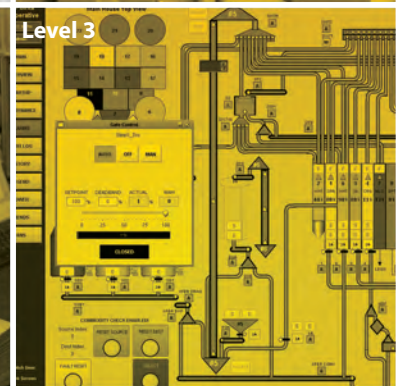
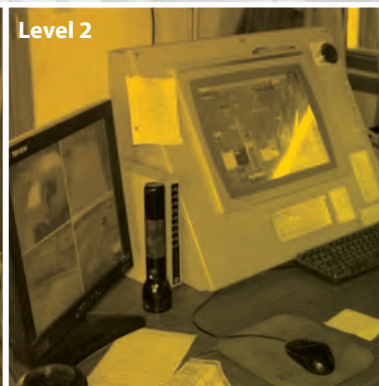


Guide to Levels of Automation



- Hardwired Control – Level 0
- Mimic Panel – Level 1
- Touch Screen – Level 2
- PC-Based – Level 3
- Database & Web – Level 4

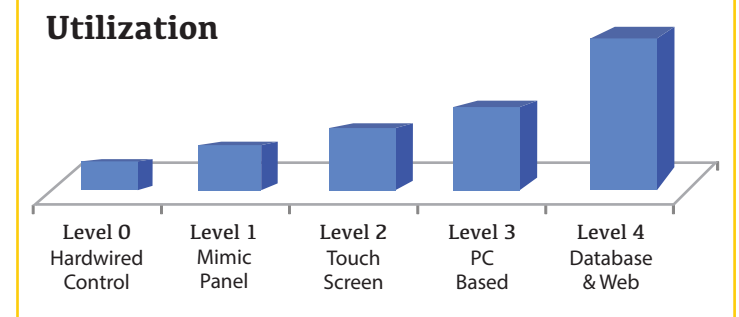


System Features	Automation Levels				
	Level 0	Level 1	Level 2	Level 3	Level 4
	Hardwired Control	Mimic Panel	Touch Screen	PC Based	Database and Web Enabled
User Efficiency					
Interlocking to Other Systems, e.g. Dust	•	•	•	•	•
Automatic Stopping of Equipment	•	•	•	•	•
Centralized Control			•	•	•
Path Selection				•	•
Aeration Fan Automated Control				•	•
Automatic Starting of Equipment					•
Rail Loadout Recipes for Repeated Results					•
Enhanced User Security					•
Status & Indication					
Simplified Audible/Visual Alarms Summary	•	•	•	•	•
Alarm Status			•	•	•
Communication Diagnostics				•	•
Bin Temperature Cable Graphics				•	•
Alarm History for Many Months					•
Audit Log/User Accountability					•
Bin Board/Commodity Tracking					•
System Performance/Utilization					
Conveyor Hour Meters			•	•	•
Commodity Checking				•	•
Realtime Trending of Amps, Temperature, Power Monitoring				•	•
Historical Trends of Amps, Temperatures, Power Monitoring					•
Adjustable Equipment Setpoints (Amps, Temps, Cleanout)				•	•
Incorporation of Hazard Monitoring				•	•
Historical Trends of Hazard Monitoring Data					•
Historical Path Viewing (Minute by Minute)					•
Data Handling					
Print Log or Text Report (Realtime or Historical)				•	•
Reporting (Alarms, Grain Temps, Amps, Hazard Monitoring)					•
Open Access to Database					•
Equipment Maintenance Tracking and Logging					•
Connectivity					
Remote Viewing/Control				•	•
Unlimited Cloud Clients for Viewing and Control					•
View System on Cell Phone					•
Email and Text Messaging				•	•
Connectivity to 3rd Party Software, e.g. Agris, Grain Management System, Bin Levels, AgTrax					•

Utilization

With Levels 0, 1, and 2, an operator must know the time to run conveyors to clear a path before shutting it down. In Levels 3 and 4, path clearing timers and advanced conveyor interlocking is performed by the system, ensuring that a conveyor has run the correct amount of time, resulting in decreased energy costs and increased utilization.

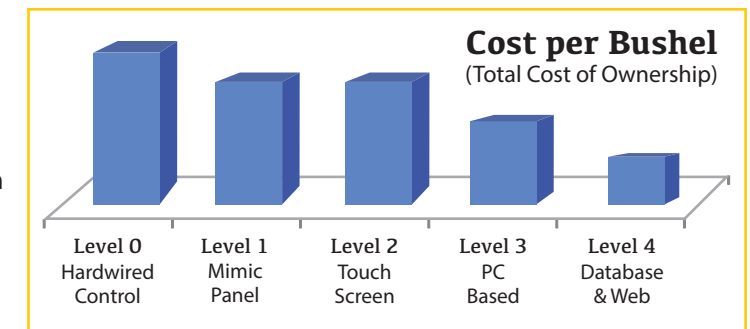
Many grain elevators operating in Levels 0-3 will allow for a larger "buffer" to ensure an operator has time to react to a high level alarm. With Level 4, your system reacts appropriately and immediately so your elevator is operating at a higher level.



Cost per Bushel

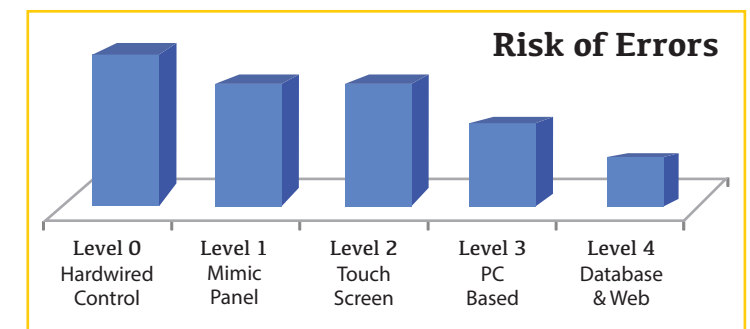
If you are managing more than 2,000,000 bushels of grain, managing more than one facility or plan on expanding, then Level 4 offers the lowest cost per bushel because of the efficiency and better utilization of equipment due to less operator error, overloading of equipment, and mixing of grain in bins.

With a low initial cost, Level 1 or Level 2 is a good choice for smaller elevators where there are no plans to expand or change in the future.



Risk of Errors

With Level 4, your risk of errors decreases because your processes are performed the same way every time. Whether it is costly mistakes like mixing of grain, inaccurate bin inventory levels, or more dangerous mistakes like not being aware of hazardous conditions or faulty equipment, a Level 4 system doesn't just alarm an operator and wait for manual intervention, it will go through the sequence of processes that your best operator would perform.



Level 4 Automation provides historical tracking of almost everything.

Use the reports to: decrease energy costs, help operators become more efficient, track equipment up-time and availability

Levels of Automation

WHICH LEVEL IS RIGHT FOR YOU?

Even though we like to believe Levels 3 and 4 are the best options, we understand Return on Investment is important to you. If your goals include any of the following, then Level 3 and Level 4 automation may be right for you.

Increase the utilization of your equipment

Level 4 allows your system to work like your most experienced operator. Your system is programmed to react and adjust to higher levels of utilization more quickly so you can maximize throughput of grain while being assured that you won't overload it — as if your best operator were sitting at the terminal.

Reduce operating expenses

Reduce downtime due to plugged conveyors with Levels 3 or 4 by automating opening gates, moving spouts, setting diverters, etc. Upgrading existing equipment may get rather expensive, so a good cost study should be performed to see if your facility can benefit.

In addition, your best operators are proficient at setting or clearing paths in the proper order and with the correct timing. With Level 4, even an inexperienced operator can select the destination and source path while the system turns on the equipment in the proper order, reducing the risk of contamination of bins and operator errors.

Decrease the risk of equipment failure and equipment overload

As we all know, preventive maintenance is key to avoiding equipment failure. Level 4 helps you keep all of the information up-to-date and alarms you when specific activities are not properly performed.

Even with the best preventive maintenance plan and activities in place, equipment still fails. With Level 4, you can review the data logs and trends of your sensing devices that are connected to your equipment, allowing you to make replacement decisions before a complete failure occurs.

A minute-by-minute account of path usage, operator actions, events, alarms, amps, equipment faults, equipment status, hazard monitoring, temperature, etc. is logged and tracked. This information can be used to provide insight into a failure or to help troubleshoot a recurring problem.

Interface with other business and system software

Level 4's power is in the open database architecture. This means data can flow into or from other critical systems, such as grain management systems for bin and commodity information, camera screens, level monitoring systems, and hazard monitoring systems, etc.

Hazard monitoring, grain temperature and level monitoring systems are all great applications that you may already have in place. We can pull information from these systems so you may access the data more easily or use it to interact with your automation system.

Kasa Controls & Automation
418 East Avenue B
Salina, KS 67401



800-755-5272
785-825-7181
Fax: **785-825-0590**

www.kasacontrols.com