

Water Treatment Automation

Johannesburg, South Africa

WATER TREATMENT HMI & PLC CONTROL PANEL

The Challenge

A water treatment facility required an upgraded control solution to improve operational visibility and simplify plant management. The existing system provided limited process insight and restricted the ability of operators to quickly identify faults or respond to process changes.

The client required:

- Improved process visibility
- User-friendly operator interface
- Reliable PLC-based control
- Improved fault indication
- Future expansion capability
- Simplified maintenance

SPG Solution

PLC-Based Process Control

- Designed PLC control architecture
- Automated critical process functions
- Improved process consistency
- Structured control philosophy

HMI Development

- Custom operator interface design
- Process status visualisation
- Alarm and fault indication
- Simplified operator navigation

Control Panel Manufacturing

- Custom-built control enclosure
- Industrial-grade components
- Structured cable management
- Future spare capacity incorporated

System Integration

- Integration of field instrumentation
- Equipment communication interfaces
- Commissioning support
- Functional testing

Future Expansion Considerations

- Spare I/O capacity
- Scalable architecture
- Provision for additional equipment

SPG Results

Improved Visibility

- Real-time process monitoring
- Improved operator awareness
- Faster fault identification

Operational Efficiency

- Simplified plant operation
- Reduced manual intervention
- Improved process control

Enhanced Reliability

- Stable automation platform
- Improved system consistency
- Reduced operational risk

Improved Maintainability

- Structured panel layout
- Easier troubleshooting
- Reduced maintenance complexity

Future Ready

- Expansion capability incorporated
- Scalable control platform

Technical Highlights

- PLC-based control system
- HMI operator interface
- Industrial control panel manufacturing
- Instrumentation integration
- Future expansion provision
- Water treatment process automation

Client Impact

The completed solution provided the client with a modern automation platform that improved visibility, enhanced operational reliability, and simplified day-to-day plant management. The system delivers a stable foundation for ongoing plant operation while supporting future growth requirements.

