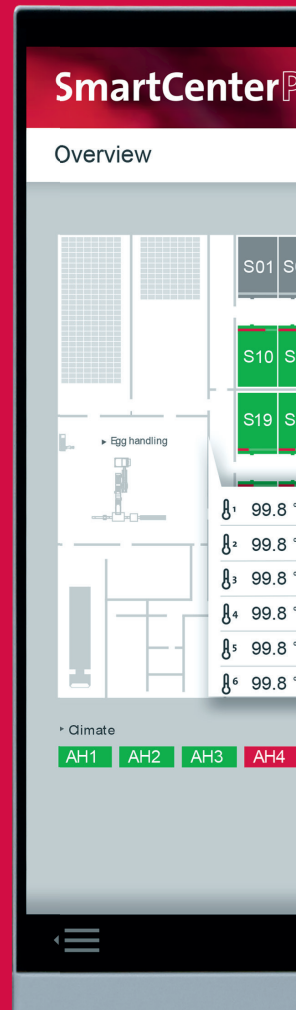# SmartCenterPro™

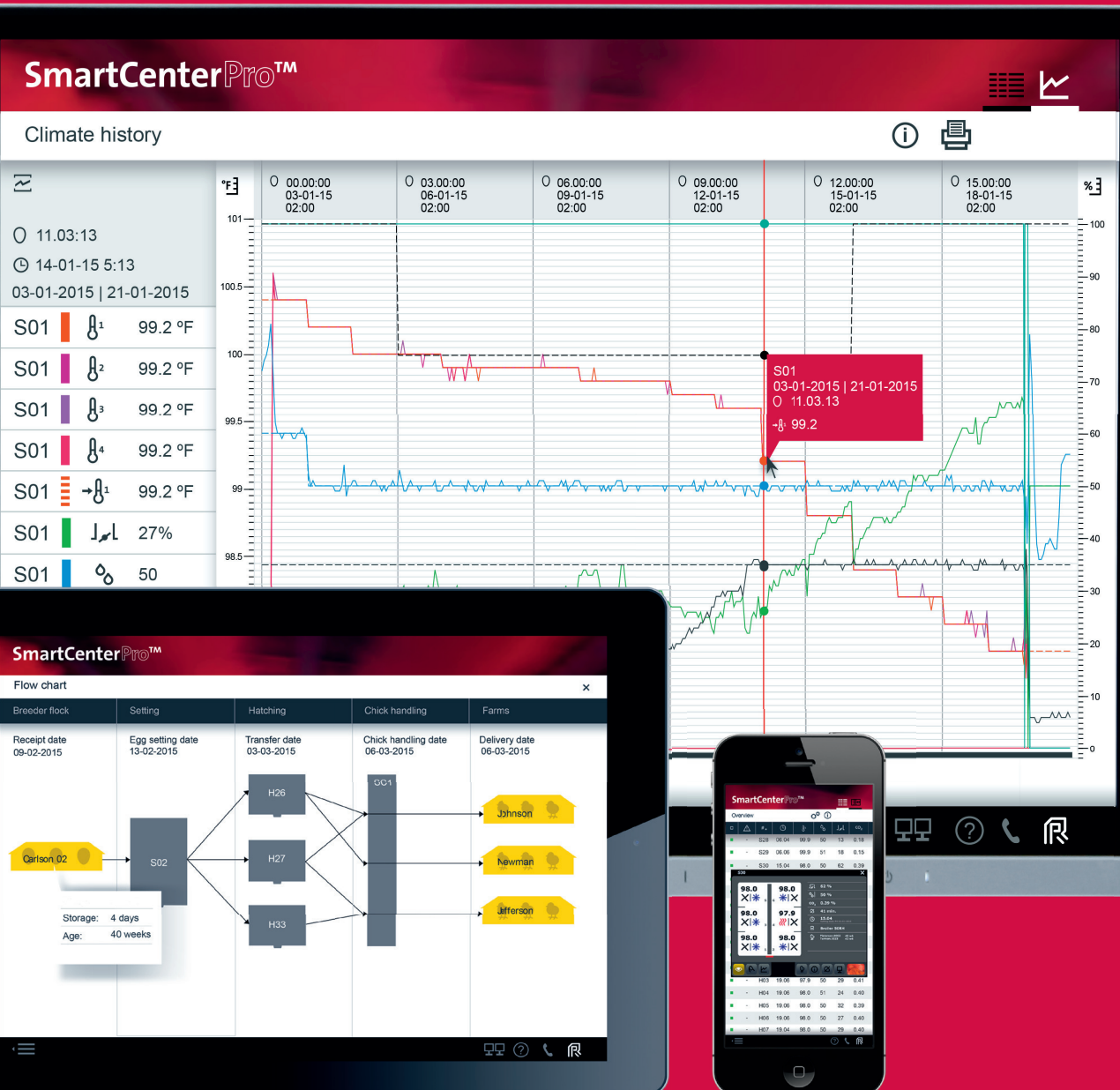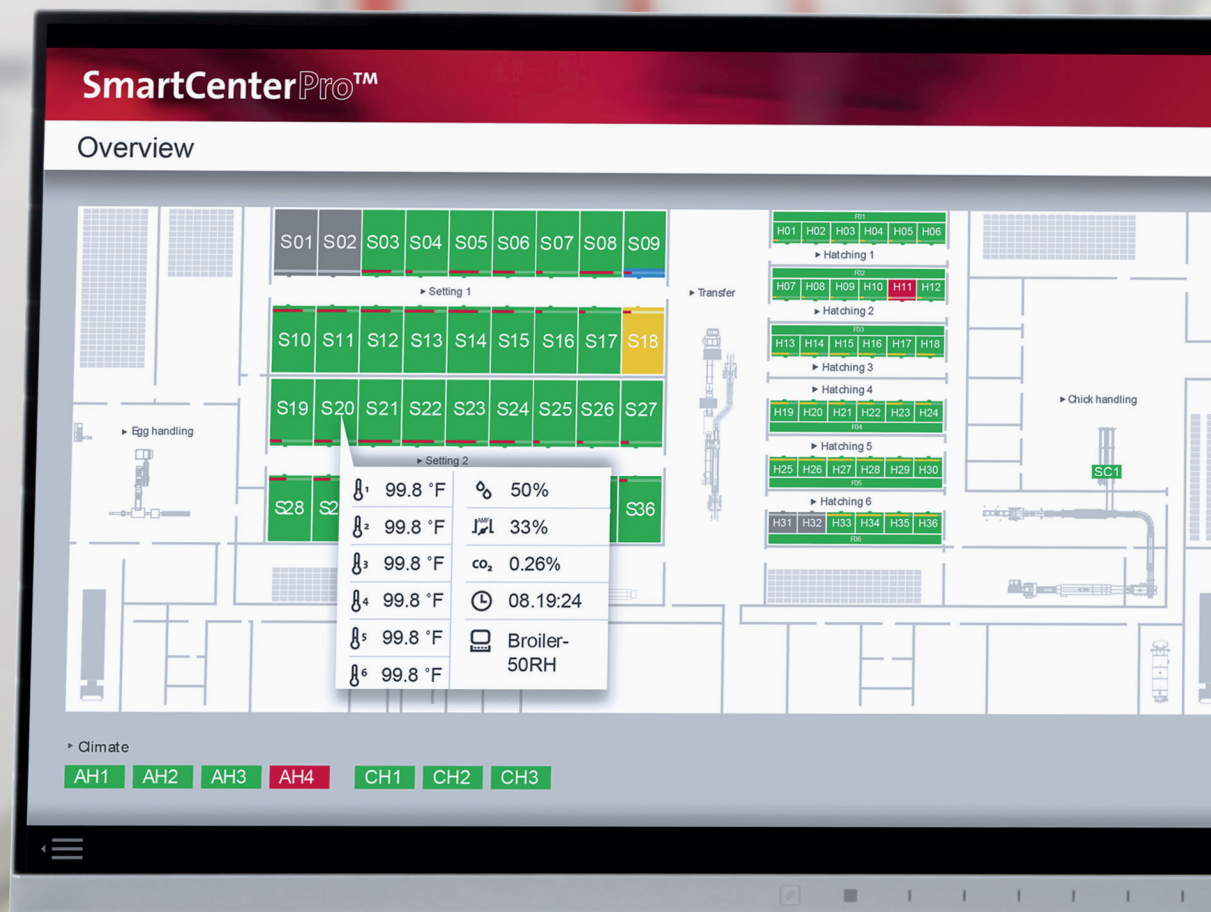## Informed decision-making in the modern hatchery
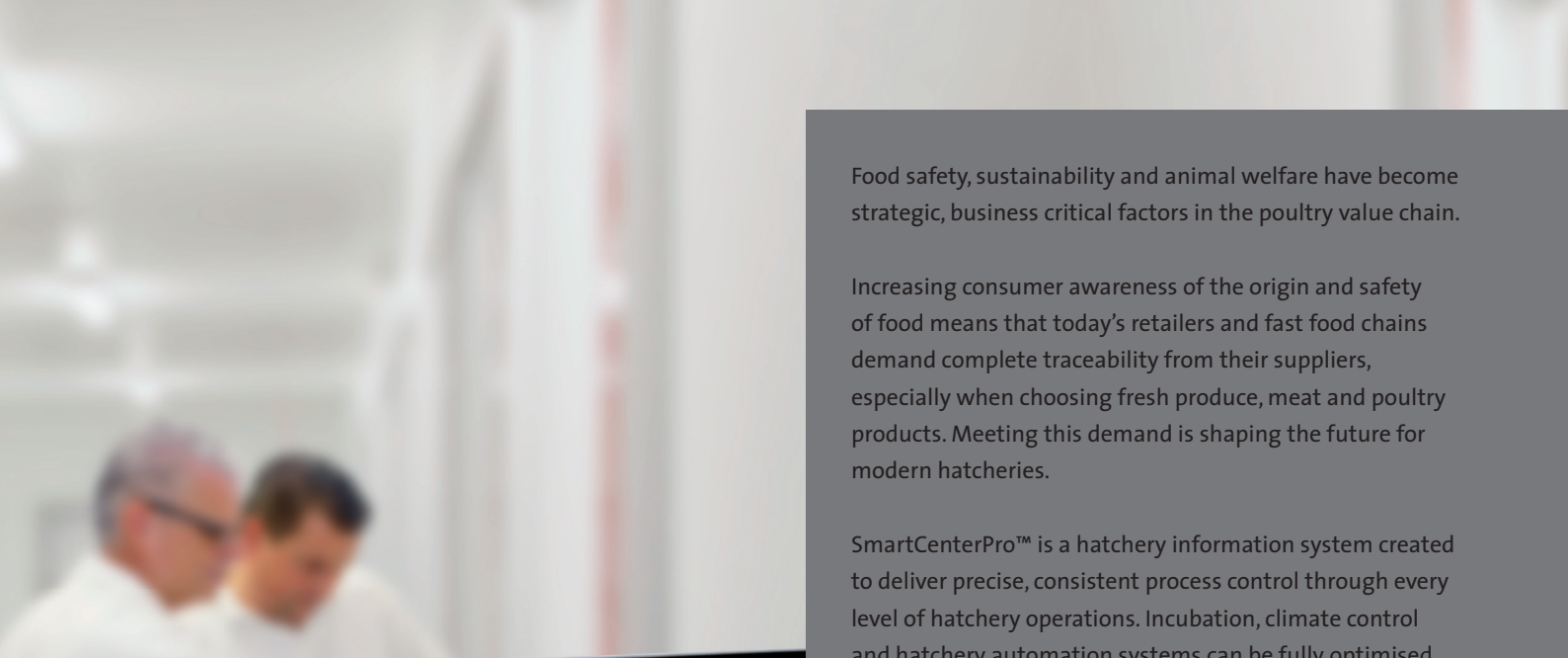
Pas Reform
Hatchery Technologies

Complete data capture
for total hatchery control

SmartCenterPro™

Overview

S01	S02	S03	S04	S05	S06	S07	S08	S09	

▶ Setting 1

▶ Transfer

S10	S11	S12	S13	S14	S15	S16	S17	S18

S19	S20	S21	S22	S23	S24	S25	S26	S27

▶ Egg handling

▶ Setting 2

S28	S2...						S36

🌡₁	99.8 °F	💧	50%
🌡₂	99.8 °F		33%
🌡₃	99.8 °F	CO₂	0.26%
🌡₄	99.8 °F	🕐	08.19:24
🌡₅	99.8 °F	🖥	Broiler-50RH
🌡₆	99.8 °F		

F01
H01	H02	H03	H04	H05	H06

▶ Hatching 1

F02
H07	H08	H09	H10	H11	H12

▶ Hatching 2

F03
H13	H14	H15	H16	H17	H18

▶ Hatching 3

▶ Hatching 4

F04
H19	H20	H21	H22	H23	H24

▶ Hatching 5

F05
H25	H26	H27	H28	H29	H30

▶ Hatching 6

F06
H31	H32	H33	H34	H35	H36

▶ Chick handling

SC1

▶ Climate

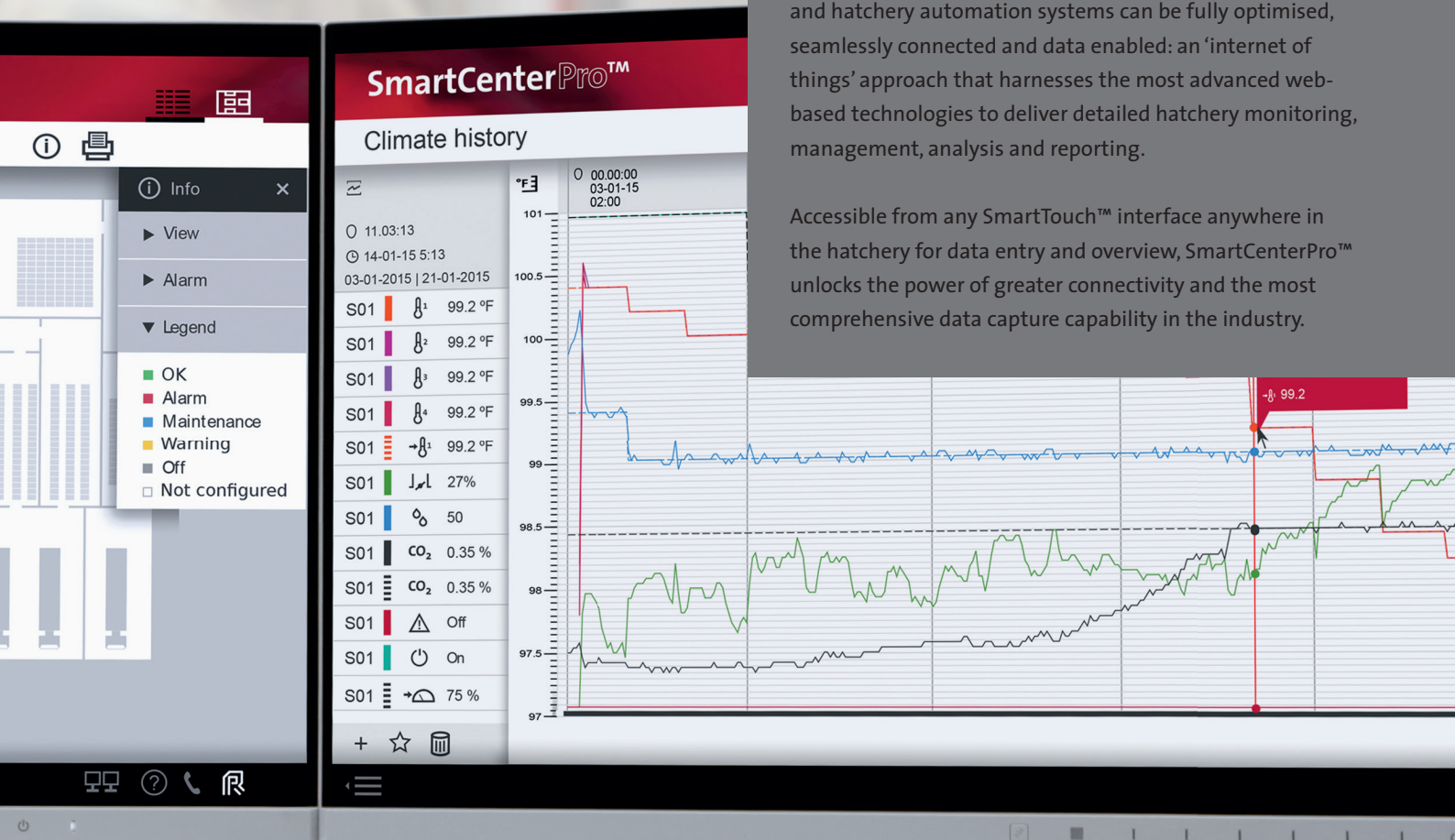| AH1	AH2	AH3	AH4	CH1	CH2	CH3

Food safety, sustainability and animal welfare have become strategic, business critical factors in the poultry value chain.

Increasing consumer awareness of the origin and safety of food means that today's retailers and fast food chains demand complete traceability from their suppliers, especially when choosing fresh produce, meat and poultry products. Meeting this demand is shaping the future for modern hatcheries.

SmartCenterPro™ is a hatchery information system created to deliver precise, consistent process control through every level of hatchery operations. Incubation, climate control and hatchery automation systems can be fully optimised, seamlessly connected and data enabled: an 'internet of things' approach that harnesses the most advanced web-based technologies to deliver detailed hatchery monitoring, management, analysis and reporting.

Accessible from any SmartTouch™ interface anywhere in the hatchery for data entry and overview, SmartCenterPro™ unlocks the power of greater connectivity and the most comprehensive data capture capability in the industry.

SmartCenterPro™

Climate history

○ 11.03:13
◷ 14-01-15 5:13
03-01-2015 | 21-01-2015

○ 00.00:00
03-01-15
02:00

S01	🌡¹	99.2 ºF
S01	🌡²	99.2 ºF
S01	🌡³	99.2 ºF
S01	→🌡¹	99.2 ºF
S01		27%
S01		50
S01	CO₂	0.35 %
S01	CO₂	0.35 %
S01	⚠	Off
S01	⏻	On
S01	→☁	75 %

ⓘ Info ✕

▶ View
▶ Alarm
▼ Legend

■ OK
■ Alarm
■ Maintenance
■ Warning
■ Off
□ Not configured

Making powerful connections

Incubation, automation and climate control in one network

All SmartCenterPro™ functions are available in three main programme tiers: Hatchery Overview, Hatchery Management and Hatchery Analysis.

Hatchery Overview

At the heart of SmartCenterPro™ a fully interactive floor plan, uniquely customised to each individual hatchery, shows the current status in every area of operations, including alarms and maintenance, in a single screen view.

Essential functions and parameters for each incubator, climate control and hatchery automation system connected to SmartCenterPro™ can be accessed and managed from this main overview screen, which switches easily to list view for sorting data.

Scroll over any connected device in the hatchery and a tooltip reveals current operating parameters, while a progress bar for each incubator gives an immediate indication of time to egg transfer or chick take-off.

'Zoom the room' for detailed information from connected devices in each area of the hatchery. One click accesses a full status screen for that area, with the ability to monitor and control corresponding systems, from incubator set points and the origin of the eggs, to a chick counter in operation or the pressure in a fluff tunnel.

Hatchery Management

Incubation Programming

A detailed database supplied by Pas Reform Academy is included with SmartCenterPro™, ready-populated with default incubation profiles for layer, broiler, duck or turkey eggs. From this base data, unlimited numbers of breed-, age- and storage specific incubation profiles can be added, tailored to specific local circumstances and experience.

Practical and simple-to-use, SmartCenterPro™ enables the hatchery manager to optimise chick quality and uniformity by fine-tuning temperature, humidity, CO_2, Vortex™ speed and turning conditions for each specific incubation programme. Any number of individual programmes, including specific pre-heating, Circadian Incubation™ or SPIDES profile settings, can be used simultaneously in separate incubators to create the ideal environment for each specific batch of eggs.

The full list of incubation programmes can be viewed, maintained, sent, modified, imported, exported and edited in a single programme, for total flexibility and user friendliness.

Alarms

A fully integrated, advanced redundant alarm module means that with SmartCenterPro™ in operation, there is no need for additional alarm systems. A modem, UPS package with back-up battery and a Mod-alarm for additional redundancy are also included.

Alarms automatically detect unscheduled changes to temperature, humidity, valve position, CO_2 levels, Vortex™ speed, turning or power loss in setters and hatchers. The system also monitors air handling units, chillers and fluff tunnels during incubation.

SmartCenterPro™ is supplied with additional digital inputs that can be configured to other devices.

Once an alarm is triggered, automated voice dialling contacts a designated staff group with a pre-recorded, alarm-specific, own-language voice message until the call is answered. Entering a pin code to acknowledge receipt of the call stops the automated dialler.

The responding staff member need only access the SmartCenterPro™ overview screen, to identify the alarm source and take the necessary action.

Any equipment failure or programme deviation can be rapidly identified and resolved from any SmartCenterPro™ interface, either in the hatchery or remotely.

Maintenance
The SmartCenterPro™ maintenance module actively contributes to operational reliability and greater productivity, providing all the tools to implement a preventive hatchery maintenance programme.

From incubators and auxiliary systems, to climate control and hatchery automation, unlimited hatchery maintenance or service-orientated tasks can be scheduled into the system.

Each task becomes clearly visible in the hatchery overview screen when it is due. When a task is logged as completed, SmartCenterPro™ calculates the interval to the next due date automatically, to provide a fully updated weekly task list, with reminders for action by the hatchery's maintenance team.

Links to technical support manuals are provided for every predefined task, with easy connection to Pas Reform's spare parts and ordering system for parts supply.

Egg-to-chick traceability with minimal data entry

SmartCenterPro™ delivers detailed reports from every connected hatchery process, with minimal data input.

For every breeder flock taken into production, details of flock name, age and breed are quickly added to the system using easily navigable drop-down menus. Once added, SmartCenterPro™ remembers every piece of information attached to that flock, calculating maternal age with each batch of eggs received, to provide accurate programming information for every hatch cycle.

Using an incubator's individual SmartTouch™ interface, the origin of the eggs is selected from a predefined list when loading the setter.

When the eggs are transferred to the hatcher, their origin and originating setter number are selected using the hatcher's SmartTouch™ interface. The hatcher knows which flock and setter the eggs originated from with a seamless transition that ensures full egg to chick traceability.

Enter data easily using the incubator's SmartTouch™ interface

SmartCenterPro™ also tracks all the farms that chicks are sent to, in a list that contains all hatchery client names, farms and respective farm houses. Chicks from a specific hatcher are allocated to their respective farms.

Intelligent data capture
for informed
decision-making

Hatchery Analysis

Powerful, simple-to-use data analysis tools are incorporated into SmartCenterPro™, to make light work of optimising performance while building a detailed historical database that charts every process and event in day to day operations - and can easily be exported to Excel format.

Integrated data from incubation, climate control and hatchery automation systems produces a unique 'cycle report' for every batch of eggs, including full traceability information with details of chick uniformity, setter and hatcher climate, hatchery climate and alarms.

The Analysis module also provides access to trouble-shooting diagnostics, while building a knowledge base. This enables the hatchery manager to make well-informed decisions for the future refinement and development of incubation programming, hatchery management and maintenance schedules.

This unparalleled visibility, from egg receipt to the on-farm delivery of the day old chicks, through track & trace, alarm and climate, to incubation programming, maintenance and user history, supports the hatchery to meet the traceability demands of its customers.

Dual monitor functionality provides a clear, uninterrupted view: run two screens from a single computer to show separate functions side by side, monitor the effect of changes or compare data.

Track & Trace
### Batch-specific database-building

SmartCenterPro™ delivers the most comprehensive and detailed Track & Trace capability available. From the origin of the hatching eggs at the breeder farm, to the receipt of the day old chicks by the customer's farm, SmartCenterPro™ makes short work of charting, refining and reporting on every event in the hatchery journey.

Fully interactive, hatchery-specific floor plan
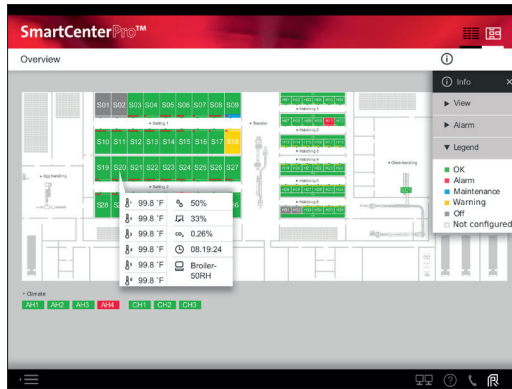
Monitor and control incubation settings
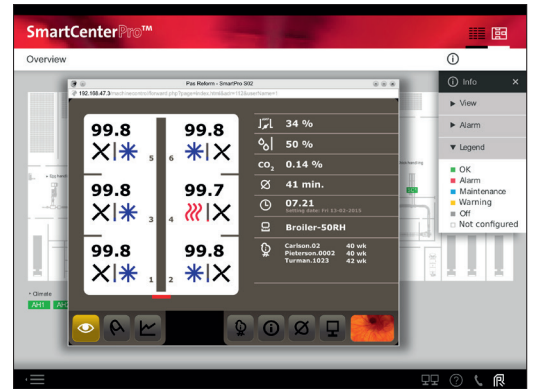
'Zoom the room' for detailed operating parameters
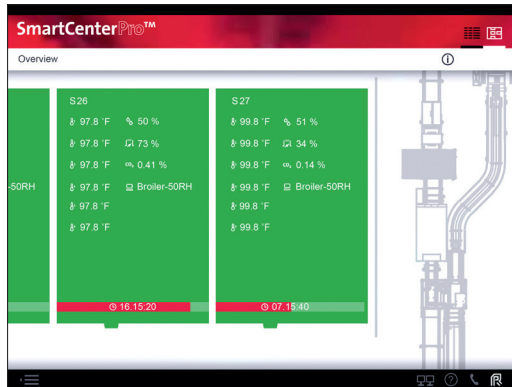
Monitor and control chick counting

Climate reports charted in easy-to-read graphs
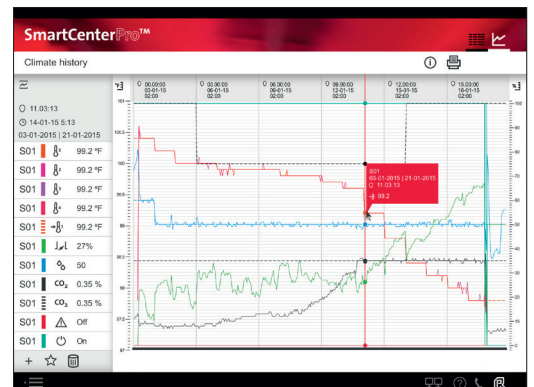
Smart connectivity in the modern hatchery

Three main program tiers for rapid access to SmartCenterPro™'s complete information system:

Hatchery Overview
- Continuously monitor incubators, hatchery automation and climate control systems
- Fine-tune settings for optimum incubation conditions at all times

Hatchery Management
- Manage key functions from track & trace, alarm management and maintenance to breed specific incubation programming

Hatchery Analysis
- Chart every process and event in day to day operations
- Produce real time management reports for batch-specific analysis and decision-making

Hatch window recorded in easy-to-read graphs

SmartCenterPro™

Climate history

20.00:43
03-01-2015 10:04
01-01-2015 | 04-01-2015

H28		96.9 °F
H28		97.0 °F
H28		57
H28		55
H28		54%
H28	CO_2	0.4 %
H28	CO_2	0.4 %
H28		Off
H28		On

Air handling unit control system

SmartCenterPro™

Overview

Pas Reform – Air Handling Unit AHH2
192.168.47.3

Air Handling Unit

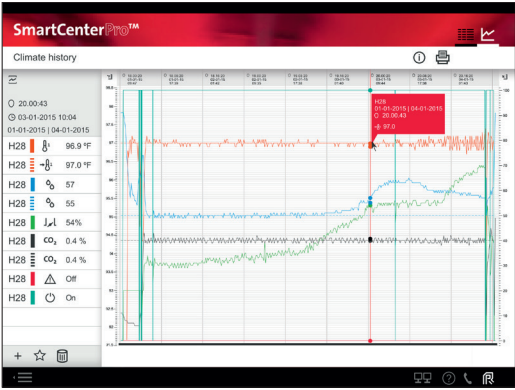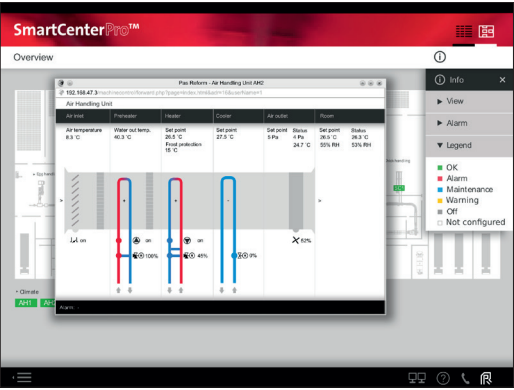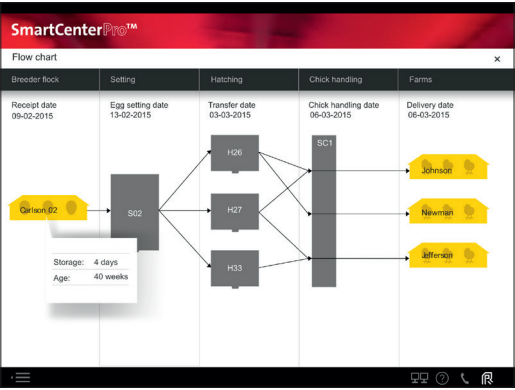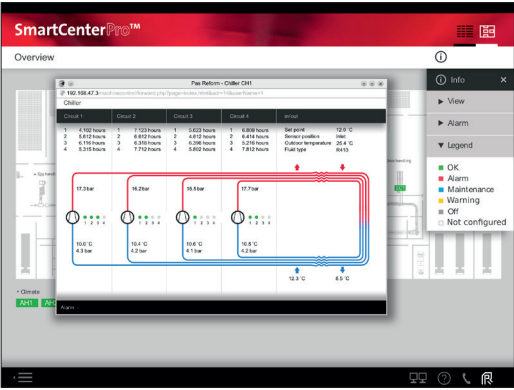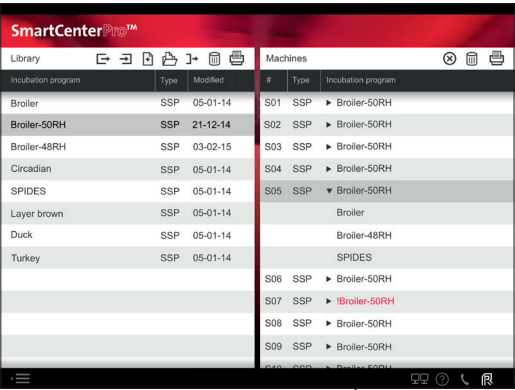| Air inlet | Preheater | Heater | Cooler | Air outlet | Room |
| Air temperature 8.3 °C | Water out temp. 40.3 °C | Set point 26.5 °C Frost protection 18 °C | Set point 27.5 °C | Set point 5 Pa 24.7 °C | Status 26.5 °C 55% RH | Set point 26.5 °C 53% RH |

Info
View
Alarm
Legend
- OK
- Alarm
- Maintenance
- Warning
- Off
- Not configured

Batch-specific traceability information

SmartCenterPro™

Flow chart

| Breeder flock | Setting | Hatching | Chick handling | Farms |
| Receipt date 09-02-2015 | Egg setting date 13-02-2015 | Transfer date 03-03-2015 | Chick handling date 06-03-2015 | Delivery date 06-03-2015 |

Carlson 02 → S02

H26
H27
H33

SC1

Johnson
Newman
Jefferson

Storage: 4 days
Age: 40 weeks

Chilled water system control

SmartCenterPro™

Overview

Pas Reform – Chiller CH1
192.168.47.3

Chiller

Circuit 1	Circuit 2	Circuit 3	Circuit 4	Arrival
1 4.102 hours	1 7.123 hours	1 5.623 hours	1 6.809 hours	Set point 12.0 °C
2 5.812 hours	2 6.812 hours	2 4.612 hours	2 6.414 hours	Sensor position Inlet
3 6.116 hours	3 6.316 hours	3 6.286 hours	3 5.216 hours	Outdoor temperature 25.4 °C
4 5.315 hours	4 7.712 hours	4 5.802 hours	4 7.812 hours	Fluid type R413

17.3 bar 16.2 bar 16.5 bar 17.7 bar

10.5 °C 10.4 °C 10.6 °C 10.6 °C
4.3 bar 4.2 bar 4.1 bar 4.2 bar

12.3 °C 6.5 °C

Info
View
Alarm
Legend
- OK
- Alarm
- Maintenance
- Warning
- Off
- Not configured

Database with flexible incubation programmes

SmartCenterPro™

Library

Incubation program	Type	Modified
Broiler	SSP	05-01-14
Broiler-50RH	SSP	21-12-14
Broiler-48RH	SSP	03-02-15
Circadian	SSP	05-01-14
SPIDES	SSP	05-01-14
Layer brown	SSP	05-01-14
Duck	SSP	05-01-14
Turkey	SSP	05-01-14

Machines

#	Type	Incubation program
S01	SSP	Broiler-50RH
S02	SSP	Broiler-50RH
S03	SSP	Broiler-50RH
S04	SSP	Broiler-50RH
S05	SSP	Broiler-50RH
		Broiler
		Broiler-48RH
		SPIDES
S06	SSP	Broiler-50RH
S07	SSP	!Broiler-50RH
S08	SSP	Broiler-50RH
S09	SSP	Broiler-50RH
S10	SSP	Broiler-50RH

Maintenance-management programmes

SmartCenterPro™

Maintenance schedule

Service	Maintenance task	Machine	Engineer	Remark	Interval	Corrective
- 1.0 weeks	Replace humidity sensor	S09	Mark		156.0 weeks	
1.0 weeks	Replace door rubber	H03	John	Left door		V
2.0 weeks	Replace CO_2 sensor	S14	Mark		104.0 weeks	
3.0 weeks	Replace light bulb	H18	Thomas			V
7.0 weeks	Check and clean membranes	S35	John	cooling/ heating/humidity		V
10.0 weeks	Replace V-belts	S34	Thomas		156.0 weeks	
12.0 weeks	Replace filter sensorbox	S21	Mark		26.0 weeks	
13.0 weeks	Replace humidity nozzle	H27	Mark		32.0 weeks	
14.0 weeks	Replace non-return valve	S02	John		208.0 weeks	
17.0 weeks	Replace filters AHU	AHU1	Thomas		35.0 weeks	
17.0 weeks	Replace filters AHU	AHU2	Thomas	Re-stock	35.0 weeks	
17.0 weeks	Replace filters AHU	AHU3	Thomas		35.0 weeks	
17.0 weeks	Replace filters AHU	AHU4	Thomas	Re-stock	35.0 weeks	

Technical support manuals

SmartCenterPro™

Maintenance schedule

Pas Reform – Maintenance
192.168.47.3

Maintenance

Replacing a CO_2 sensor

1 2 3

- Remove splash plate
- Remove filter sensor plate
- Correct the ESD brace
- Disconnect CO_2 sensor
- Install new CO_2 sensor
- Reconnect electrical cables as directed in electrode housing

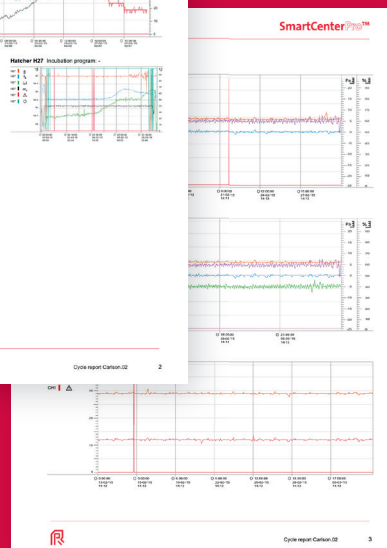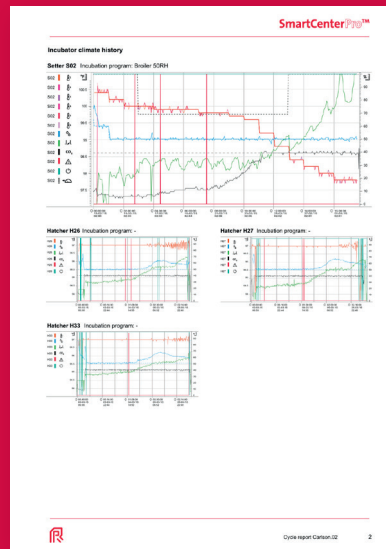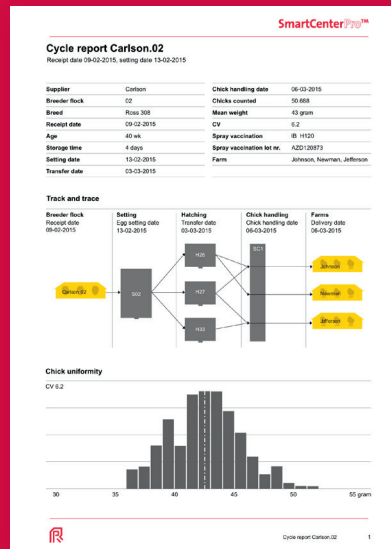| Service	Maintenance task	Machine	Engineer	Remark	Interval	Corrective
- 1.0 week					156.0 weeks	
1.0 week						
2.0 week					104.0 weeks	
3.0 week						V
7.0 week				ty		V
10.0 week					156.0 weeks	
12.0 week					26.0 weeks	
13.0 week					32.0 weeks	
14.0 week					208.0 weeks	
17.0 week					35.0 weeks	
17.0 week					35.0 weeks	
17.0 weeks	Replace filters AHU	AHU3	Thomas		35.0 weeks	
17.0 weeks	Replace filters AHU	AHU4	Thomas	Re-stock	35.0 weeks	

Unparalleled data insights from every area of hatchery operations

Every egg-to-chick journey and hatchery process, from the receipt of hatching eggs to sending the day old chicks to the farm, culminates in a unique cycle report, containing batch specific information on traceability, chick uniformity, setter and hatcher climate, hatchery climate and alarms.

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Hatchery Technologies

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