

Rheonics Printing Solution (RPS InkSight)

Inline ink viscosity management solution for printing presses

PICTURES DECK

Company Name: Rheonics

Winterthur, Switzerland & Sugar Land, Texas, U.S.A.



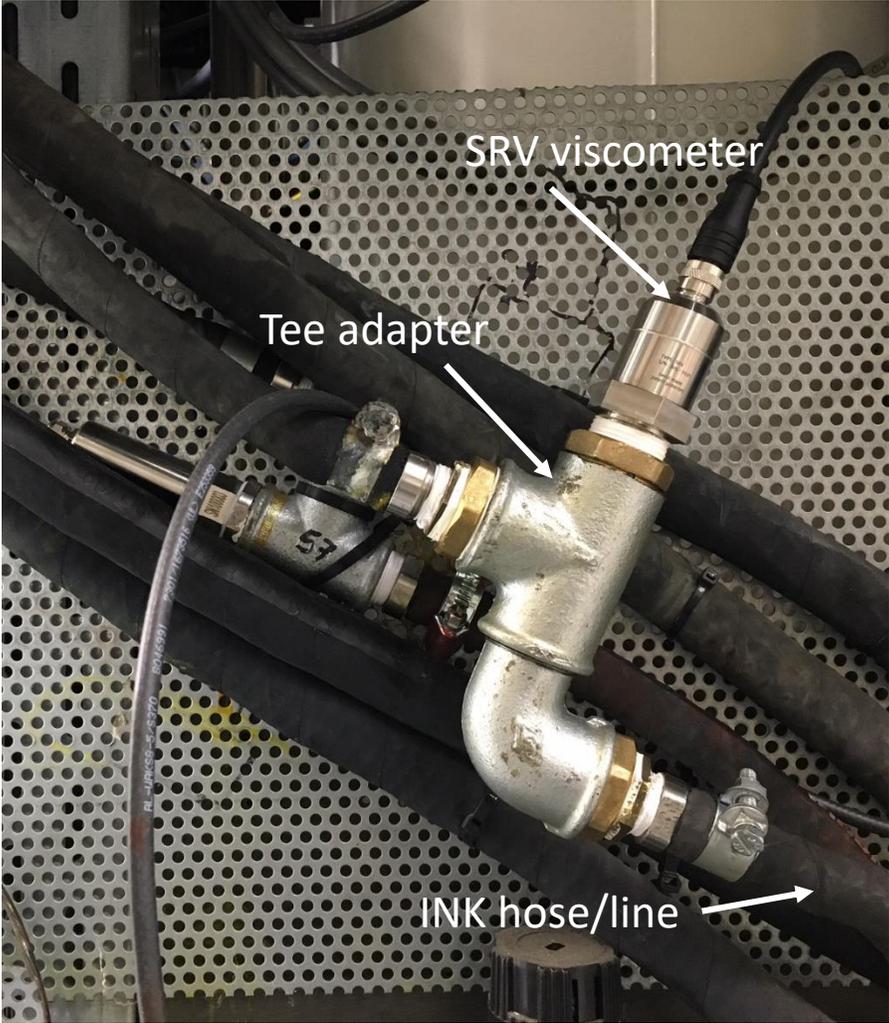
1. Installation

- Viscometers
- Electronics
- Solvent Correction Valves

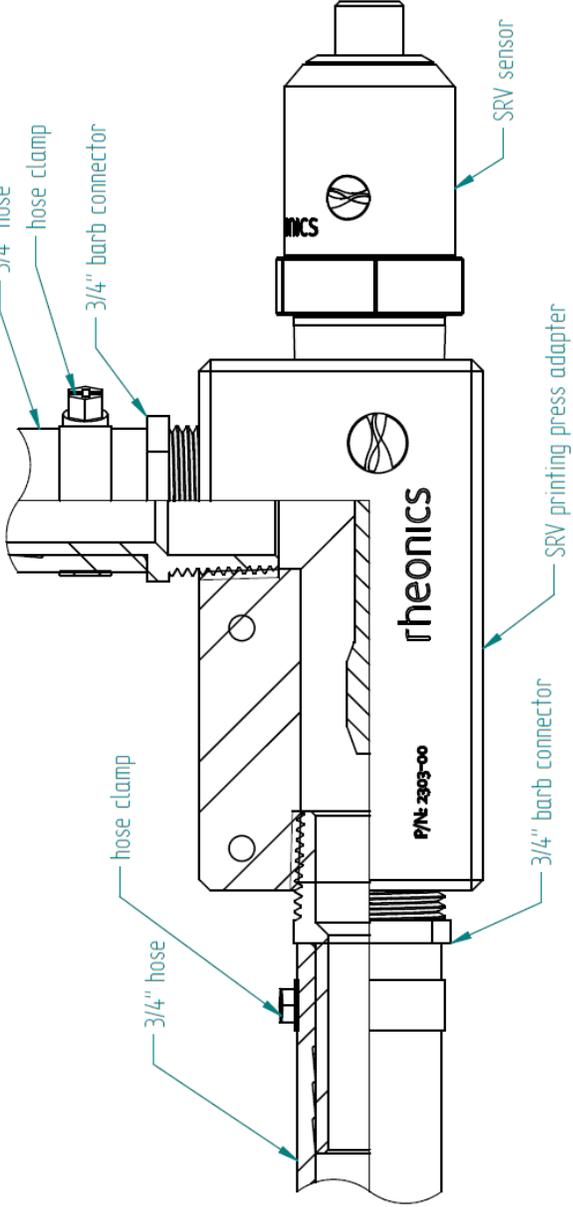
Showing SRV viscometers inline installation inside printing press



SRV Viscometers inline installation using Tee adapters



SRV Viscometers inline installation using Flowthrough ac



Rheonics Sensor Electronics units



Sensor electronics (SMET)

Supports multiple digital and analog communication protocols, edge processing and cloud connectivity



RPS InkSight Electronics Components



Solvent Correction Valves and Valve Control Island



Angle Seat Solvent Correction Valves



Solvent Correction Valve Control Island

2. Control System Integration

- Option 1: Control integrated in printing machines
- Option 2: Standalone Control Cabinet

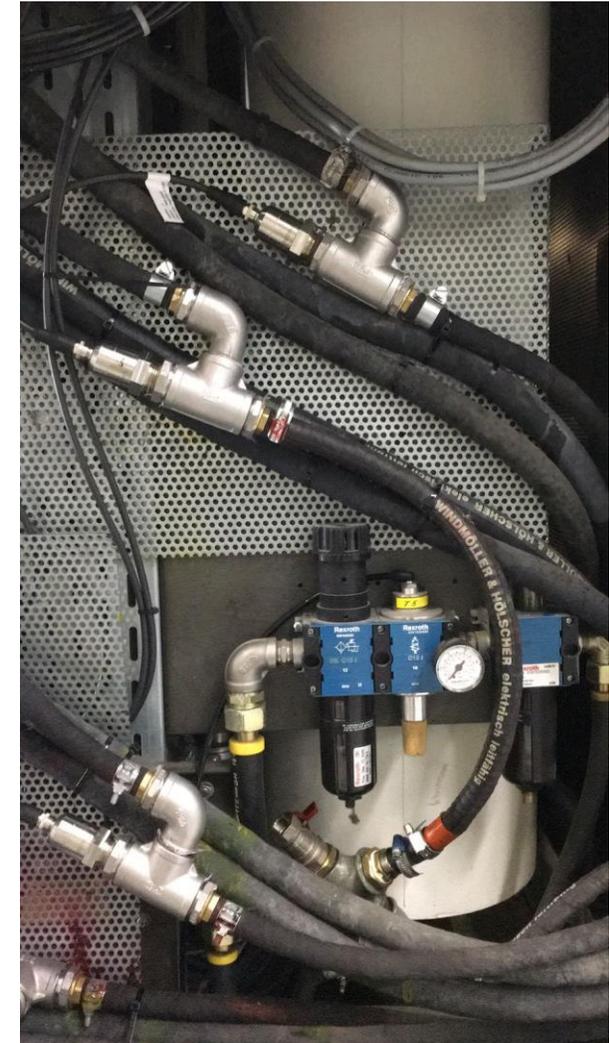
2. Control System Integration

- **Option 1: Control integrated in printing machines**
- Option 2: Standalone Control Cabinet

8-station W&H Primaflex CS Press where RPS InkSight System is integrated in the machines



Inline integration of the SRV sensors



Rheonics electronics and Predictive Tracking Control System integrated in the Printing Press electronics cabinet



Machine electronics cabinet



RPS InkSight Integrated in W&H 8-station Primaflex CI flexo press SmartView Operator Console collocated with Machine HMI



Rheonics SmartView Console: Integrated in the press for operators' overview and control

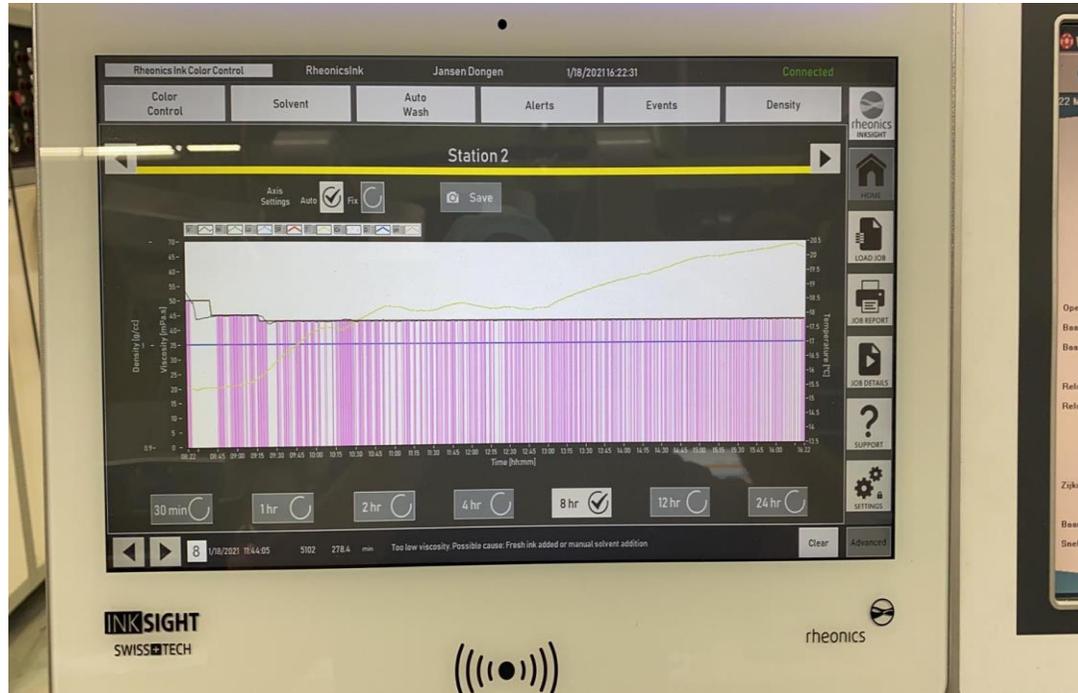


Rheonics SmartView Console

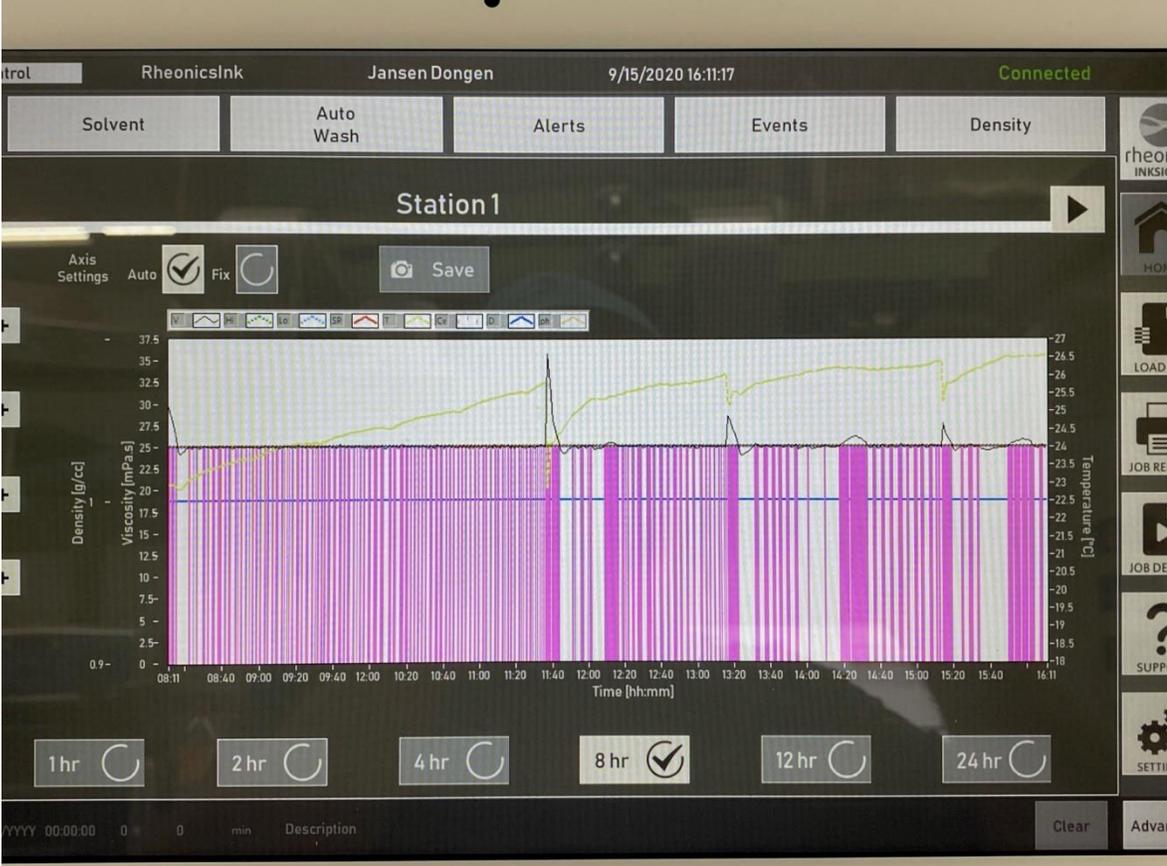
Integrated Alarm (Visual, Audio), wireless, LAN, RFID



Rheonics SmartView Console: Integrated in the press for operators' overview and control (GUI overview)



Rheonics SmartView Console: Integrated in the press for operators' overview and control (GUI overview)



2. Control System Integration

- Option 1: Control integrated in printing machines
- **Option 2: Standalone Control Cabinet**

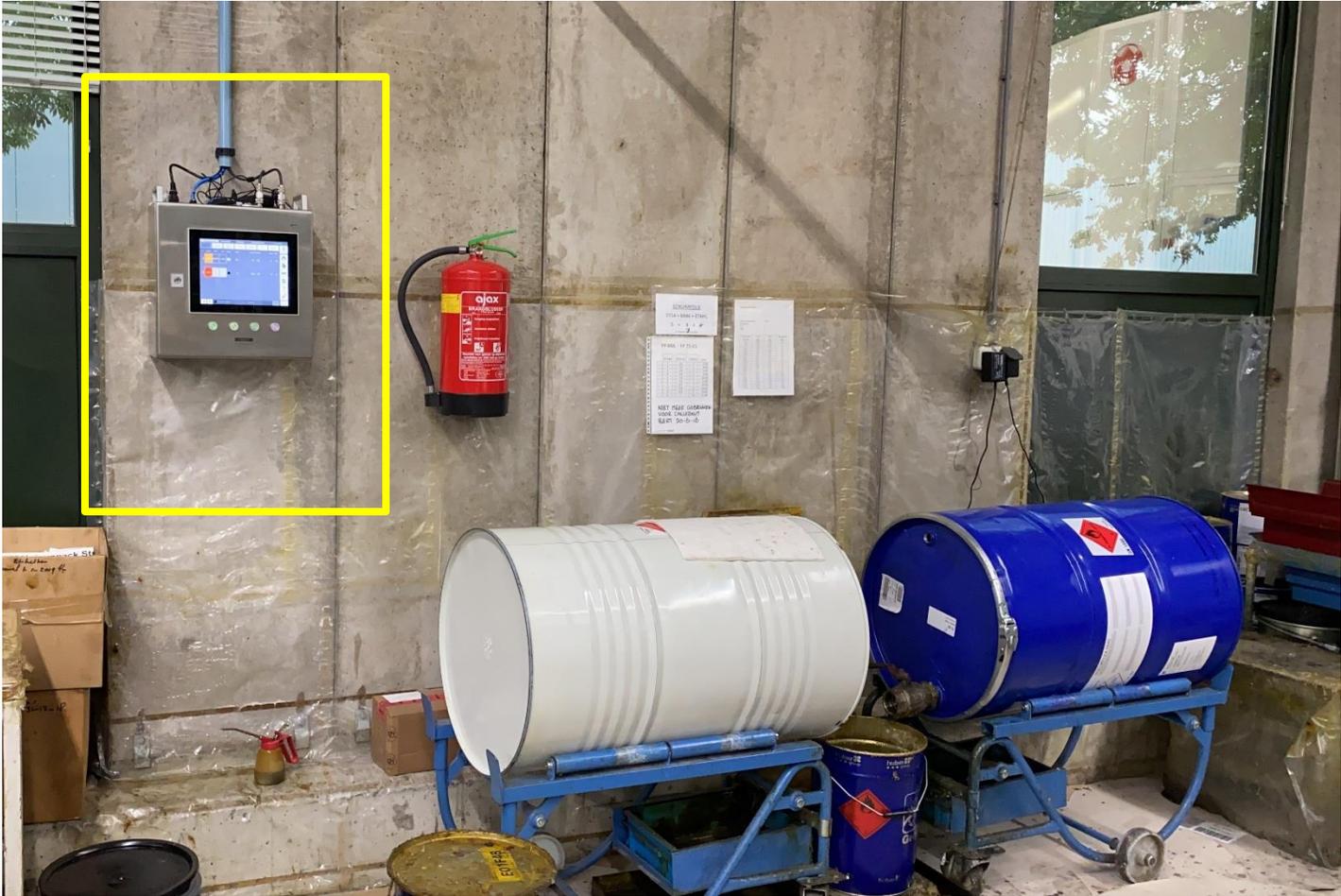
A Laminator using the RPS InkSight, where a standalone control cabinet is used



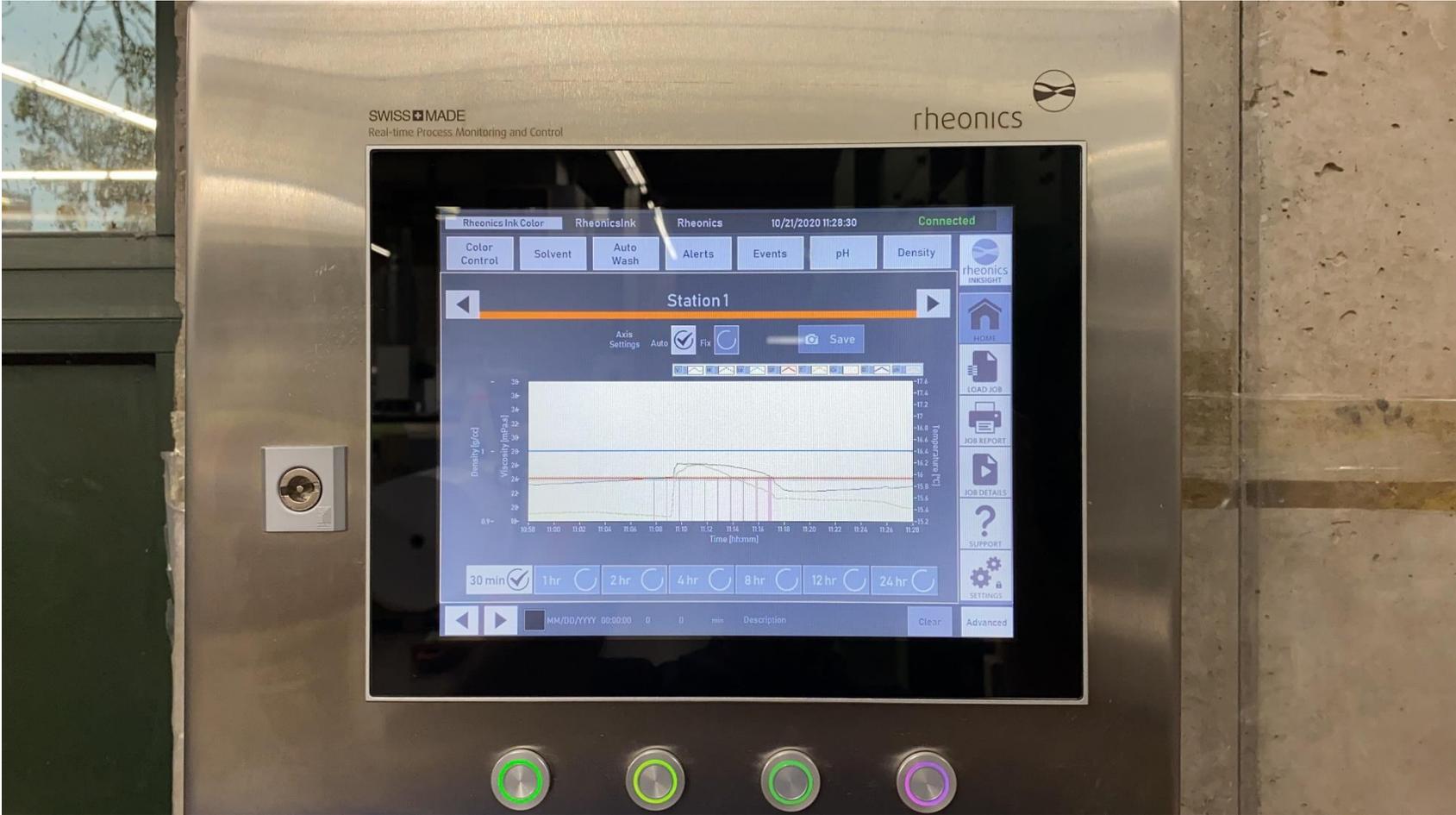
Inline integration of SRV viscometer using Tee adapter



Standalone Predictive Tracking control cabinet RPS-A (with display)



Standalone Predictive Tracking control cabinet RPS-A (showing the interface for operator interaction)



Standalone Predictive Tracking control cabinet RPS-C on 7-station BOBST flexo sheet press, supports external display & SmartView

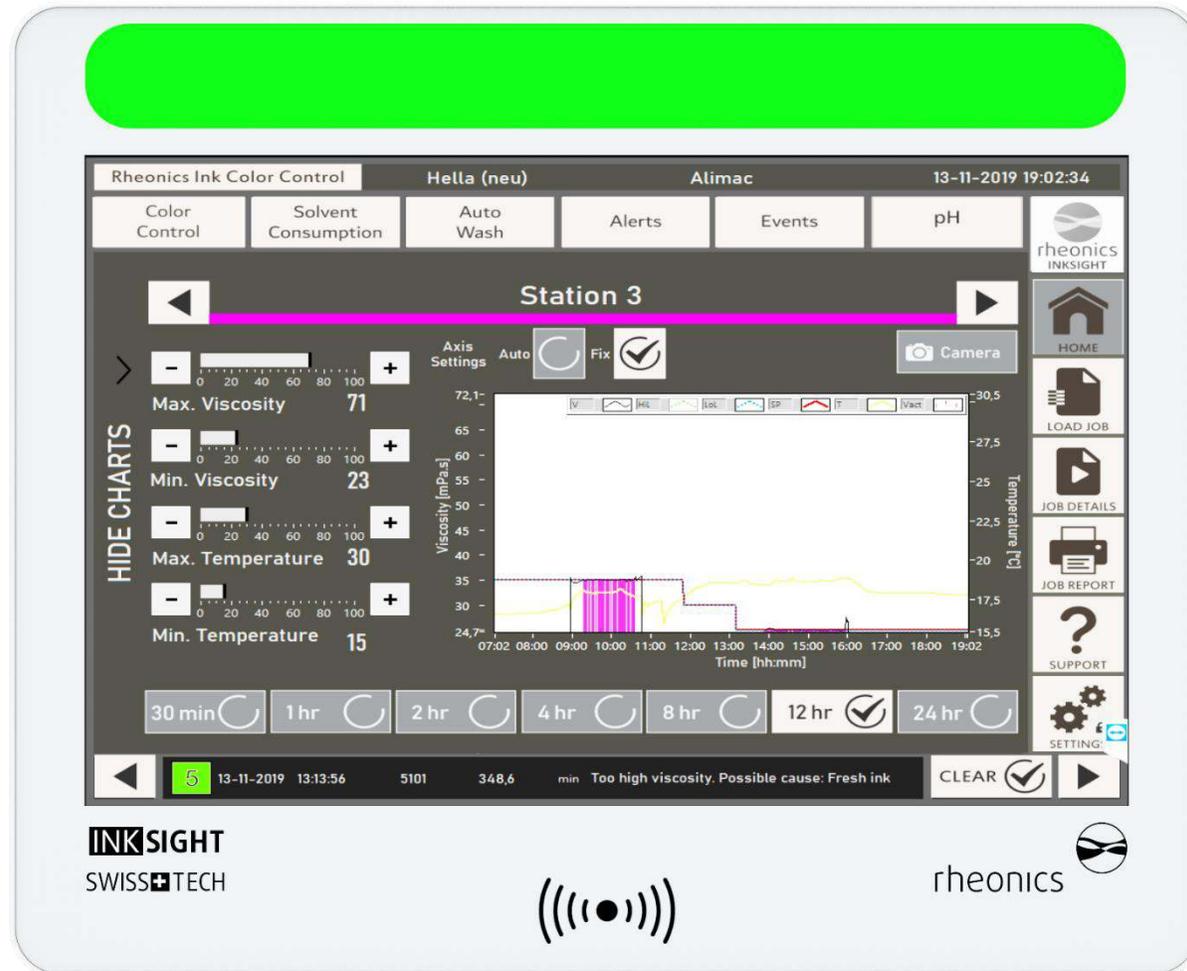


3. InkSight ColorLock Software

- Software screenshots

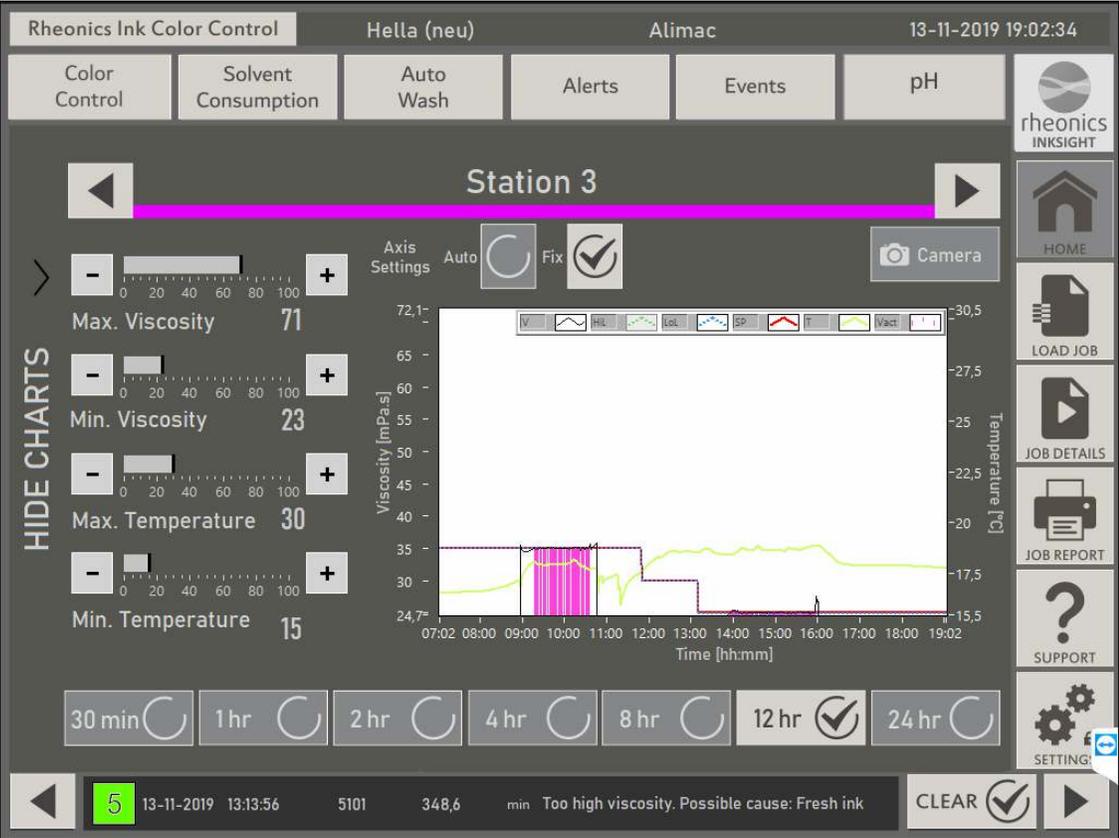
SMARTVIEW

Home, Station-3, 12 hours Overview



Home - 4, 12 hours job ink viscosity

Viscosity and temperature trend, setpoints, control limits



2 stations Color Control Overview – Actual, Setpoint viscosity

Rheonics Ink Color Control TestY Mbhs 13/11/2019 12:10:18

Color Control Solvent Consumption Auto Wash Alerts Events pH

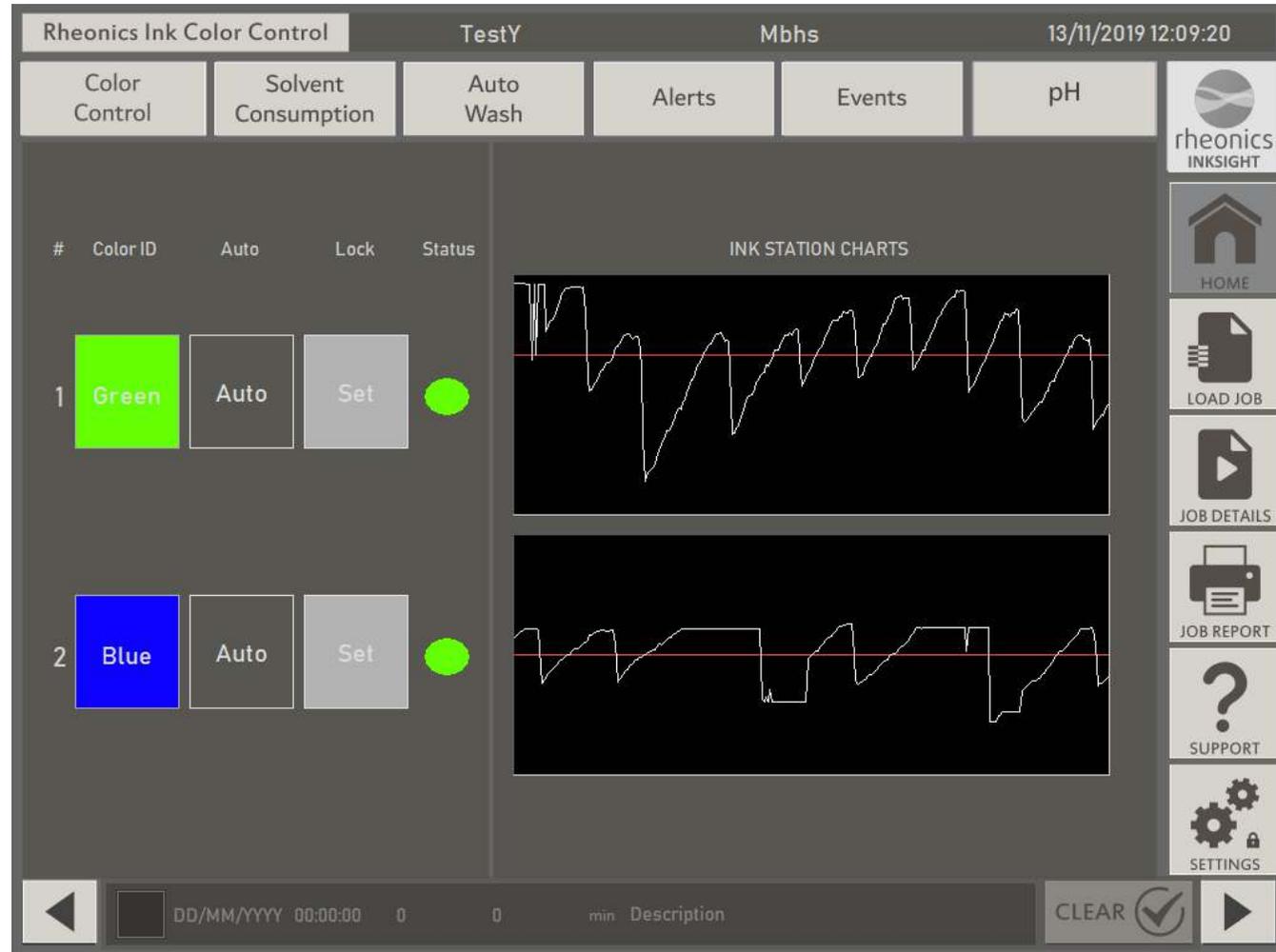
Advanced 

#	Color ID	Auto	Lock	Status	Actual	Set Point	Tolerance	pH
1	Green	Auto	Set		66.1	67	1	0
2	Blue	Auto	Set		25.2	25	1	0

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 SUPPORT
 SETTINGS

 DD/MM/YYYY 00:00:00 0 0 min Description CLEAR  

2 stations Color Control Overview – Ink Station Charts



8 stations Color Control Overview

Rheonics Ink Color Control Hella (neu) Alimac 13-11-2019 18:14:46

Color Control Solvent Consumption Auto Wash Alerts Events pH

Advanced 

#	COLOR ID	COLOR LOCK	STATUS	Actual	Set Point	Tolerance	pH
1	B wit	LOCK		0	33	0,1	0
2	geel	LOCK		0	35	0,1	0
3	2339	LOCK		0,2	25	0,1	0
4	cyaan	LOCK		0,2	35	0,1	0
5	7732	LOCK		0	25	0,1	0
6	Zwart	LOCK		11,6	40	0,1	0
7	Coolgrey	LOCK		0	30	0,1	0
8	wit	LOCK		0	45	0,1	0

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5 13-11-2019 13:13:56 5101 300,8 min Too high viscosity. Possible cause: Fresh ink CLEAR  

8 stations Color Control Overview – Ink Station Charts

Rheonics Ink Color Control Hella (neu) Alimac 13-11-2019 18:15:36

Color Control Solvent Consumption Auto Wash Alerts Events pH

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#	COLOR ID	COLOR LOCK	STATUS	INK STATION CHARTS
1	B wit	LOCK	●	
2	geel	LOCK	●	
3	2339	LOCK	●	
4	cyaan	LOCK	●	
5	7732	LOCK	●	
6	Zwart	LOCK	●	
7	Coolgrey	LOCK	●	
8	wit	LOCK	●	

5 13-11-2019 13:13:56 5101 301,7 min Too high viscosity. Possible cause: Fresh ink CLEAR ✓

pH, 2 stations – Actual, Setpoint

Rheonics Ink Color Control TestY Mbhs 13/11/2019 12:11:54

Color Control Solvent Consumption Auto Wash Alerts Events pH

Advanced 

#	Color ID	Auto	Lock	Status	Solvent pH Setpoint	Ink pH Setpoint	Tolerance
1	Green	Auto	Set		6.4	6.3	1.1
2	Blue	Auto	Set		6.6	6.4	0.8

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Solvent Level , 2 stations – Actual, Setpoint

Rheonics Ink Color Control TestY Mbhs 13/11/2019 12:10:47

Color Control Solvent Consumption Auto Wash Alerts Events pH

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#	Color ID	Auto	Lock	Status	Solvent Use	Solvent Level	pH
1	Green	Auto	Set		9.2 g/min		0
2	Blue	Auto	Set		10.7 g/min		0

DD/MM/YYYY 00:00:00 0 0 min Description CLEAR

Events: 2 stations

Rheonics Ink Color Control TestY Mbhs 13/11/2019 12:11:35

Color Control Solvent Consumption Auto Wash Alerts Events pH

#	Color ID	Auto	Lock	Status	Time and Date	Description
1	Green	Auto	Set		13/11/19 12:11:05	Waiting (Awaiting Ink Circulation)
2	Blue	Auto	Set		13/11/19 12:10:21	Waiting (Awaiting Ink Circulation)

Navigation icons: HOME, LOAD JOB, JOB DETAILS, JOB REPORT, SUPPORT, SETTINGS

Footer: DD/MM/YYYY 00:00:00 0 0 min Description CLEAR

Diagnostics

Rheonics Ink Color Control
TestY
Mbhs
13/11/2019 12:13:00

Color Control
Solvent Consumption
Auto Wash
Alerts
Events
pH

SETTINGS

ACTIVE	ELECTRONICS TEMPERATURE	SUPPLY VOLTAGE	ERROR CODE
1	0	0	E00
2	0	0	E00
3	0	0	E00
4	0	0	E00
5	0	0	E00
6	0	0	E00
7	0	0	E00
8	0	0	E00
9	0	0	E00
10	0	0	E00

Max. RPS-cabinet temp. 0

VALVE STATUS

COMMUNICATION

Solvent Valve ● Cleaning Valve ●

PLC COMMUNICATION

SIGNAL

0 V ● 24 V ●

CANCEL
PREVIOUS

◀

DD/MM/YYYY 00:00:00 0 0 min Description

▶

CLEAR
✔

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INKSIGHT
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Events

Rheonics Ink Color Control TestY Mbhs 13/11/2019 12:13:27

Color Control Solvent Consumption Auto Wash Alerts **Events** pH

1

CONTROL EVENTS

Date	Time	Description	Duration [s]	Status
13/11/19	12:13:12	Waiting (Awaiting Ink Circulation)	58.6	Auto
13/11/19	12:13:10	Solvent Valve Open	1.4	Auto
13/11/19	12:12:09	Waiting (Awaiting Ink Circulation)	58.6	Auto
13/11/19	12:12:08	Solvent Valve Open	1.4	Auto
13/11/19	12:11:05	Waiting (Awaiting Ink Circulation)	58.3	Auto
13/11/19	12:11:04	Solvent Valve Open	1.7	Auto
13/11/19	12:09:59	Waiting (Awaiting Ink Circulation)	57.9	Auto
13/11/19	12:09:57	Solvent Valve Open	2.1	Auto
13/11/19	12:08:48	Waiting (Awaiting Ink Circulation)	57.4	Auto
13/11/19	12:08:45	Solvent Valve Open	2.6	Auto
13/11/19	12:07:28	Waiting (Awaiting Ink Circulation)	56.7	Auto

JOB EVENTS

Date	Time	Description	Duration [s]	Status
13/11/19	12:02:58	Sensor Auto-Check	112.7	Pass
13/11/19	11:31:00	Sensor Auto-Check	110.9	Pass
13/11/19	10:59:02	Sensor Auto-Check	112.7	Pass
13/11/19	10:27:04	Sensor Auto-Check	112.7	Pass
13/11/19	09:55:06	Sensor Auto-Check	112.7	Pass
13/11/19	09:23:07	Sensor Auto-Check	110.6	Pass
13/11/19	08:51:15	Sensor Auto-Check	32282.7	Pass
12/11/19	20:44:21	Sensor Auto-Check	113.6	Pass
12/11/19	20:41:23	Turbo Cancelled	5.0	Pass
12/11/19	20:41:10	Turbo Dialog on Screen	0.0	Pass
12/11/19	20:12:20	Sensor Auto-Check	112.7	Pass

HIDE EVENTS

DD/MM/YYYY 00:00:00 0 0 min Description CLEAR

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Job Details

Rheonics Ink Color Control TestY Mbhs 13/11/2019 12:12:33

Color Control Solvent Consumption Auto Wash Alerts Events pH

JOB DETAILS

Job Name	TestY	Job Length (m)	500	Units	Metric
Job Run Number	02	Speed (m/min)	100	User Mode	Admin
Customer	Mbhs	Operator Name	MAYBEMAR	+	

1 2

Ink Color		Color ID	Green	Log Evaporation Rate	<input checked="" type="checkbox"/>	Log Solvent Use	<input checked="" type="checkbox"/>
Solvent type	Water	Solvent Flow. (g/s)	5	Log Ink Use	<input checked="" type="checkbox"/>	Copy to All the Stations	<input type="checkbox"/>
Solvent ID	1	Anylox roll (g/m2)	4	Save Cancel			
Initial Ink (Kg)	10	Substrate Width (m)	12				
Initial Solvent (Kg)	4	Coverage [%]	70				

DD/MM/YYYY 00:00:00 0 0 min Description CLEAR

HOME LOAD JOB JOB DETAILS JOB REPORT SUPPORT SETTINGS

Load Job

Rheonics Ink Color Control
TestY
Mbhs
13/11/2019 12:12:15

Color Control
Solvent Consumption
Auto Wash
Alerts
Events
pH

LOAD JOB

CANCEL

Customer Name: Rheonics Job Name: A_190522_125507 Job Number: 20190522_125502 Last Run: 22/05/2019 12:55:08	Customer Name: Rheonics Job Name: B_190530_165528 Job Number: 20190530_165525 Last Run: 30/05/2019 04:55:28
Customer Name: Rheonics Job Name: C_190531_235351 Job Number: 20190531_235344 Last Run: 31/05/2019 11:53:52	Customer Name: Rheonics Job Name: D_190604_224106 Job Number: 20190604_224100 Last Run: 4/06/2019 03:41:06
Customer Name: Rheonics Job Name: E_190605_102010 Job Number: 20190605_102008 Last Run: 5/06/2019 10:20:10	Customer Name: Rheonics Job Name: F_190606_102158 Job Number: 20190606_102156 Last Run: 6/06/2019 10:21:59

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DD/MM/YYYY 00:00:00 0 0 min Description

CLEAR ▶

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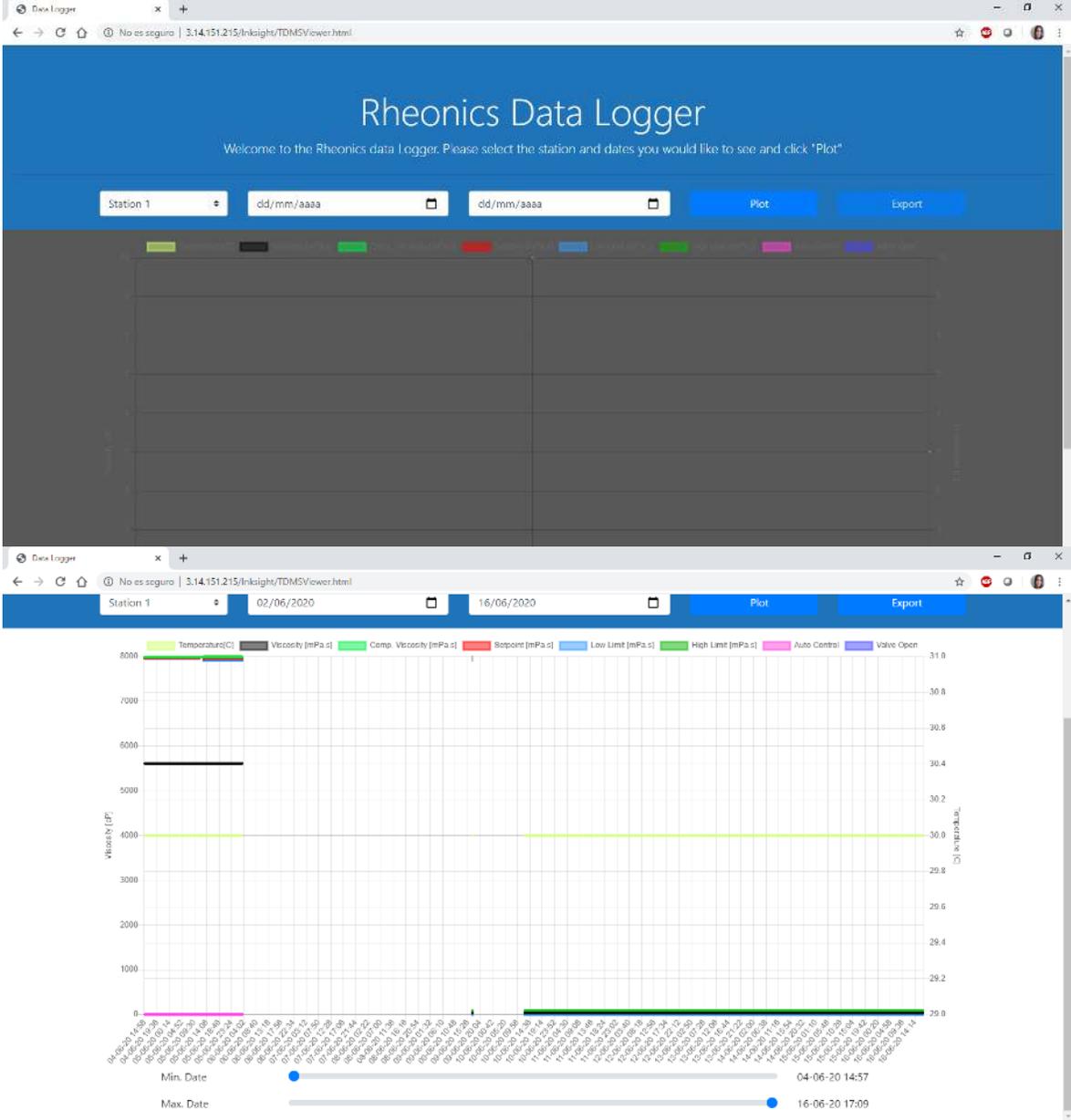
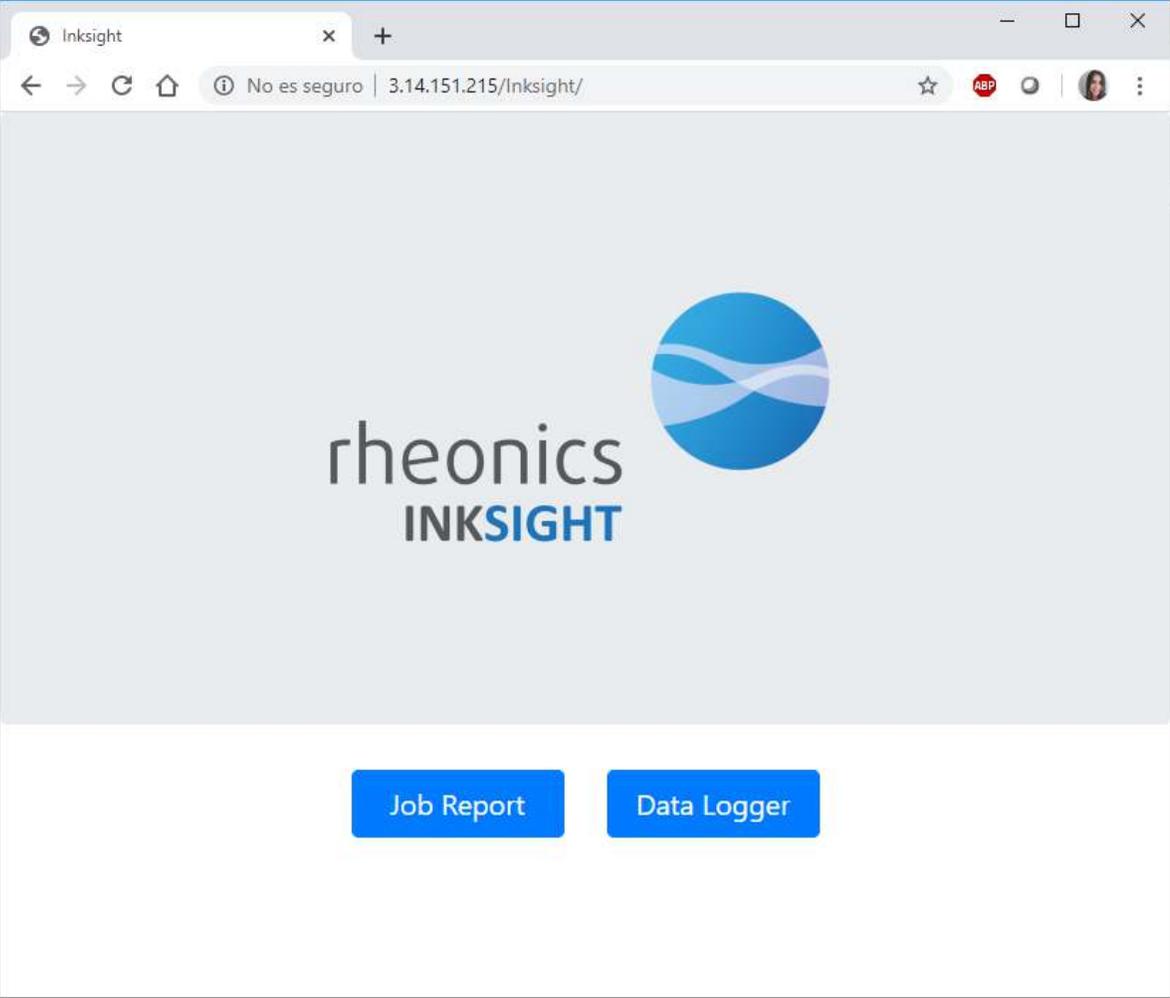
SUPPORT

SETTINGS

4. RPS InkSight Data Connectivity

- Inbuilt webserver
- JSON & OPC UA support for data transfer with factory data acquisition systems

RPS InkSight Integrated Webserver

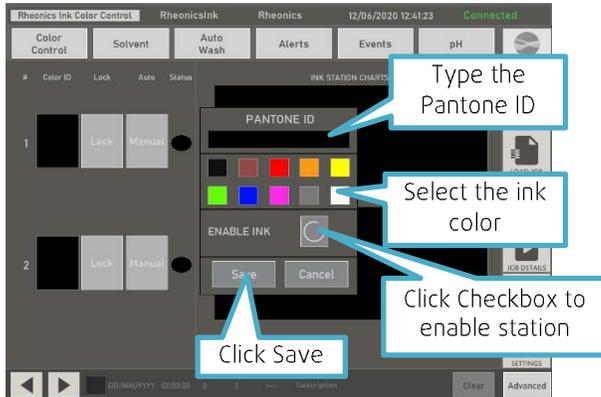


5. RPS InkSight Operator

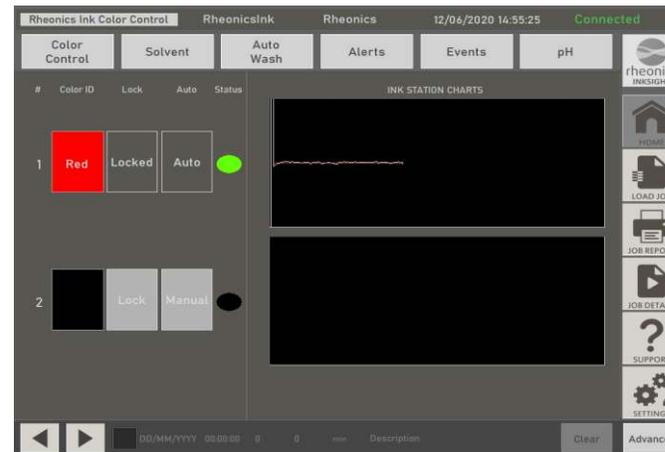
- 3 point LESSON

Operator Effort – 3 steps to consistent prints!

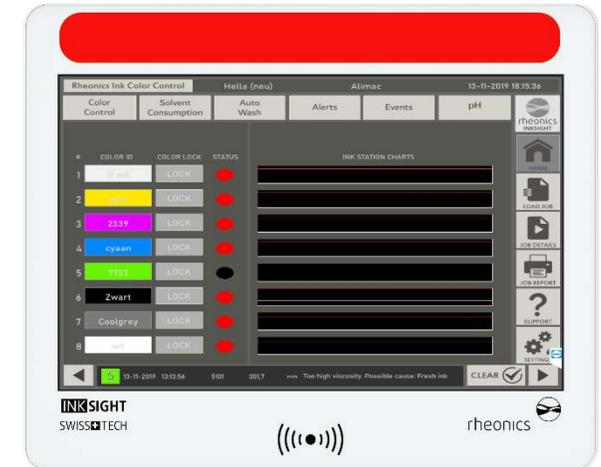
1. Enable ink station in USE



2. Click AUTO button when print is accepted to MASTER



3. React when warning light/sound



No need for constant monitoring

Level 5 autonomy on RPS InkSight means the system will seek intervention when needed



rheonics

inline process
density and viscosity
monitoring



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