

e-Maintenance Alert System Feature Sheet

Improve your machines Operational Performance — Increase Productivity
Collect vital status information from **ANY Machine** — Event Alerts in Real-Time

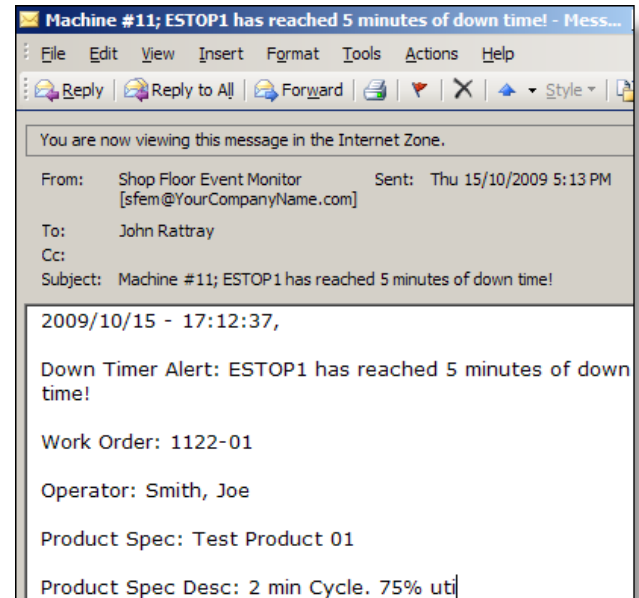
Value Proposition

Machine Productivity tool that enables real-time responsiveness for **increased profitability**.

Production improvements, higher OEE, machine performance to **maximize utilization**, alert to problems

Communicate Shop Floor to Top Floor; real-time alerts for machine event **visibility**

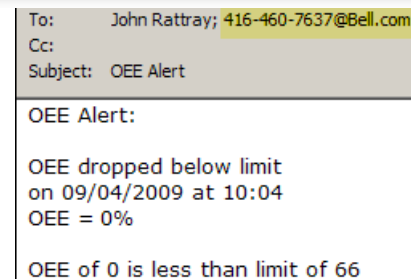
**Email
Alert
Example**



Benefits

- Identify Problems Fast
- Communicate Immediately to the right people
- Maintenance and Service Quick response
- Improve Uptime of your machines
- Automatically initiate Maintenance Work Orders
- Real-Time machine monitoring
- Immediate Operational Status
- Shop Floor Event Tracking
- Visibility of Production
- Reduce Maintenance costs
- Production data collection and reporting
- Downtime and reject cause analysis capable
- Usage-based Predictive Preventive Maintenance
- Increase Reliability — Higher OEE
- Gain competitive edge with lean techniques
- Offer Value Added Service by individual machine
- Now network capacity of a PC at the machine.
- Operator Productivity increases
- "Lights out" maintenance support, like having a competent technician at every machine.

**Text Message
Alert
Example**



Cost effective and tailorable
Versatile for ANY Machine
Reliability & Industrial Strength
Designed for the Manufacturing Environment
A Virtual Supervisor!

Payback to bottom line measured in months

Imagine the endless possibilities created by empowering your organization's ability to collaborate, exchange data, and react to adverse productivity, scheduling, and efficiency impacts created on your shop floor — virtually immediately.

Enable Lean at Every Machine

Memex's new fully configurable machine event state engine allows the shop floor the ability to communicate with the top floor, and everywhere in between, automatically and in Real-Time .

e-Maintenance Alert System Features:

Real-Time Machine Alerts by email, text or phone

- The e-Maintenance Alert System is an event enabling interface that allows you to receive proactive communications from your machines as never before.
- It directly connects to the machine, electrical signals of your choice.
- Ability to track the ON / OFF status
- Immediate email or text notifications on machine state change
- Up to (8) discrete hardwired inputs. (ex. E-stop, Alarm, Machine power on or off, Machine in cycle, Feedhold, Pump on, Pump off, Machine not in cycle, etc)
- Ability to set up to (20) user-defined downtime limits and send out automatic email notifications when the accumulated downtime of any one of them exceeds any of these pre-set user-defined limits. (Ex. Machine #100 has been in an Alarm condition for 20 minutes, send an email notification)
- Send out immediate email notifications on up to (20) common machine operator initiated Help / Assistance requests directly from the machine. Ex. Maintenance, Tooling, Production Management, Engineering, Scheduling, Supervisor, Material Needed, First aid, Donnage Required, Quality Control, Emergency Situation, etc. (Ex. Machine #100 requests Immediate Material, or Machine #100 requests Immediate Engineering assistance).
- Send out immediate email notifications when your machine is down due to operator initiated mode selections such as Maintenance Scheduled, Maintenance Unscheduled, Set-up, or a user-defined custom mode. (ex. Machine #100 has been placed in Maintenance Unscheduled mode by the operator due to an unforeseen breakdown sends an immediate notification to Maintenance and to Scheduling / Capacity Planning)
- Send automatic email notifications to scheduling and/or capacity planning when your machine is in production hold mode, defined as available for production, with no work order currently scheduled.
- Send an immediate email notification when a reject part has been made and has been classified by the operator in any of up to (20) user-defined reject codes. (ex. Mach #100 produced a scrap part due to overbending)
- Ability to set up to (20) user-defined reject count limits and send out automatic email notifications when the accumulated reject count of any one of them exceeds any of these pre-set user-defined limits. (ex. Machine #100 has just produced reject part #10 on it's current work order XXXXX due to overbending)
- email or SMS groups are fully configurable and assignable.
- events can be automatically escalated to higher levels of management based on time duration and/or severity.
- An integral part of satellite remotely structured and offsite managed "lights out" maintenance programs
- Log of events available for historical analysis
- Optional preventative maintenance event alert add on.
- Optional ERP, CMMS automatic maintenance work order generation.

Note. For OEE calculations and some of the above features it will require Memex's Ax9150 based, optional ProductionACE OEE machine monitoring software system be installed.

Event Configuration Example
(note slide bar for more events)

The screenshot shows the 'Email Event Configurations' application. On the left, a 'Machine List' shows 'MachID 11'. The 'Event Editor' table allows configuring events for this machine:

Event	Select	Name	On Every Instance	On # of Instances	#	On Tim...	(Mins)	Select Group 1	Select Group 2	Select Group 3
<input type="checkbox"/>		MAINTUNSCH								
<input checked="" type="checkbox"/>		MAINTSCH	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	100	ASTRIX		
<input type="checkbox"/>		PRODHOLD								
<input type="checkbox"/>		IDLE								

The 'Event View' table shows a list of configured events:

MachID	EventID	Type	Name	Trigger	Value	Group1	Group2	Group3	
11	11	Message	QUALITY Help	OnInst		ASTRIX			Remove
11	12	Message	ENGINEERING Help	OnInst		ASTRIX			Remove
11	13	DwnTmr	ESTOP1	OnInst		ASTRIX			Remove



Business Drivers:

- Alert to maintenance problems in Real-Time
- **Any Machine can have an email or text alerting system**
- Link Machines directly to Service & Maintenance
- OEE—Overall Equipment Effectiveness
- **CEO's are demanding plant/machine level efficiency!**

More Key Features:

- Connects to any machine
- Each machine can initiate messages on the network
- Emails in SMTP through one server
- Text Messaging SMS
- Flexible configuration with logic ladder
- Rules Based
- Easy to manage from one enterprise wide server
- Operator "Help" calls
- Events can be automatically escalated to higher levels of management
- Handles unique machine specific criteria
- Eliminates long serial cables
- 10/100 BaseT Ethernet
- Magnetic mount to metal cabinet or surface
- On-board power supply enables use of up to 24VDC external power to enable Plug N' Play Installation

e-Maintenance - Hardware Features:

- Based on a pre-requisite Memex Ax9150 Universal Machine Interface network card installed on each machine.
- Ethernet connectivity, 10/100 BaseT.
- Connect any machine sensors into the system, such as vibration, amperage meters, etc.
- 8 digital inputs, optically isolated - 2 commons, (DI:5-30VDC, 1A), quick disconnect
- Upgradeable to 24 inputs; analog + digital
- Memory used is non-volatile in the event of a power loss.
- Real Time Clock (Battery Backed)
- Magnetic base for screw less mounting

If your company's bottom line depends on effective and timely communication, collaboration, & reaction to real-time information about your shop floor equipment, then this application is for you.



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