

Continuous Process Control System

**ROCKWELL
SOFTWARE**



Allen-Bradley

RSView
Controls

Rv 06-08

ALKAR
ALKAR

Overview

- Controls the entire process
- Easy to understand and use:
 - A lot of information easily viewed instantly accessible
 - Windows Operating System
- Widely used components and software
 - Easier to source / troubleshoot
 - Allen Bradley Programmable Logic Controls

Equipment Status

Additional Screens

Main Control CIP Recipes Charts Maintenance Alarms Exit PLC COMM ●

Wednesday, March 23, 2005 7:59:22 AM

ALOKAR
Control System

Alarm Silence

Machine Hour Meters
Total 33.0 Daily 2.0

Heat Zone 1 Motor Overload

Motor Status

E-Stop Status

E-STOP PLC Panel

Actual Zone Temperatures

Setpoint Temperatures

	Brine Zone	Tempered Brine Zone	Hot Shower	Heat Zone 3 DB WB	Heat Zone 2 DB WB	Heat Zone 1 DB WB	Liquid Smoke
Setpoint (C)	1		55	89 75	79 62	65 47	
Actual (C)	1	1	54	88 75	78 60	65 48	16

Control Buttons

Alarm Messages

Alarm Description

- E-Stop PLC Panel Alarm
- Heat Zone 1 Overload Alarm

Top Conveyor		Speed	Master Pump Start	
1	0	60 Hz.	1	0
Bottom Conveyor		Speed	Master Heat Zones	
1	0	60 Hz.	1	0

Distributed Controls

Individual Control of each Zone's Components

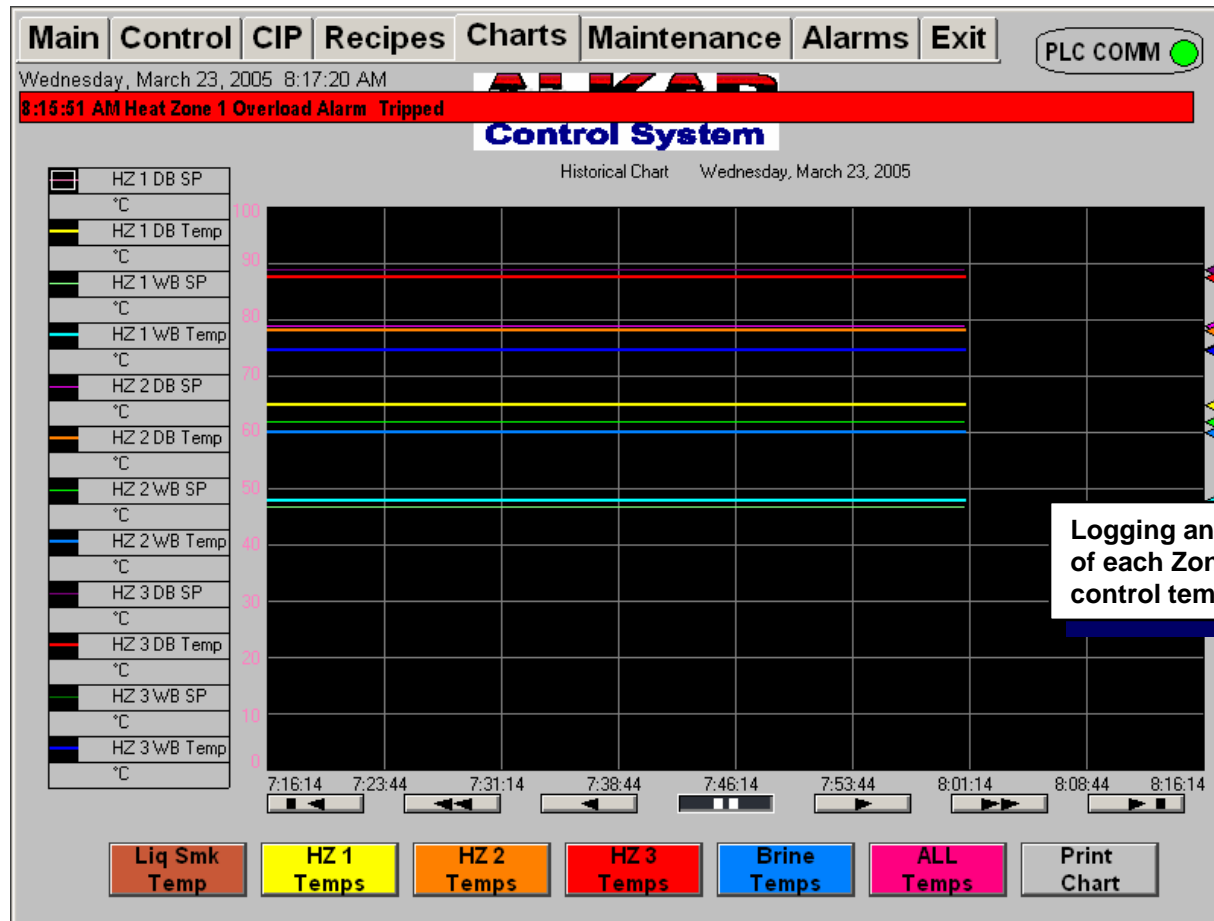
Main Control CIP Recipes Charts Maintenance Alarms Exit PLC COMM

Wednesday, March 23, 2005 7:34:50 AM

ALKAR
Control System

Heat Zone 1 1 0	Heat Zone 1 Exh 1 0	Heat Zone 1 Dampers AUTO Close	Heat Zone 1 Dehumid 1 0
Heat Zone 2 1 0	Heat Zone 2 Exh 1 0	Heat Zone 2 Dampers AUTO Close	
Heat Zone 3 1 0	Heat Zone 3 Exh 1 0	Heat Zone 3 Dampers AUTO Close	
Brine Supply Pump 1 0	Tempered Brine Pump 1 0	Refrigeration 1 0	
Liquid Smoke Pump 1 0	Liquid Smoke Exh 1 0	Hot Shower Pump 1 0	Hot Shower Exh 1 0
Stick Return 1 0	Top Conveyor 1 0	Bottom Conveyor 1 0	

Historical and Runtime Charts



Process Recipes

Main Control CIP Recipes Charts Maintenance Alarms Exit PLC COMM

8:15:51 AM Heat Zone 1 Overload Alarm Tripped

Control System

Recipe Name:

Recipe Date: Default

Comments: Default Comment

Recipe Save

Download Recipe

Recipe File:

- luketest
- small turkeys
- test
- test recipe 1
- test recipe 2

Save

Restore

Cancel

Help

Setpoint	Actual (C)	Heat Zone 2 DB	Heat Zone 2 WB	Heat Zone 1 DB	Heat Zone 1 WB
	88	75	78	60	65
				47	48

Top Chain Speed Setpoint

60 Hertz

Bottom Chain Speed Setpoint

60 Hertz

Char

Al

Create Cook processes for each type of product, defining zone setpoint temperatures and conveyor speed

CIP Control System

Start/Stop
Control of the
CIP System

RAW CIP Dwell Times

CIP Dwell Time Settings

	Cleaning	Rinse
CIP Auto Valve 9 - Brine Zone	30 sec.	10 sec.
CIP Auto Valve 8 - Hot Shower Zone	30 sec.	10 sec.
CIP Auto Valve 7 - Heat Zone #3 Equipment Cleaning	30 sec.	10 sec.
CIP Auto Valve 6 - Heat Zone #3 Supply/Return Duct	30 sec.	10 sec.
CIP Auto Valve 5 - Heat Zone #2 Equipment Cleaning	30 sec.	10 sec.
CIP Auto Valve 4 - Heat Zone #2 Supply/Return Duct	30 sec.	10 sec.
CIP Auto Valve 3 - Heat Zone #1 Equipment Cleaning	30 sec.	10 sec.
CIP Auto Valve 2 - Heat Zone #1 Supply/Return Duct	30 sec.	10 sec.
CIP Auto Valve 1 - Liquid Smoke/Void Zone	30 sec.	10 sec.
Drain all CIP Auto Valves	30 sec.	10 sec.

Exit

Graphical
Display of the
CIP System

Monitor the
Status of the
CIP System

System Alarms

Main Control CIP Recipes Charts Maintenance Alarms Exit

Wednesday, March 23, 2005 8:21:11 AM

ALKAR
Control System

System Alarms

Alarm Date	Alarm Time	Alarm Label	Alarm Description
3/23/2005	8:15:51 AM	Tripped	E-Stop PLC Panel Alarm
3/23/2005	8:15:51 AM	Tripped	Heat Zone 1 Overload Alarm

Execute

Alarm Date	Alarm Time	Alarm Label	Alarm Description
3/23/2005	8:15:51 AM	Tripped	E-Stop PLC Panel Alarm
3/23/2005	8:15:51 AM	Tripped	Heat Zone 1 Overload Alarm

Execute Filter Sort

Alarm Silence

Current Alarms


Current and Historical Alarms



Maintenance

[Main](#) | [Control](#) | [CIP](#) | [Recipes](#) | [Charts](#) | **Maintenance** | [Alarms](#) | [Exit](#)

Wednesday, March 23, 2005 7:47:41 AM
 PLC COMM ●



	Slot: 0 1747-L542C	Slot: 1 1746-IA16	Slot: 2 1746-IA16	Slot: 3 1746-OW16	Slot: 4 1746-OW16	Slot: 5 1746-IA16	Slot: 6 1746-OW16
	00 ●	00 ●	00 ●	00 ○	00 ○	00 ●	00 ○
RUNFORCE	01 ○	01 ○	01 ○	01 ○	01 ○	01 ●	01 ○
<input checked="" type="checkbox"/>	02 ●	02 ●	02 ●	02 ○	02 ○	02 ●	02 ○
	03 ●	03 ●	03 ○	03 ○	03 ○	03 ●	03 ○
FLT DH485	04 ●	04 ●	04 ○	04 ○	04 ○	04 ●	04 ○
<input type="checkbox"/>	05 ●	05 ●	05 ○	05 ○	05 ○	05 ●	05 ○
	06 ○	06 ○	06 ●	06 ○	06 ○	06 ○	06 ○
BATRS232	07 ○	07 ○	07 ○	07 ○	07 ○	07 ○	07 ○
<input type="checkbox"/>	08 ●	08 ○	08 ○	08 ○	08 ○	08 ●	08 ○
	09 ○	09 ○	09 ●	09 ○	09 ○	09 ○	09 ○
	10 ●	10 ○	10 ○	10 ○	10 ○	10 ●	10 ○
	11 ●	11 ○	11 ○	11 ○	11 ○	11 ○	11 ○
	12 ●	12 ○	12 ○	12 ○	12 ○	12 ●	12 ○
	13 ●	13 ○	13 ○	13 ○	13 ○	13 ●	13 ○
	14 ○	14 ○	14 ○	14 ○	14 ○	14 ●	14 ○
	15 ○	15 ○	15 ○	15 ○	15 ○	15 ●	15 ●

Monitor the I/O of the PLC

Calibration

Display Rack 2

PM Schedule

PID Settings

Maintenance Schedule

The screenshot displays the 'ALKAR Control System' interface for the 'Lubrication and Inspection Schedule'. At the top right, there is a 'PLC COMM' indicator. The main content is organized into two columns: '60 Hours of Operation' and '200 Hours of Operation'. The '60 Hours of Operation' column lists tasks such as checking utilities, dampers, gaskets, air filters, sensors, chain/belt tensions, conveyor chain, chain lubricator, exhaust fan bearings, conveyor and shaft bearings, linkage wear, damper operation, and main blower bearing. A '60 Hour Inspection Complete' button is located below this list. The '200 Hours of Operation' column lists tasks like checking plastic wear strips, drive belts, locking collars, bearings, shaft couples, and steam humidity piping. Below this list is a '200 Hour Inspection Complete' button. Further down, a '1200 Hours of Operation' section lists tasks for E-Stop switches, air return duct, and pneumatic valves, with a '1200 Hour Inspection Complete' button below. A '2500 Hours of Operation' section lists tasks for gearboxes, cleaning system, air velocity, and pneumatic piping, with a '2500 Hour Inspection Complete' button below. At the bottom of the interface are three buttons: 'Change Password', 'Alarm Silence', and 'Check Inspection Schedule'.

ALKAR Control System

PLC COMM

Lubrication and Inspection Schedule

60 Hours of Operation

- Check Gas, Water, Steam and Refrigeration Utilities
- Check exhaust, intake, and smoke dampers
- Check door gaskets and repair as required
- Check control air filters and control air pressure
- Calibrate of temperature sensors
- Check chain and belt tensions
- Check conveyor chain
- Check chain lubricator
- Lubricate exhaust fan bearings
- Grease conveyor and shaft bearings
- Check all linkage for wear and adjustment
- Check oscillating damper operation
- Lubricate main blower bearing

60 Hour Inspection Complete

200 Hours of Operation

- Check plastic wear strips on chain rails
- Check drive belts on exhaust and main fans
- Check set screws on all locking collars
- Check set screws on bearings and shaft couples
- Check steam humidity piping

200 Hour Inspection Complete

1200 Hours of Operation

- Check all E-Stop switches
- Check air return duct for loose slides
- Check all pneumatic valves for proper adjustment

1200 Hour Inspection Complete

2500 Hours of Operation

- Drain and refill all gearboxes
- Check cleaning system and clean spray nozzles
- Check air velocity in heat zones
- Check pneumatic piping for leaks

2500 Hour Inspection Complete

Change Password Alarm Silence Check Inspection Schedule

Calibrate Sensors

Wednesday, March 23, 2005 7:56:47 AM



PLC COMM

7:56:25 AM Heat Zone 1 Overload Alarm Tripped

Calibrate RTD Sensors

	Final	Raw	Offset
Heat Zone 1 Dry-bulb Sensor	65.0	65.0	0.0 + -
Heat Zone 1 Wet-bulb Sensor	48.1	48.1	0.0 + -
Heat Zone 2 Dry-bulb Sensor	78.2	78.2	0.0 + -
Heat Zone 2 Wet-bulb Sensor	60.2	60.2	0.0 + -
Heat Zone 3 Dry-bulb Sensor	87.6	87.6	0.0 + -
Heat Zone 3 Wet-bulb Sensor	74.7	74.7	0.0 + -
Hot Shower Sensor	54.4	54.4	0.0 + -
Tempered Brine Zone Sensor	1.2	-4.3	5.5 + -
Brine Zone Sensor	1.0	1.0	0.0 + -

Calibrate RTD Sensors

Change Password

Alarm Silence

Exit


RSView
Controls

Rv 06-08



PID Parameters

12:18:18 PM Heat Zone 1 Overload Alarm Tripped

Control System PLC COMM 

PID SETPOINTS

	Gain	Reset	Rate	Setpoint	Actual	Output	Deviation Alarms	
							High	Low
Heat Zone 1 Dry-bulb	325.0	600.0	25.00	65	65.0	14	20	20
Heat Zone 1 Wet-bulb	650.0	250.0	20.00	47	48.1	0	20	20
Heat Zone 2 Dry-bulb	325.0	250.0	40.00	79	78.2	25	20	20
Heat Zone 2 Wet-bulb	650.0	220.0	20.00	62	60.2	79	20	20
Heat Zone 3 Dry-bulb	300.0	375.0	40.00	89	87.6	33	20	20
Heat Zone 3 Wet-bulb	400.0	250.0	40.00	75	74.7	18	20	20
Hot Shower	90.0	250.0	4.00	55	54.4	56	10	10
Brine Zone	125.0	225.0	1.90	1	1.0	4	10	10

Tune PID Parameters

Change Password **Alarm Silence** **Exit**

Computer Specifications

- Industrial computer components
- Intel Pentium M – 1.0 GHZ processor
- No fan; rotating hard drive
- Windows XP embedded or Pro operating system
- 4-USB 2.0 ports
- Compact flash card for operating system and one for log files
- Ethernet port to communicate to PLC and plant network

PLC Specifications

- Allen Bradley CompactLogix programmable logic controller with built-in ethernet port
- 24 volt DC digital inputs and outputs
- 100 ohm RTD analog inputs
- 4 to 20 mA analog outputs
- Ethernet IP network (reduces field wiring; better diagnostics)

Continuous Process Control System

**ROCKWELL
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END

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Controls

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