



INSTALLATION THEATRICAL ENGINEERING



# ADVANCED MOTION CONTROL FOR PERFORMANCE ENVIRONMENTS

**ITE AXIS™**

Precision Movement. Intelligent Monitoring. Complete Control.

# INTRODUCTION

## The Benchmark for Stage Machinery Control

ITE AXIS™ is our flagship motion control platform, developed specifically for theatres, performing arts centres, studios and other professional entertainment environments. The system combines industrial automation technology with an operator interface designed around the practical requirements of venue technicians. From a single handheld touch panel, operators can select, monitor and move individual machines or synchronised groups. Real-time position and load feedback provides clear visibility of each machine, while the safety control architecture continuously supervises movement, status and system conditions.

## One Platform. Multiple Applications.

The platform is designed to control a broad range of equipment, including:

- Variable-speed chain hoists
- Pile wind hoists
- Zero-fleet hoists
- Drum hoists
- Lighting bars and motorised trusses
- Curtain machinery
- Acoustic banners and reflectors
- Orchestra lift equipment
- Custom stage machinery



## A Complete Integrated System

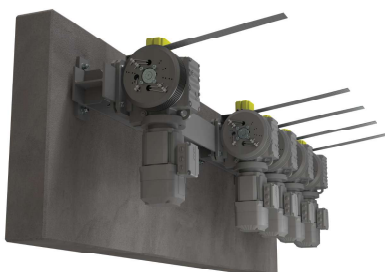
ITE AXIS™ is a fully integrated motion control platform comprising:

- Central control and drive system
- Safety programmable logic controller
- Machine-level position feedback
- Load monitoring
- Remote safety and control input/output
- Fixed venue cabling infrastructure
- Plug-in handheld operator console
- Monitoring and diagnostic screen
- Custom programming and graphical visualization
- System testing, commissioning and operator training
- Scalable by design



## Scalable by design

The platform can be configured for smaller systems or expanded to control a minimum of 42 independently addressable machines. Additional drives, remote input/output modules, machine interfaces and operator connection points can be incorporated without replacing the central control platform.



# OPERATOR SAFETY

## Safety engineered into every movement

Safe operation is fundamental to the ITE AXIS™ platform. The system uses an industrial safety control architecture to supervise operator inputs, emergency-stop circuits, machine status, position feedback and load conditions before and during movement.

## Safety PLC & Drive Architecture

The central control system incorporates an Allen-Bradley Rockwell 5069 Series Safety Programmable Logic Controller and Lenze i550 Drive Units.

The PLC & Drive units provide monitored control of:

- Emergency-stop circuits
- Handheld controls
- Drive signals & movement control
- Machine safety inputs/outputs
- Group movement permissions
- Fault and STO shutdown functions
- System interlocks & load sensing

## SIL3 emergency stop

The handheld controller includes a dedicated SIL3 emergency-stop device positioned for immediate operator access. Activation removes movement permission and initiates a controlled system stop.

## Three-position enabling device

A three-position, dual-channel dead-man switch is incorporated into the handheld controller. Releasing the switch or applying excessive pressure removes the movement command. This provides protection against both accidental release and involuntary operator grip.

## Controlled operator access

A key switch restricts operation to authorized personnel. Password levels, machine lockouts and restricted operating modes are also be incorporated.

## Safety In Movement

Movement requires:

- A valid machine selection
- Available safety circuits
- An active operator enable
- Satisfied machine interlocks
- A continuous operator command



# CONTROL AND SYSTEM ARCHITECTURE

## Powerful control. Intuitive operation.

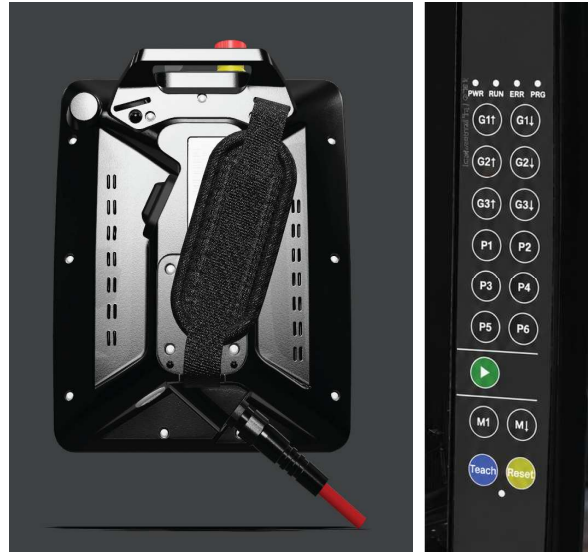
The portable KEBA operator console provides direct access to the system's primary operating functions.

### Core functionality

- Individual machine control
- Teachable machine groups
- Synchronised & recallable group movement
- Fixed or variable-speed operation
- Position programming and recall
- Live position and load display
- Fault and status monitoring

### KEBA handheld console

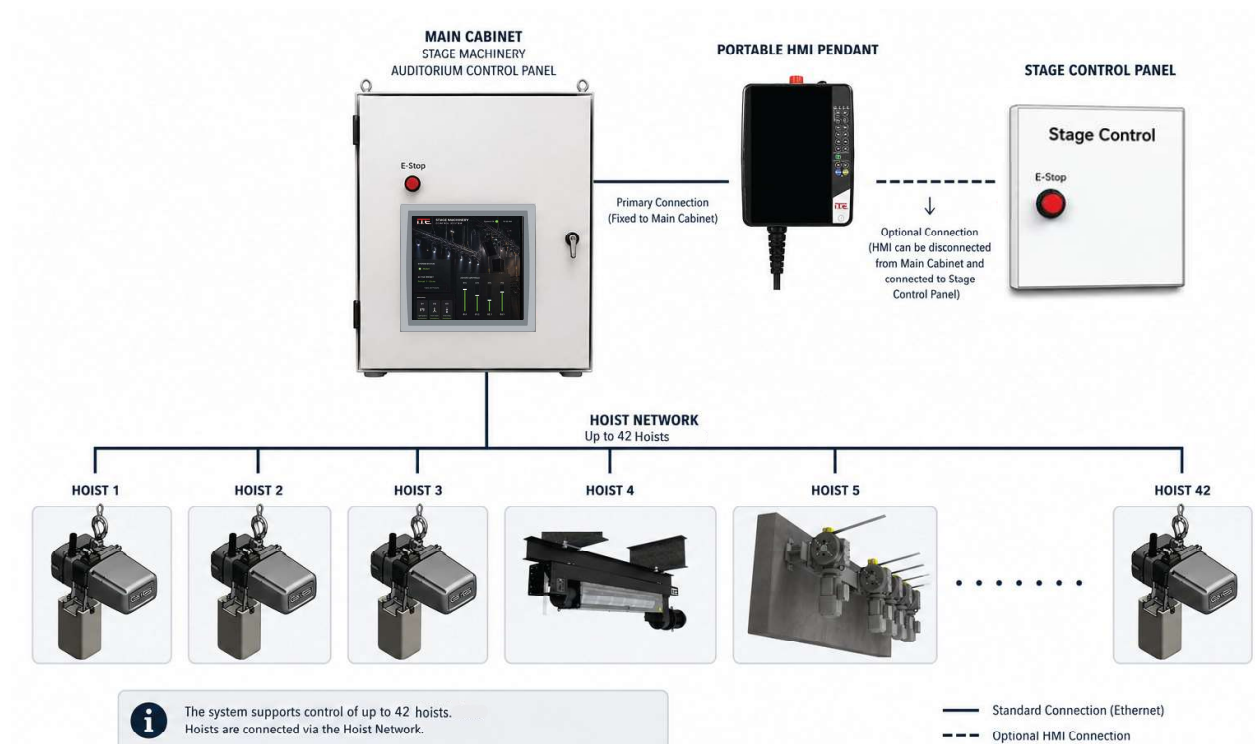
- 7-inch configurable touchscreen
- 18 configurable physical buttons
- Three-position enabling switch
- SIL3 emergency stop
- Enable-power key switch
- 20-metre connection lead
- Stage or control-rack connection



### Cabinet-mounted visualisation

The main control rack includes a Rockwell PanelView Plus 7 screen for system monitoring, fault identification and technical diagnostics.

## System architecture



# MACHINE SUPERVISION

## **Every machine. Continuously monitored.**

ITE AXIS™ supervises the position, load and operating status of every connected machine before and during movement.

## **Absolute position feedback**

Absolute encoders provide continuous machine position information and allow the system to compare machines operating within a synchronized group.

## **Real-time synchronization**

During grouped movement, the system continuously compares each machine's position.

If a machine moves outside the programmed tolerance, ITE AXIS™ will:

- Stop the complete group
- Identify the affected machine
- Display the fault
- Prevent further synchronized movement until resolved

## **Live load monitoring**

Load cells provide real-time information for each machine.

The system can identify:

- Overload or under load
- Uneven load distribution
- Abnormal load variation
- Load transfer between machines

## **Clear fault identification**

Warnings and faults are displayed on both the handheld console and the cabinet-mounted visualization screen.





INSTALLATION THEATRICAL ENGINEERING



## CONTACT US



816 Lorimer Street Port Melbourne VIC 3207



+61 3 9646 0822



[www.ite.net.au](http://www.ite.net.au)



[info@ite.net.au](mailto:info@ite.net.au)