

# Control Systems Catalogue



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 **Allen-Bradley**

ControlLogix 


SLC500 

PLC5 

**SIEMENS**

Simatic S7-300 

Simatic S7-400 

 **Telemecanique**

**OMRON**

 **MITSUBISHI  
ELECTRIC**

# Control Systems Catalogue



## PLC Systems

- Overview
- Example Networks
  - Different Levels
  - With Siemens
  - With AllenBradley

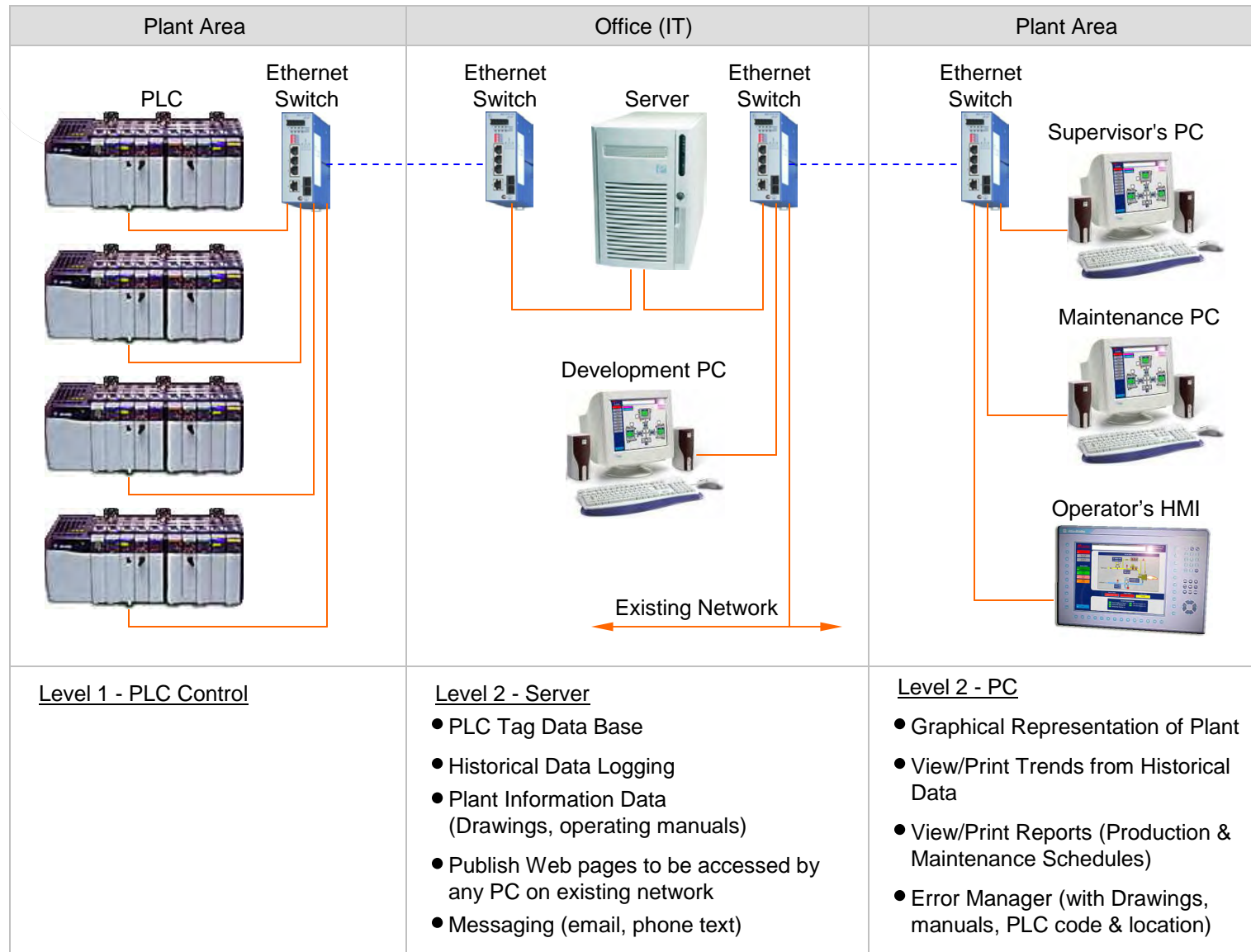
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## Casthouse SCADA Expansion



----- Fibre Optic

----- Ethernet Cat 5E

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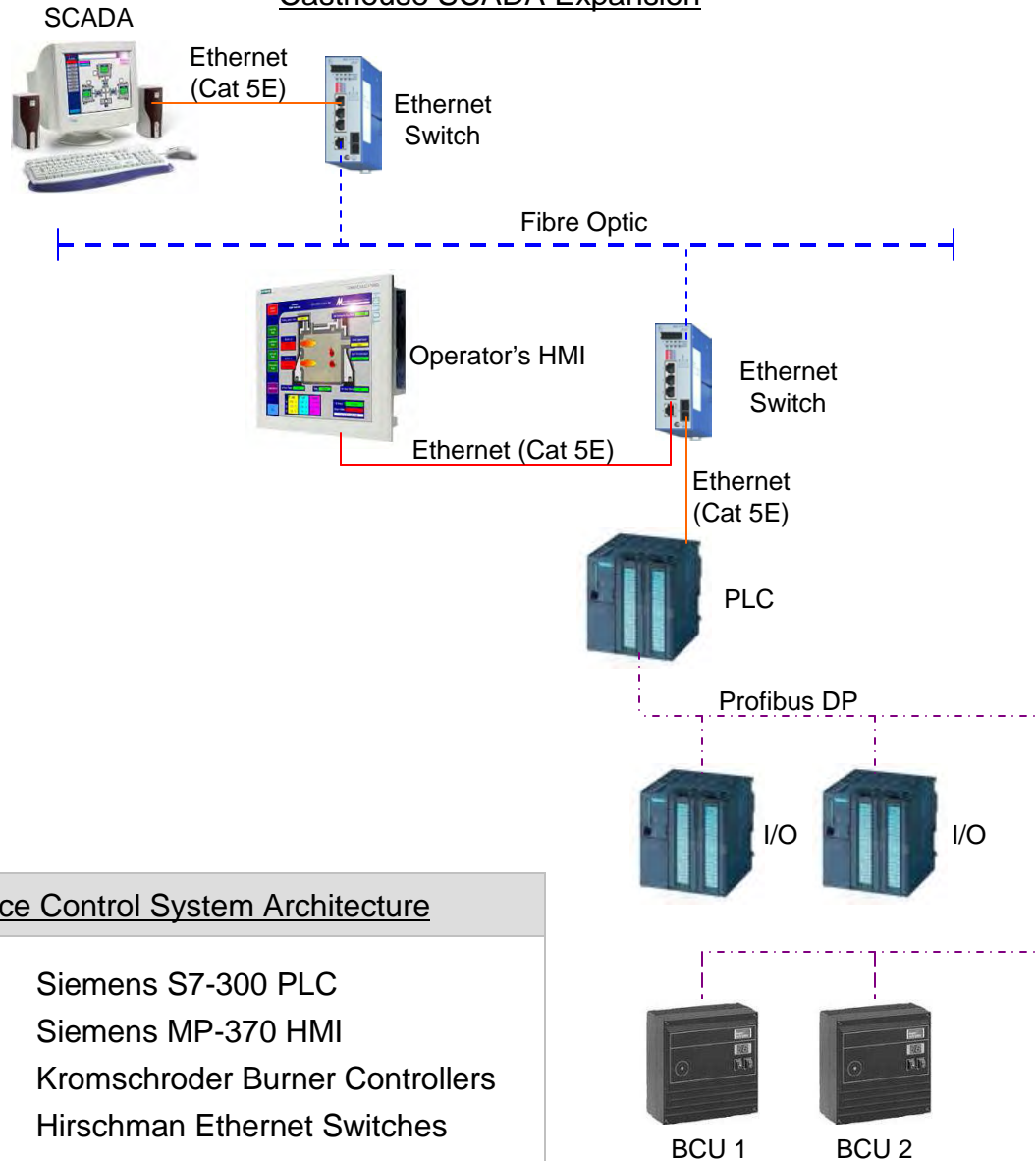
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### Casthouse SCADA Expansion



### Typical Furnace Control System Architecture

Equipment : Siemens S7-300 PLC  
 Siemens MP-370 HMI  
 Kromschroder Burner Controllers  
 Hirschman Ethernet Switches

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## PLC Systems

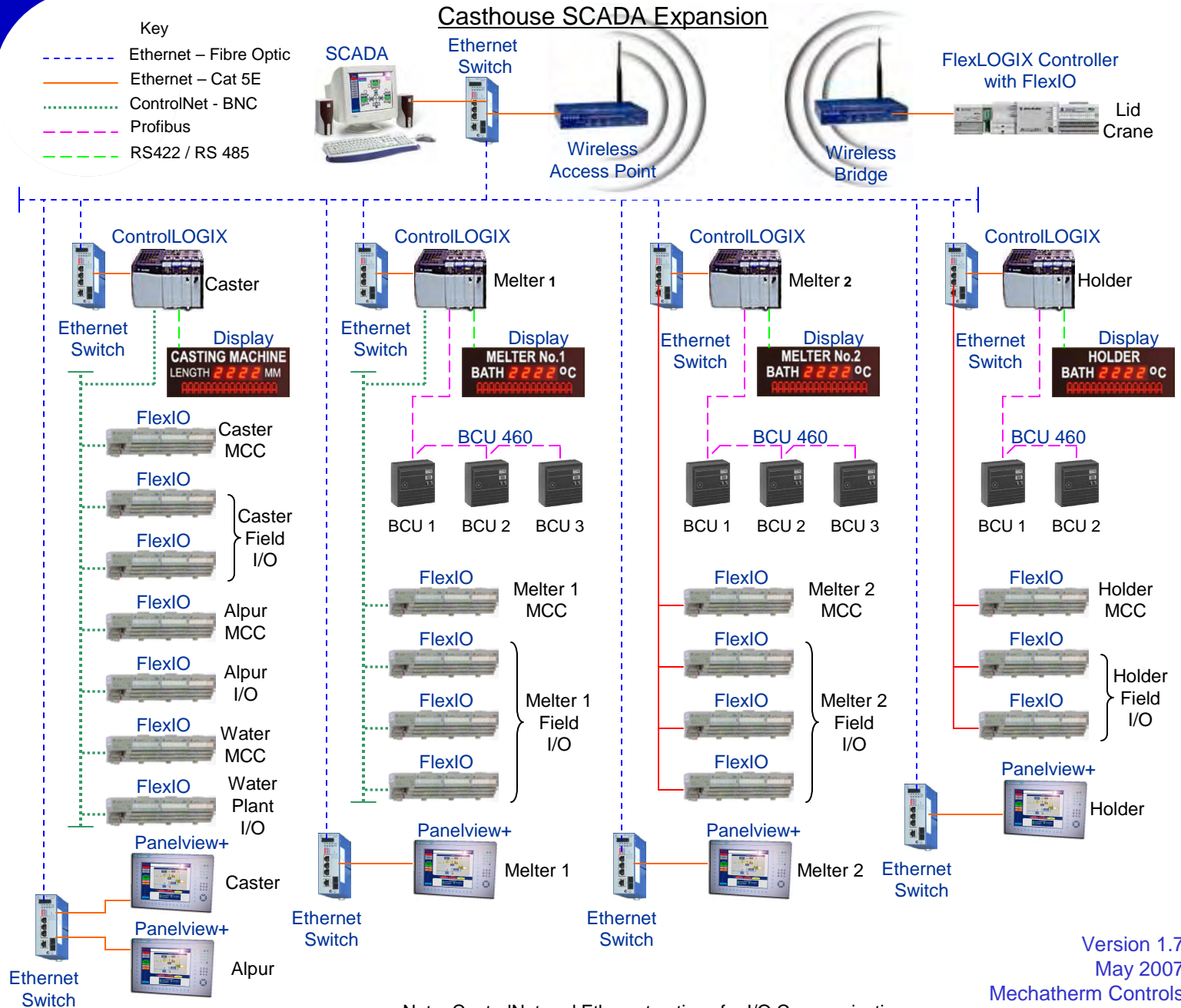
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Note: ControlNet and Ethernet options for I/O Communications

Version 1.7  
May 2007  
Mechatherm Controls



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## Human / Machine Interface

Full in house design to clients specification by dedicated software team

### Features

Simple Status Colour Codes

Easy Menu Navigation

Cost Effective

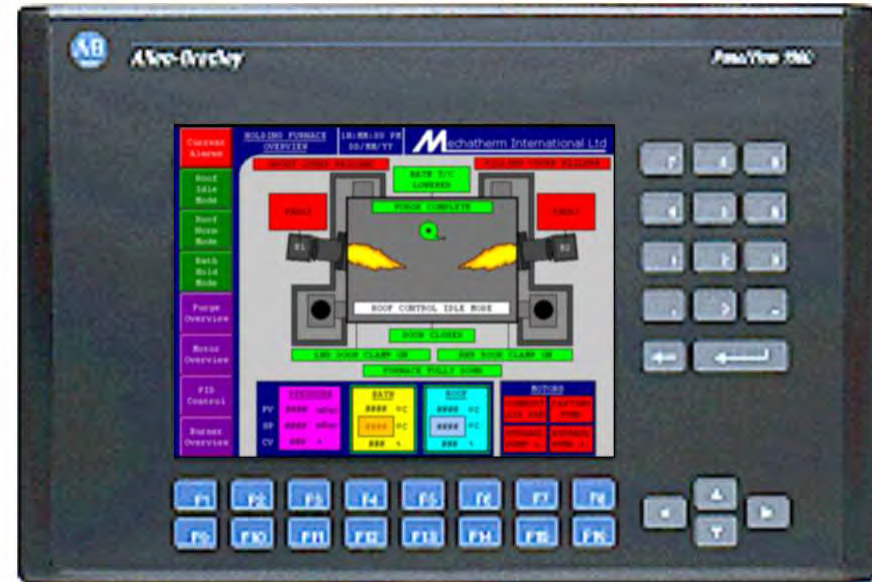
Plant Control

Parameter Entry

Alarm Management

Online Monitoring

Operator Access Control



Holding Furnace

Allen Bradley PV1000 (Touch Screen/Keypad)

Specialists with Allen Bradley, Siemens Hardware/Software and Wonderware InTouch



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## Allen Bradley Panelview+

Mechatherm's ongoing commitment to using the latest technology has led to traditional panel views being replaced by the *Panelview+* range of industrial computers from Allen-Bradley.

- Compact panel mounting design.
- 225MHz 32-bit processor.
- Windows CE operating system.
- Software application : RSVIEW Machine Edition.
- Wide Range of connectivity.
- Built in hardware diagnostics.



Allen Bradley *Panelview+* (Touch Screen/Keypad)



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## Siemens MP-370

Mechatherm's ongoing commitment to using the latest technology has led to traditional operator panels being replaced by the Multi Panel range of industrial computers from Siemens.

- Rugged, compact and open for machine-level use  
IP65 when panel mounted
- Windows CE operating system
- One configuration software fits all
- Wide Range of connectivity
- Built in hardware diagnostics



Siemens *MP-370* (Touch Screen)



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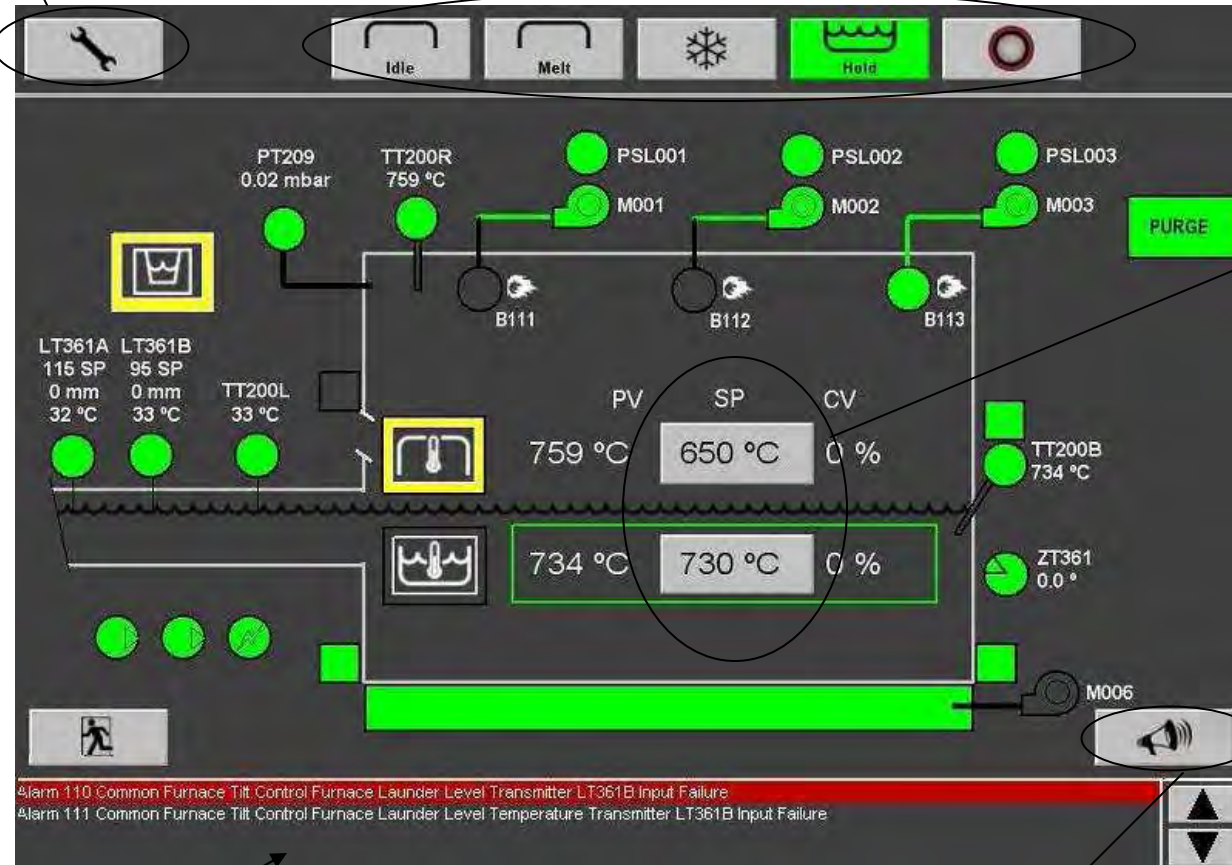
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## Sample Screen : Melting Furnace Overview

Access to  
Maintenance Menu

Temperature Control  
Mode Selection



Temperature  
Entry

Alarm  
Banner

Access to  
Alarm  
Screen

Version 1.7  
May 2007  
Mechatherm Controls



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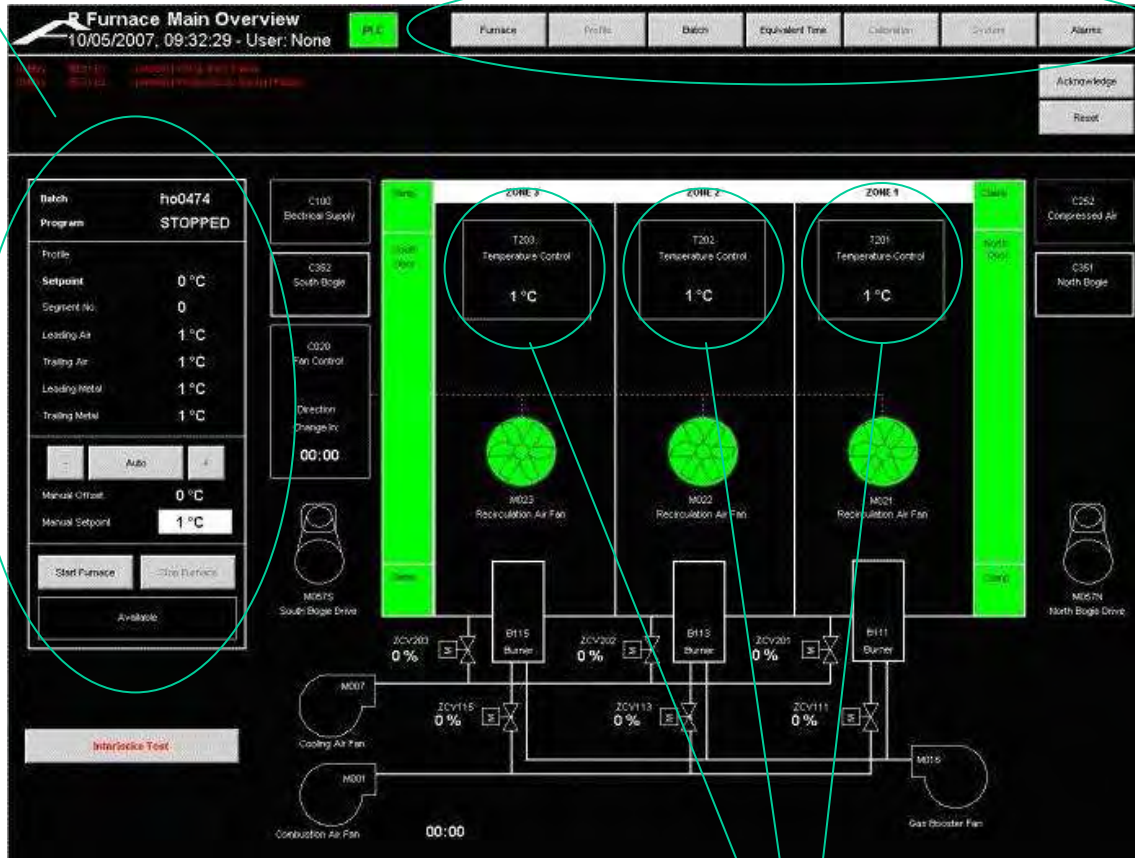
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## Sample Screen : 3 Zones Homogenising Furnace



The screenshot displays the 'Furnace Main Overview' interface. At the top, a navigation bar includes buttons for 'Furnace', 'Profile', 'Batch', 'Equipment Test', 'Calibration', 'Systems', and 'Alarms'. Below this, an 'Alarm Banner' is visible. The main area is divided into three vertical zones (ZONE 1, ZONE 2, ZONE 3), each showing a 'Temperature Control' panel with a setpoint of 1 °C. A 'Profile Details and Status' panel on the left shows 'Batch: ho0474', 'Program: STOPPED', and various setpoints for leading and trailing air and metal. The bottom section features a schematic diagram of the furnace system, including burners (B115, B113, B111), fans (M025, M022, M021), and various valves (ZCV203, ZCV202, ZCV205, ZCV115, ZCV113, ZCV111). Navigation buttons for 'Acknowledge' and 'Reset' are located on the right side.

Navigation Buttons

Alarm Banner

Profile Details and Status

Individual Zone Temperature Control



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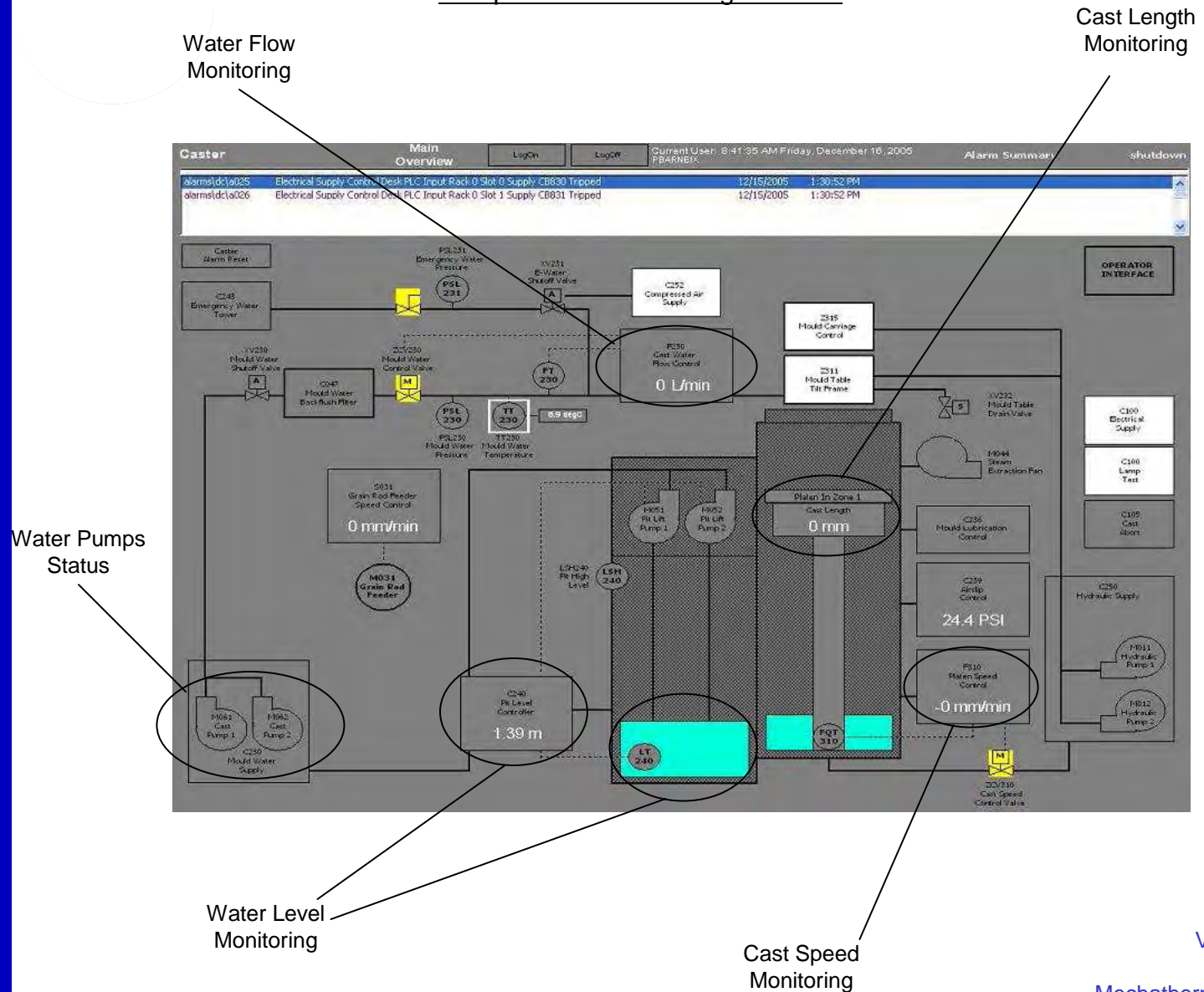
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## Sample Screen : Casting Machine



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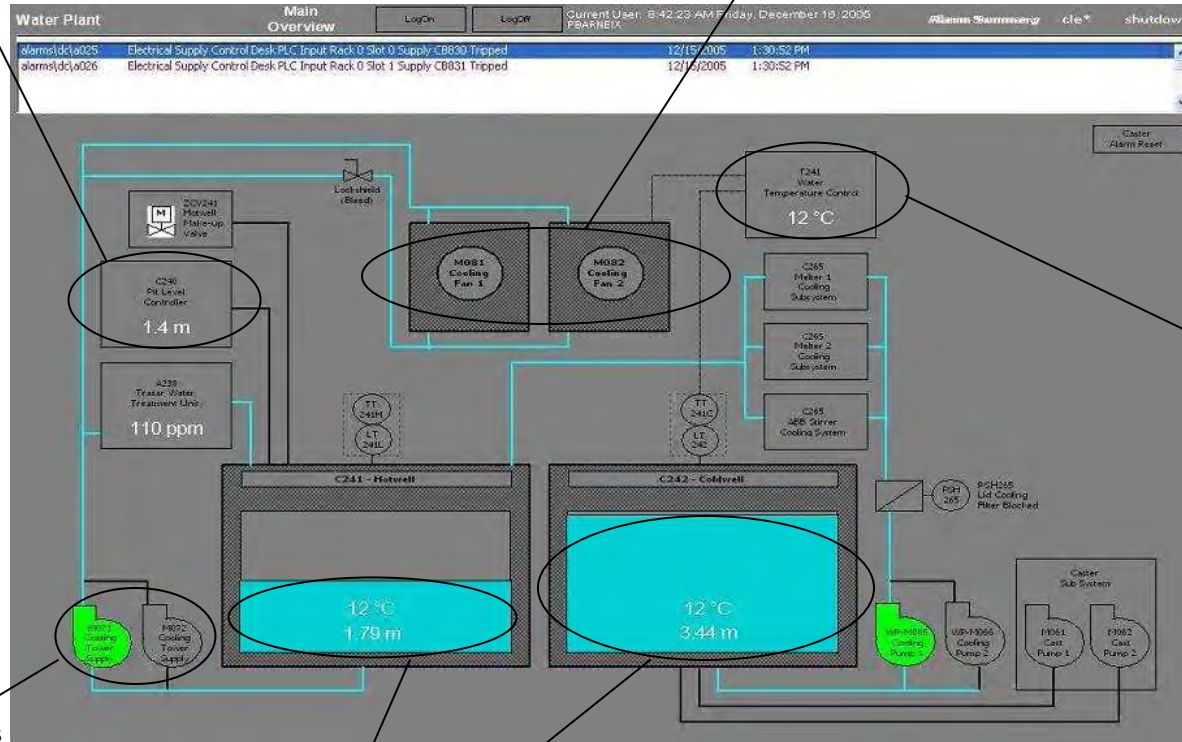
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## Sample Screen : Water Plant

Access to Water Level Control Screen

Cooling Tower Status



Water Pumps Status

Access to Water Temperature Control Screen

Pits Water Level Monitoring



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Stored Recipe Parameters

Sample Screen : Casting Recipe

Recipe Name

**C106: Further Details - Recipe: '8 inch 6061'**

Water		Speed		Lubrication	
Fill Flow (L/Min)	2500 <input type="text" value="2500"/>	Hold Time (s)	16 <input type="text" value="16"/>	Pulses (#)	1 <input type="text" value="1"/>
Start Flow (L/Min)	2500 <input type="text" value="2500"/>	Start Speed (mm/Min)	82 <input type="text" value="82"/>	Total Time (s)	90 <input type="text" value="90"/>
Ramp Start (mm)	80 <input type="text" value="80"/>	Ramp Start (mm)	65 <input type="text" value="65"/>	Push Time (s)	8 <input type="text" value="8"/>
Ramp Stop (mm)	128 <input type="text" value="128"/>	Ramp Stop (mm)	120 <input type="text" value="120"/>	Pause Time (s)	8 <input type="text" value="8"/>
Cast Flow (L/Min)	3200 <input type="text" value="3200"/>	Cast Speed (mm/Min)	104 <input type="text" value="104"/>	Push Pressure (PSI)	400 <input type="text" value="400"/>
End Flow (L/Min)	2800 <input type="text" value="2800"/>	End Speed (mm/Min)	82 <input type="text" value="82"/>	Pause Pressure (PSI)	75 <input type="text" value="75"/>

Airlip		Grain Rod	
Idle Pressure (P.S.I)	40 <input type="text" value="40"/>	Fill Speed (%):	150 <input type="text" value="150"/>
Start Pressure (P.S.I)	100 <input type="text" value="100"/>	Run Speed (mm/Min):	1000 <input type="text" value="1000"/>
Ramp Start (mm)	100 <input type="text" value="100"/>		
Ramp Stop (mm)	200 <input type="text" value="200"/>		
Cast Air (P.S.I)	60 <input type="text" value="60"/>		

User Input Parameters -  
Available in Supervisor  
Mode



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## Sample Screen : Maintenance Menu

### User Friendly Menu

Access to all  
separate items to  
facilitate  
maintenance  
operation and  
troubleshooting



"Exit Screen"  
Button



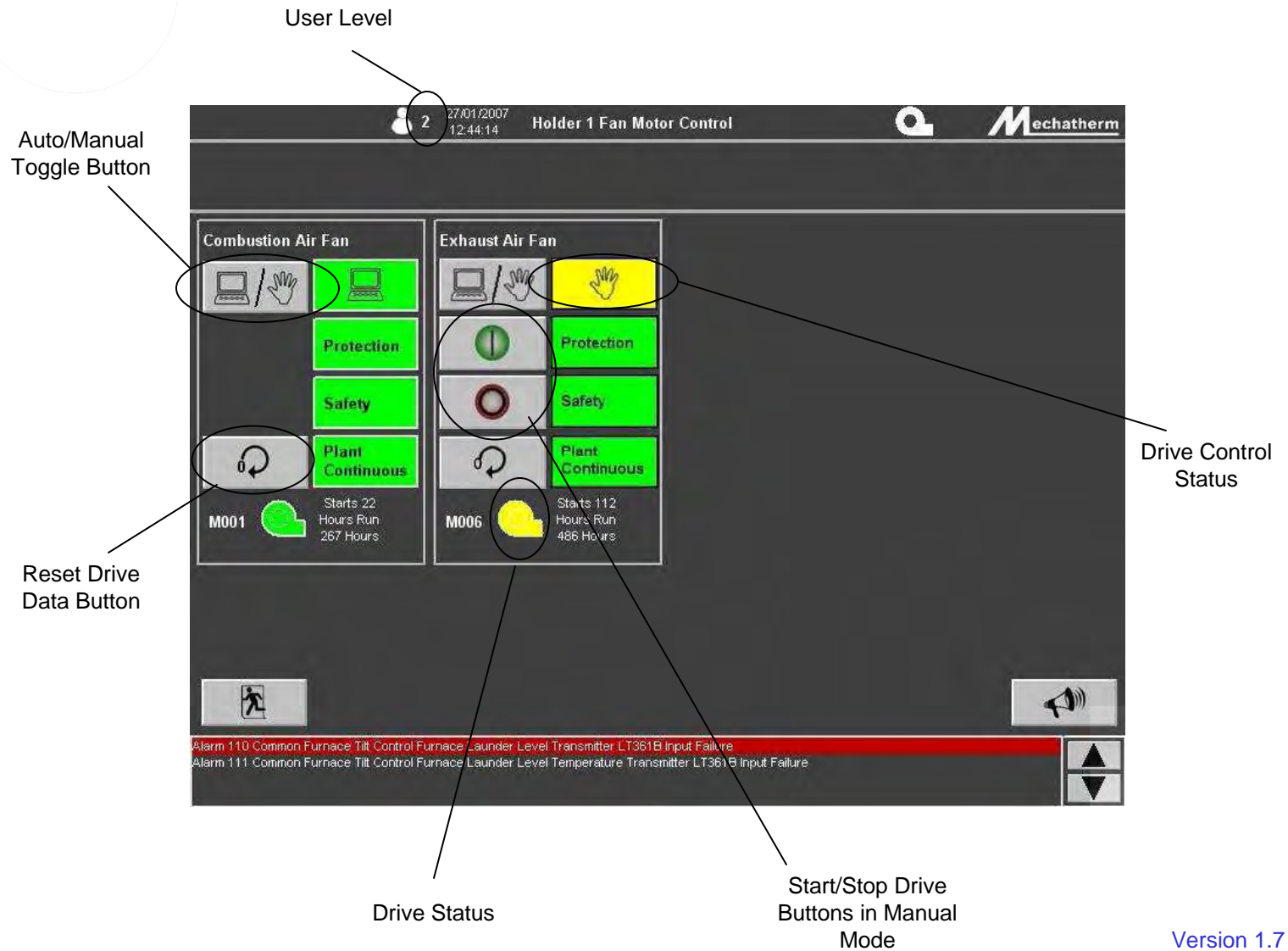
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## Sample Screen : Air Fan Drives



The screenshot shows the 'Holder 1 Fan Motor Control' interface. At the top, it displays 'User Level' (2), the date '27/01/2007', and the time '12:44:14'. The main area is divided into two columns: 'Combustion Air Fan' (M001) and 'Exhaust Air Fan' (M006). Each column contains a 'Protection' button (green), a 'Safety' button (green), and a 'Plant Continuous' button (green). Below these are 'Start/Stop Drive Buttons in Manual Mode' (grey) and 'Drive Status' indicators (green for M001, yellow for M006). A 'Reset Drive Data Button' (grey) is located at the bottom left of each fan's control area. An 'Auto/Manual Toggle Button' is located at the top left of each fan's control area. A 'Drive Control Status' indicator is located at the top right of each fan's control area. At the bottom of the screen, there are two alarm messages: 'Alarm 110 Common Furnace Tilt Control Furnace Launder Level Transmitter LT361B Input Failure' and 'Alarm 111 Common Furnace Tilt Control Furnace Launder Level Temperature Transmitter LT361B Input Failure'.

User Level

Auto/Manual Toggle Button

Reset Drive Data Button

Drive Status

Start/Stop Drive Buttons in Manual Mode

Drive Control Status



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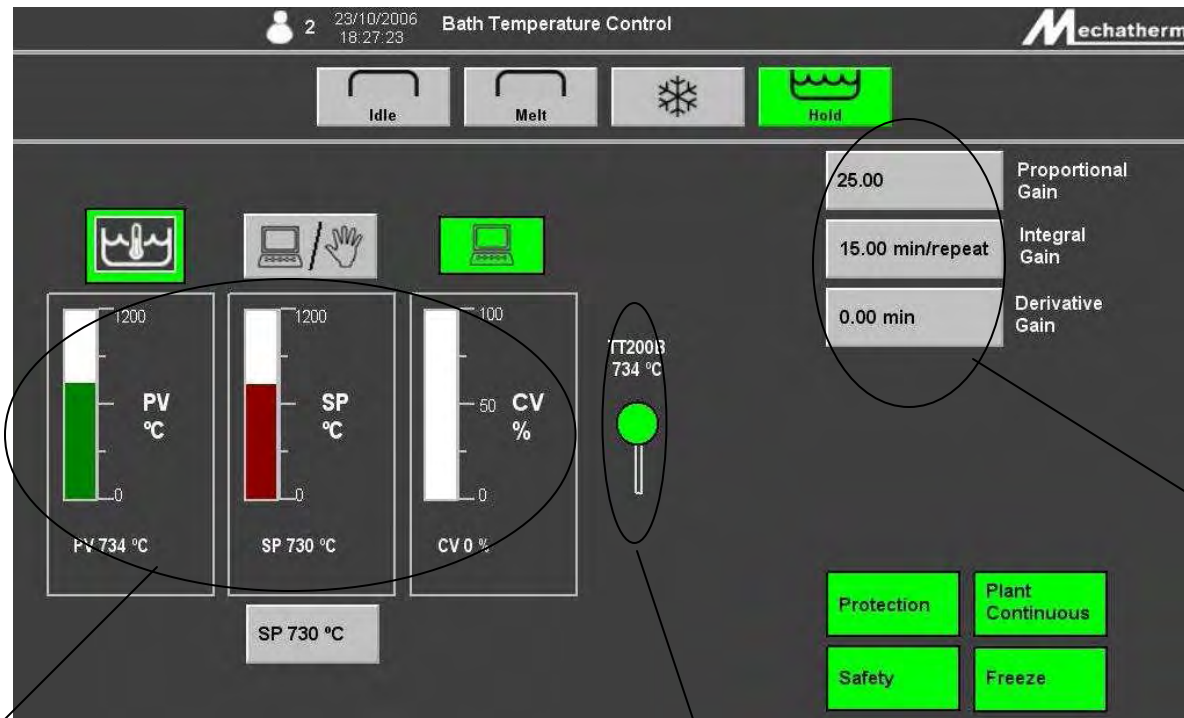
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## Sample Screen : Temperature Control PID Loop



PID Values  
Monitoring

Thermocouple  
Status

PID  
Parameters

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## Sample Screen : PLC Equipment Status

All I/O Modules  
Status  
Monitoring



Main Rack including Controller

Field I/O and Networks Equipment



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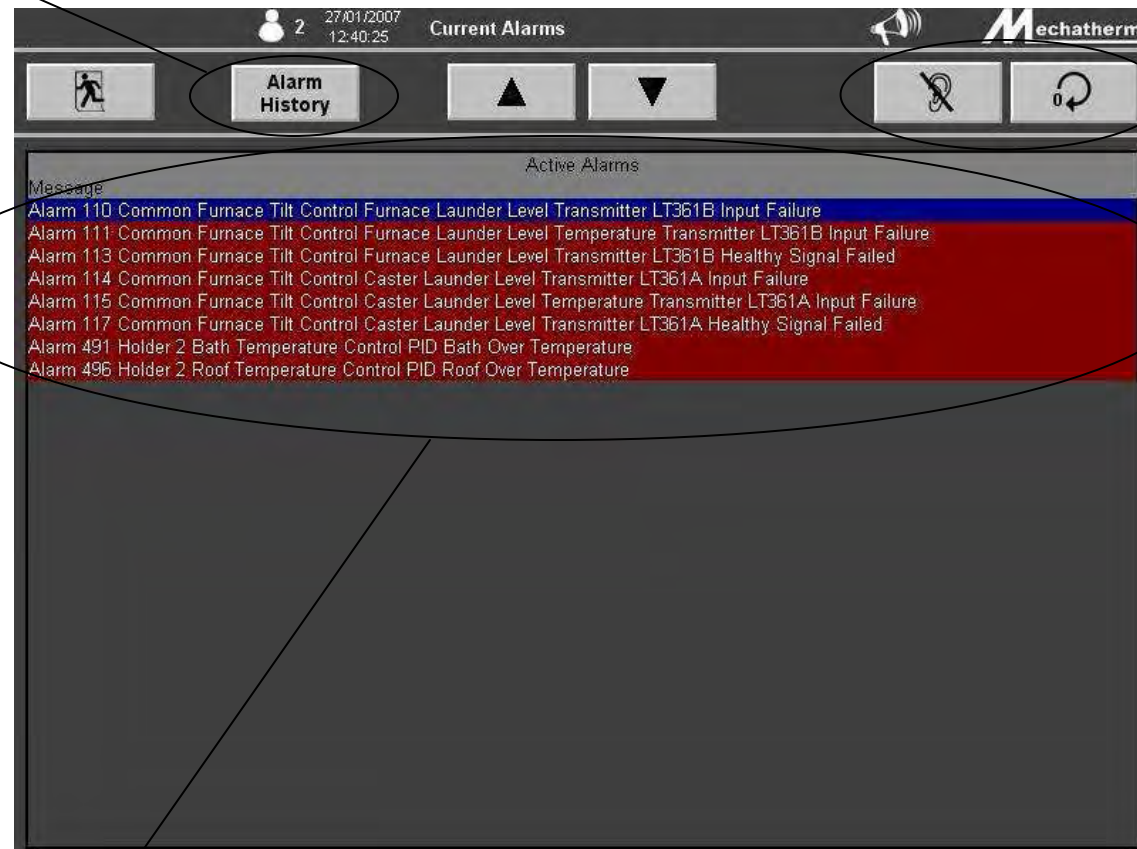
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## Sample Screen : Alarms List

Alarm History  
Screens Access  
Button



Alarm Mute  
and Reset  
Buttons

Active Alarms with Alarm  
Number and Alarm  
Description Detailed for  
Easy Troubleshooting



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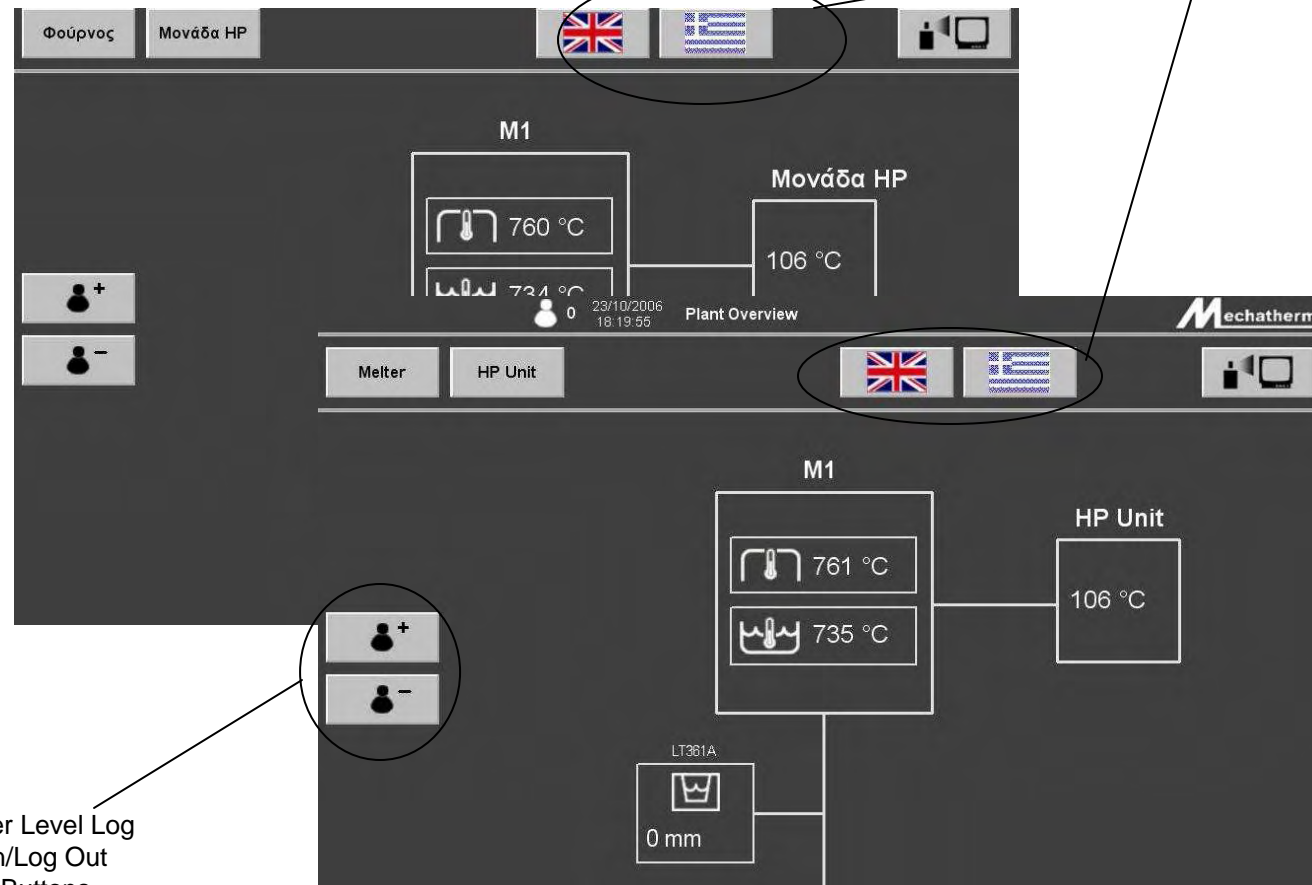
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## Sample Screen : Language Selection

Language Selection Buttons



User Level Log In/Log Out Buttons



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## SCADA Systems - Overview

Full in house design to clients specification by dedicated software team

### Features

Data Acquisition

Report Generation

Error Management

Trending / Data Logging

Diagnostics

Online Monitoring

Parameter Control

Recipe Entry

Plant Status Indication

Operator Access Control



Full On Site Operator training / manuals available



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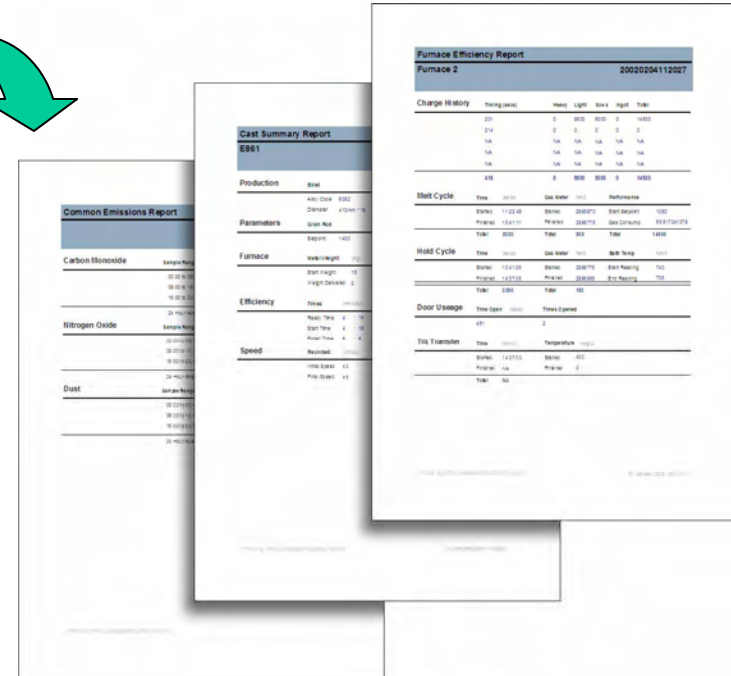
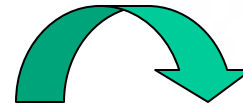
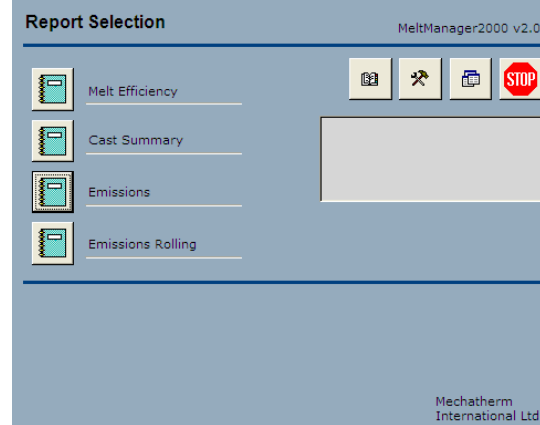
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## Report Generation using Meltmanager©

### Meltmanager©



Bespoke reports generated using Mechatherm's proprietary report compiler **Meltmanager©**, can be quickly and efficiently configured to meet customers requirements.



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## Error Management and Diagnostics using Errormanager©

21 January 2003 User: MIL Error Manager

Alarm Date	Alarm Time	Tagname	Tag Description	Tag Value
21/01/03	14.20	ZS360CL	Door LH Clamp Limit	0

Buttons: Ack Current, Ack Page, Ack All, Execute, Identify, Filter, Sort

**Laymans Description**  
Furnace Left Hand Door Clamp Limit has not made in specified time

Manuals and References	Drawings	Suggestions
Limit Switch 3se3120.pdf Cylinder RA8000.pdf	Mechanical 29001-0023 Electrical 29006-0232	Limit switch fault. Wiring defect. Seal failure on Cylinder. Cylinder Fixing Failure.

\*Click on a manual reference to view it

\*Click on a drawing reference to view it

Exit



Mechatherm's **Errormanager©** helps the maintenance engineer to diagnose and correct plant faults by providing possible reasons for the problem and automatically linking to relevant documents/drawings.



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## Trending / Data Logging



Date	Time	Mill	Tagname	Value	Status	Marker	Internal
21/01/2005	13:54:52	913		0	3243.0000000000	0	
21/01/2005	13:54:52	913		1	1254.0000000000	0	
21/01/2005	13:54:52	913		2	1254.0000000000	0	
21/01/2005	13:54:52	913		3	1254.0000000000	0	
21/01/2005	13:54:52	913		4	1254.0000000000	0	
21/01/2005	13:54:52	913		5	1254.0000000000	0	
21/01/2005	13:54:52	913		6	1254.0000000000	0	
21/01/2005	13:54:52	913		7	1254.0000000000	0	
21/01/2005	13:54:52	913		8	1254.0000000000	0	
21/01/2005	13:54:52	913		9	1254.0000000000	0	
21/01/2005	13:54:52	913		10	1254.0000000000	0	
21/01/2005	13:54:52	913		11	0.0000000000	0	
21/01/2005	13:54:52	913		12	0.0000000000	0	
21/01/2005	13:54:52	913		13	0.0000000000	0	
21/01/2005	13:54:52	913		14	0.0000000000	0	
21/01/2005	13:54:52	913		15	0.0000000000	0	
21/01/2005	13:54:54	851		0	3243.0000000000	0	
21/01/2005	13:54:54	851		1	1254.0000000000	0	
21/01/2005	13:54:54	851		2	1254.0000000000	0	
21/01/2005	13:54:54	851		3	1254.0000000000	0	
21/01/2005	13:54:54	851		4	1254.0000000000	0	
21/01/2005	13:54:54	851		5	100.0000000000	0	
21/01/2005	13:54:54	851		6	1254.0000000000	0	
21/01/2005	13:54:54	851		7	12345.0000000000	0	
21/01/2005	13:54:54	851		8	0.0000000000	0	
21/01/2005	13:54:54	851		9	0.0000000000	0	
21/01/2005	13:54:54	851		10	0.0000000000	0	

By using Trends, process data sampled over a period of time can be displayed in a graphical format. This would provide instant real time data analysis allowing users to respond more efficiently to changing process conditions.

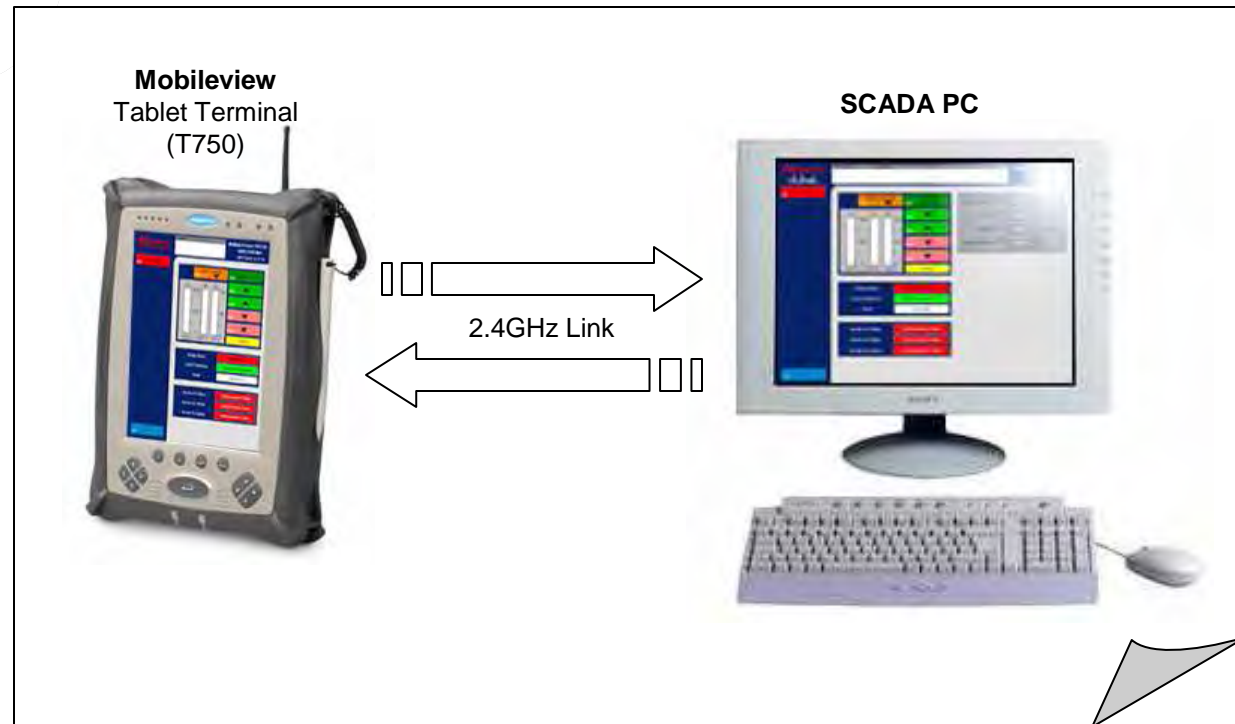


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## Remote Terminal Services



With the aid of the **Mobileview** Tablet Terminal - a wireless, Windows CE based portable HMI from Allen Bradley, commissioning, control and maintenance of plant is simplified.