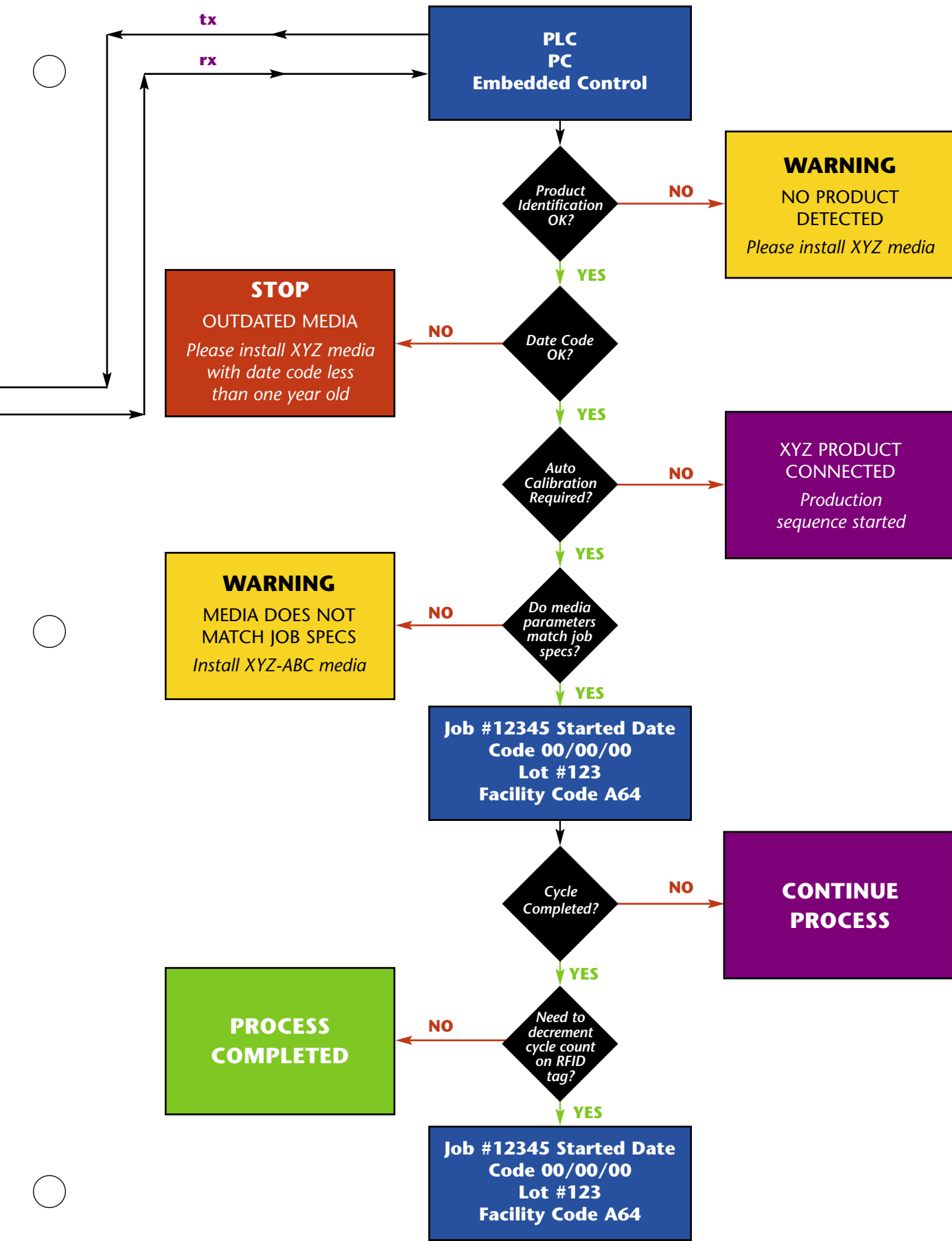
Product ID • Date Code • Package Size

Fill Location • Product Characteristics



USE SMART COUPLINGS FOR:

- Cycle Counts
- Auto-Calibration
- Completion of Cycle
- Date Code Validation
- Product Identification
- Media Parameter Verification





STAND-ALONE SMART COUPLING

The CPC Stand-Alone Smart Coupling may be used without being integrated into your control system.



The Stand-Alone Smart Coupling configuration is available in several options:

Basic: The reader electronics provide instruction to the operator immediately prior to connection by lighting a green light if the connection is okay to be made or a red light if there is a problem with the connection.

With On-Off Control Line: Adding an on-off control line as output from the reader provides extra security to the system. For example, a control line could be used on a solenoid to control a pump. Even if the operator tries to make an improper connection, the control line will not allow the pump to turn on.

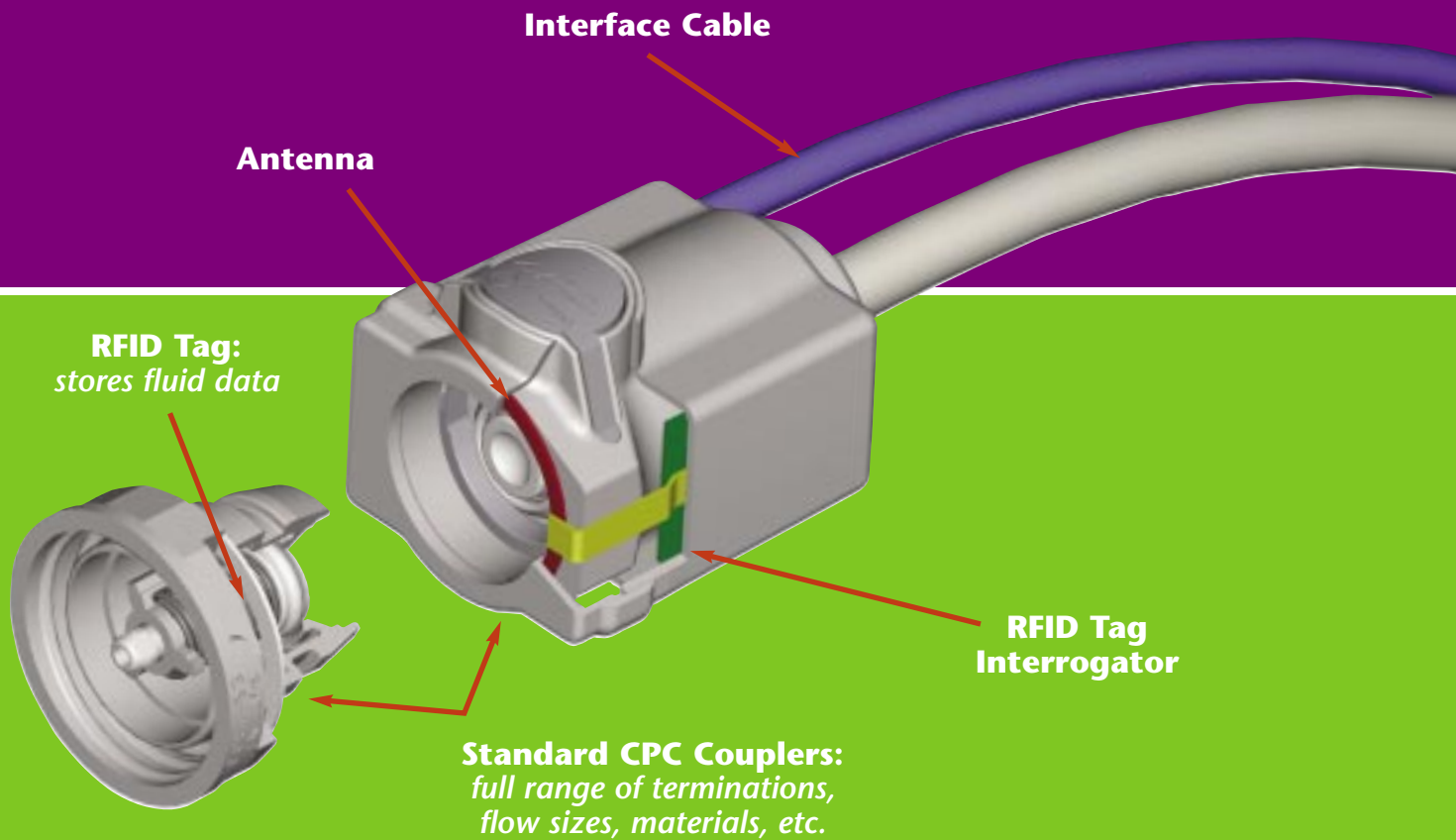
With Physical Lock-Out: Prevents connection from occurring.



SMART COUPLINGS OFFER A VARIETY OF:

- Flow Sizes
- Terminations
- Materials





POWER REQUIREMENTS

Supply voltages from 8VDC–24VDC can be accommodated. 2VDC–5VDC supply voltages are available upon request. Maximum power consumption is 350 mW.

COMMUNICATION

Communication takes place over RS-232 from the interrogator to your control; RS-485 protocol is in development.

TERMINATIONS AND TUBING

Straight and elbow hose barbs are available for 1/4" - 3/4" I.D. tubing. PTF and JG are available on some versions.

TAG PROGRAMMING

Tag data values can be programmed with the Smart Coupling interrogator by sending ASCII strings from your control system to the interrogator. Data encryption should be considered in addition to the Cyclic Redundancy Check performed by the interrogator.

RFID TAGS

13.56 MHz RFID tags can accommodate 48-1k byte of user programmable data and will retain data for 10 years through a minimum of 100,000 write cycles.

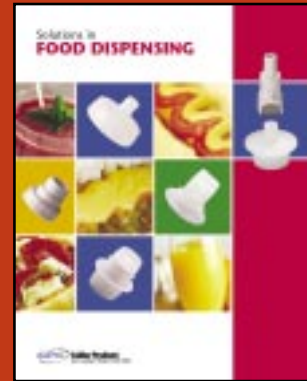


Visit **CPC** on the Web at www.colder.com/sc

Topics include:

- Smart Coupling Technology— Frequently Asked Questions (FAQ's)
- Why use a Smart Coupling?
- Smart Markets
- Smart Products

For a free evaluation of your fluid management process, 'ask an engineer' at smart@colder.com, or call 1-866-671-9168.



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