



MINDS

ASPHALT PLANT CONTROLS AND AUTOMATION

**Real Time Data.
Increased Control.
Higher Profits.**



Leading in automation
control systems and
data management

BUILT TO **CONNECT**

BUILT TO CONNECT

MINDS

**ASPHALT PLANT
CONTROLS AND
AUTOMATION**

ASPHALT DRUM PLANT CONTROLS

ASPHALT BATCH PLANT CONTROLS

ASPHALT BLENDING CONTROLS

TANK TERMINAL CONTROLS

EMULSION AND PMA CONTROLS

BURNER CONTROLS

LOADOUT CONTROLS

More Production. Better Accuracy. Higher Profits.

MINDS Asphalt Plant Controls is a complete technology solution for managing and optimizing Rock to Road® operations.



Controls Solutions for Asphalt Plants

Scalable and customizable to suit your specific needs, Astec combines the best of our time-tested software with new developments to create cutting-edge controls systems. Our automation systems are renowned for reliability, configurability, and accuracy. Designed from an operator's perspective, we utilize a user friendly interface to facilitate a quick grasp of the system. State-of-the-art technology enables modern mobile applications remote access, dual workstation access and more. The production-level data forms the foundation that flows up the pipeline to large-scope job/business management IT tools.



Highlights:

- Astec is a market leader within the Rock to Road field
- As an OEM, Astec brings intimate knowledge of equipment to pair with technology creating an integrated system
- Astec is a long-term partner with a reputation for support and training

Asphalt Drum Plant Controls

Automation and control

Designed with the operator's priorities in mind, Asphalt Drum Controls brings asphalt plants to a new level of extremely fine-tuned automation and control through an intuitive user interface and dedicated hardware.



Highlights

State-of-the-art

Dependable, accurate, reliable, and customizable. It is ideal for a simple bitumen and aggregates blending-only application, or comprehensive total plant control.

Clearly see your operations

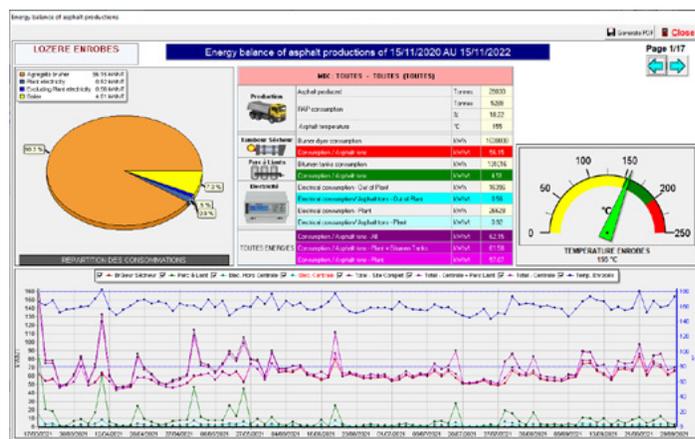
The human interface has been thoroughly designed in collaboration with actual operators. The layout of information allows for a quick understanding of the overall workings.

Always in control

The operator remains in control and the process can be stopped and resumed anytime while direct control of motors is always possible.

Features

- ✓ Software adaptability is paired with a modular hardware design made of one or many of the same electronic I/Os boards
- ✓ Comes with an industrial grade PC, security and redundancy, remote access and support
- ✓ System is easily customized through multi-level user accessible parameters
- ✓ Can be linked to Ticket Manager and Ticket Manager Enterprise





Asphalt Batch Plant Controls

Automation and control

Designed with batch plant operators in mind, Asphalt Batch Plant Controls allows exceptional automation and control of asphalt plants through powerful and easy-to-use visual software combined with dedicated hardware.



Highlights

Multiple console options

With the number of screens ranging from one to four and a 'zero console' option, the system fits all types of asphalt plants and budgets.

Clearly see your operations

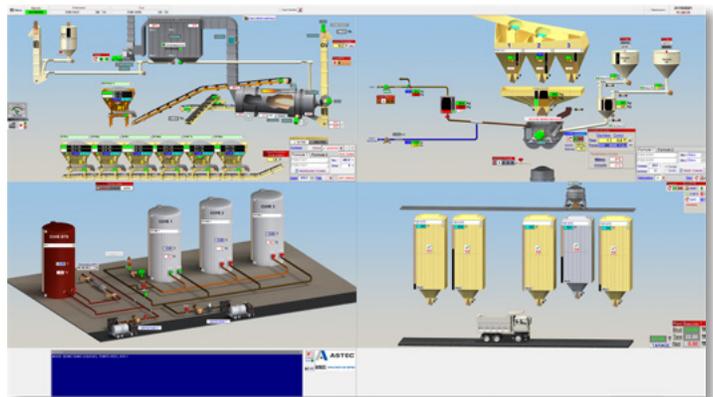
The exact 3D representation of the actual asphalt plant reduces the learning curve needed to use the system.

Ultimate real-time control

Timing is of the essence for batching processes. Asphalt Batch Controls provides tools to understand and customize how actions are scheduled.

Features

- ✓ Multiple console options to fit all types of plants and budgets
- ✓ Capacity to control all asphalt plant operations or just the tower
- ✓ Industrial grade computer with security and redundancy features ensures reliable operation in all situations
- ✓ Can be linked to Ticket Manager and Ticket Manager Enterprise



Asphalt Blending Controls

Automation and control

Dependable, accurate, reliable, and customizable. Asphalt Blending Controls are ideal for a simple bitumen and aggregates blending-only application.



Highlights

Monitor your operation

Asphalt Blending Controls monitors the proportional control and blending of aggregate, asphalt, recycle materials (including shingles) and additives.

Fast, reliable control

Leverages Minds XIO for fast, reliable control. Our XIO uniquely allows us to provide standard IO across any product type.

Seamless integration

Integrates seamlessly to full plant controls, as well as Loadout, Ticketing Manager, and the Minds Data Suite.

Features

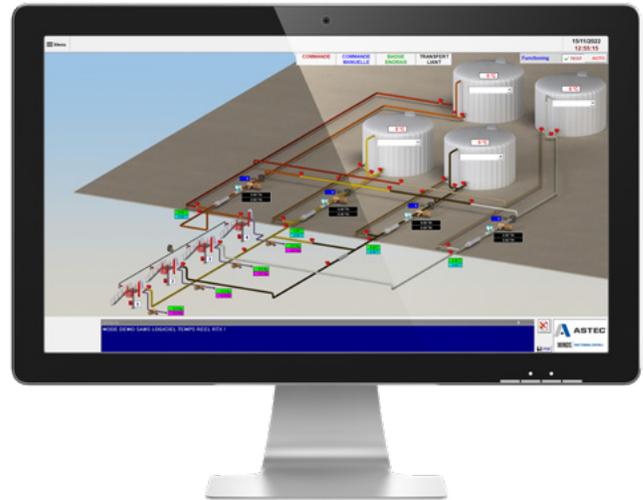
- ✔ Software adaptability is paired with a modular hardware design made of one or many of the same electronic I/Os boards
- ✔ Comes with an industrial grade PC, security and redundancy, remote access and support
- ✔ System is easily customized through multi-level user accessible parameters
- ✔ Can be linked to Ticket Manager and Ticket Manager Enterprise



Tank Terminal Controls

Automation and control

Based on the same platform as our successful asphalt plant automation systems the Tank Terminal Controls monitor and control temperatures of liquids in storage tanks and levels of liquids in the tanks. Remote displays can be included.



Highlights

Highly efficient, computerized plant controls

Advanced liquid asphalt cement and liquid terminal control system.

Clearly see your operations

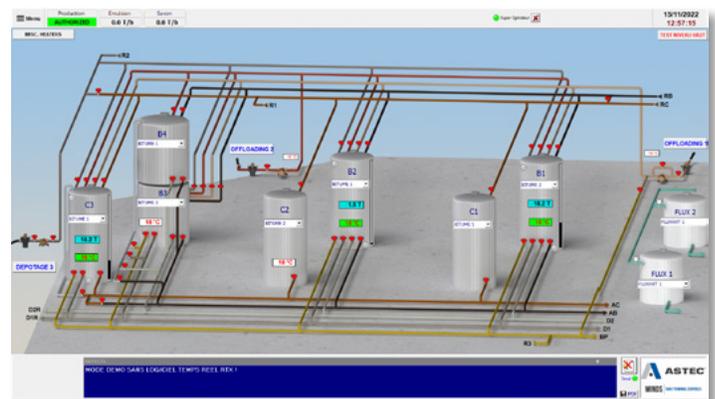
The system is scalable and fully expandable to adapt to existing production facilities as well as high-end modern fully integrated production plants.

Worldwide proven performance

With happy customers around the globe, the proven Tank Terminal Controls adds a level of automation that can be adapted to any budget and plant complexity.

Features

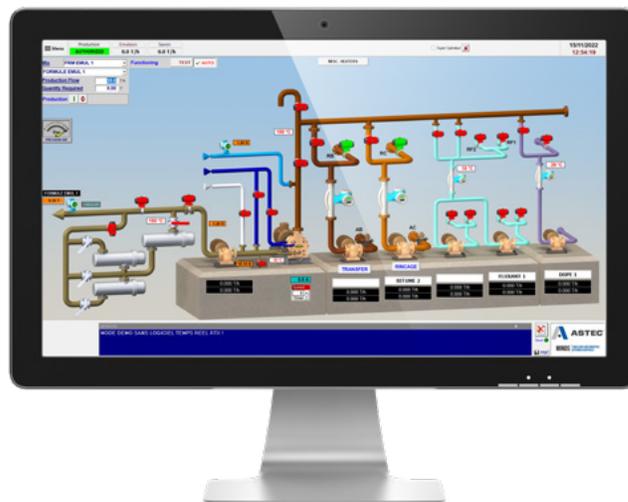
- ✓ Controls asphalt unloading pumps to prevent overfills.
- ✓ Shares the graphic signature of all the MINDS Suite
- ✓ Full graphical representation of the plant allows easy understanding of complex pipe layouts.
- ✓ Proven XIO dedicated hardware powers the system behind the scenes.



Emulsion and PMA Controls

Automation and control

Based on the same platform as our successful asphalt plant automation systems the Emulsion and PMA Controls handle all phases of emulsion production and storage with many levels of safety checks and advanced features.



Highlights

Highly efficient, computerized plant controls

Advanced emulsion plant control system and modified bitumen control system.

Clearly see your operations

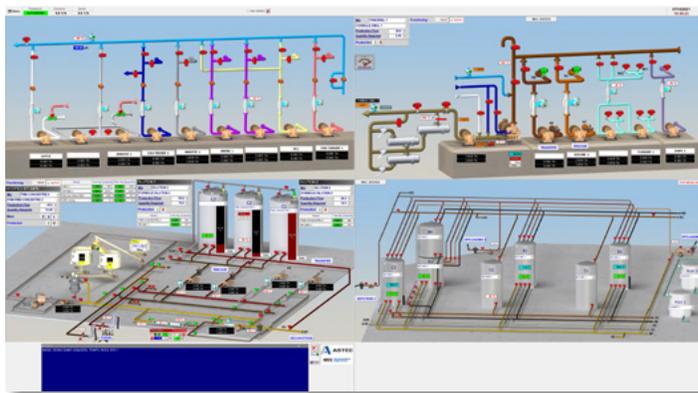
The system is scalable and fully expandable to adapt to existing production facilities as well as high-end modern fully integrated production plants.

Worldwide proven performance

With happy customers around the globe, the proven Emulsion and PMA Controls system adds a level of automation that can be adapted to any budget and plant complexity.

Features

- ✓ Shares the graphic signature of all the MINDS Suite
- ✓ Full graphical representation of the plant allows easy understanding of complex pipe layouts
- ✓ Proven XIO dedicated hardware powers the system behind the scenes





Burner Controls

Multi-actuator, precision burner control

Take the guesswork out of burner operations while improving the efficiency and safety of your burners. Burner Control is an affordable and effective solution that can be finely tuned and profiled with separate air/fuel ratios.

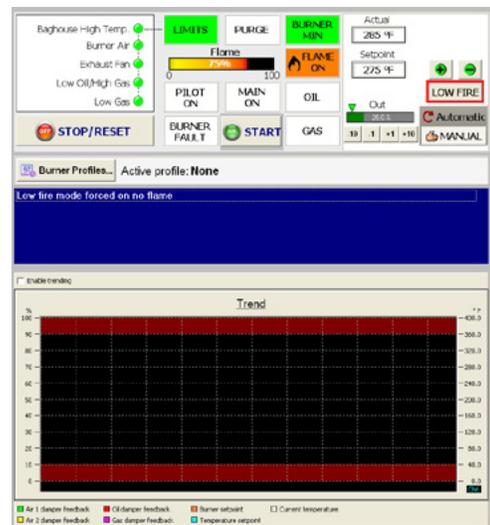


Highlights

- ✔ Versatile, advanced system offering four analog or digital channels for an easy retrofit of any burner.
- ✔ Control can be finely tuned and profiled with separate air/fuel ratio control points.
- ✔ Can use direct coupled actuators or any standard drive motor.
- ✔ Flame safety is achieved with Honeywell flame relays; dependable and cost effective.
- ✔ Redundant high stack temperature safeties, both hard wired and software driven.
- ✔ The burner safety chain is wired for first out status and easy trouble shooting.
- ✔ UL listed and NFPA compliant.

Features

- ✔ Multi-actuator, multi-fuel, profiled control points
- ✔ Integrated in plant control software or stand-alone version
- ✔ Easy intuitive UI interface
- ✔ UL Listed and NFPA compliant
- ✔ Low cost, easy retrofit of any burner



LoadOut Controls

Truck loading management software

Use stand-alone for asphalt LoadOut management or integrate with plant control solutions like Asphalt Drum Controls and Asphalt Batch Controls for a total production system.

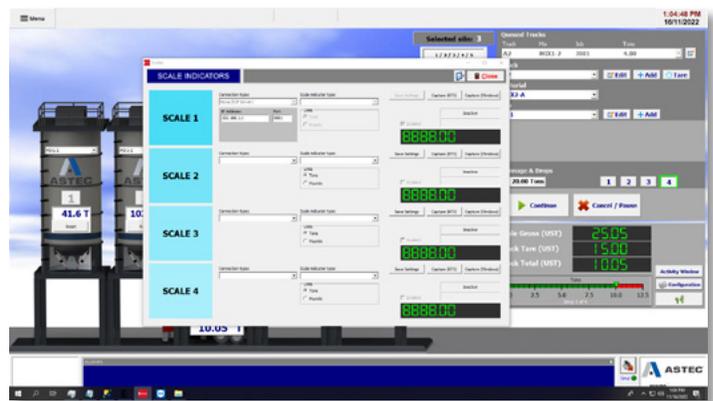


Highlights

- ✔ Operator can manage loadout of material into trucks ready for delivery or load-in of material to transfer.
- ✔ Stand-alone or fully integrated with production computer.
- ✔ Highly visual interface makes it easy to see what is happening in real-time.
- ✔ Interface shows truck ID, material type, customer, job number, tonnage and number of drops.
- ✔ Software animates loading of asphalt into trucks as scale's gross weight increases.
- ✔ NTEP Certified.

Compatible Scales

- ✔ Mettler Toledo 8530
- ✔ Rice Lake 120
- ✔ Rice Lake IQ Plus 710
- ✔ Weigh-Tronix WI-127
- ✔ Aurora Scale Mfg. Ltd.
- ✔ Others on request

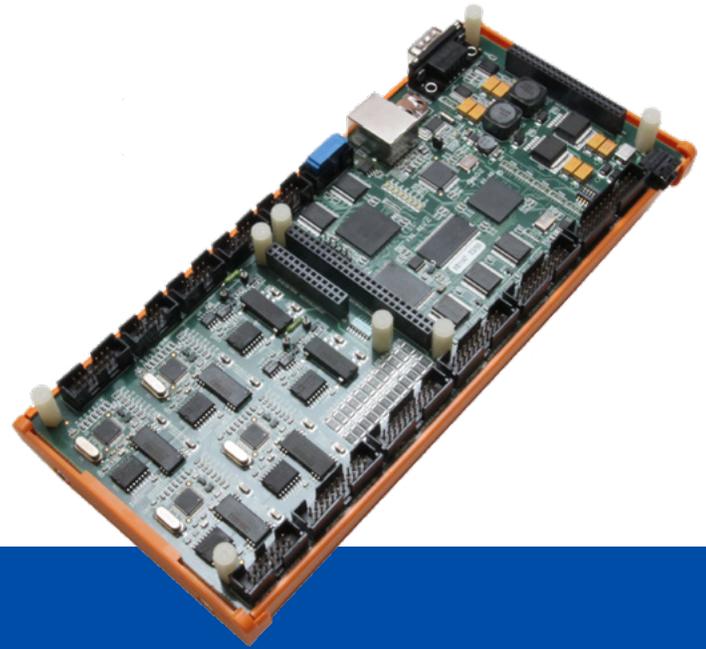




XIO Module

Input / Output Controller for Plant Automation and Control

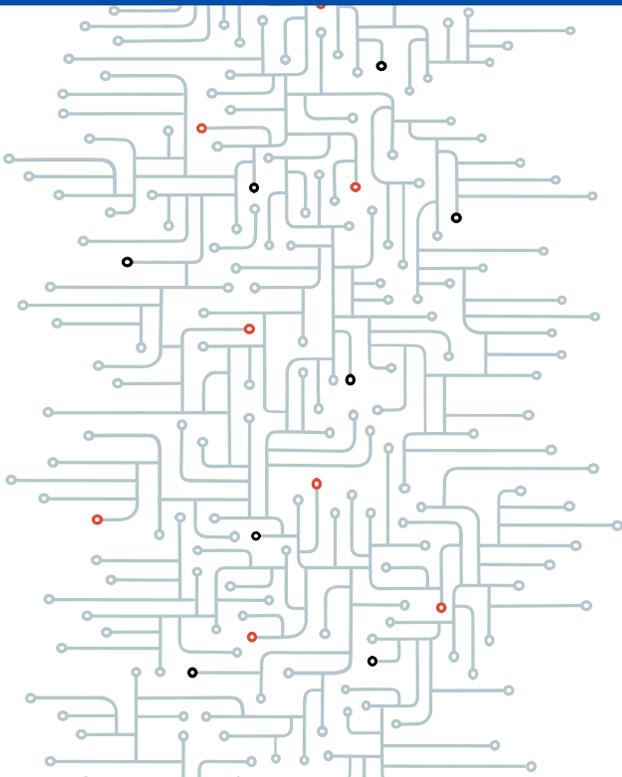
Build to last: deployed at hundreds of plants all over the world. XIO industrial modules are designed and manufactured by Astec to handle all digital and analog inputs and outputs. Backward compatible and easily replaceable and expandable, our XIO uniquely allows us to provide standard IO across any product type.



Unique architecture

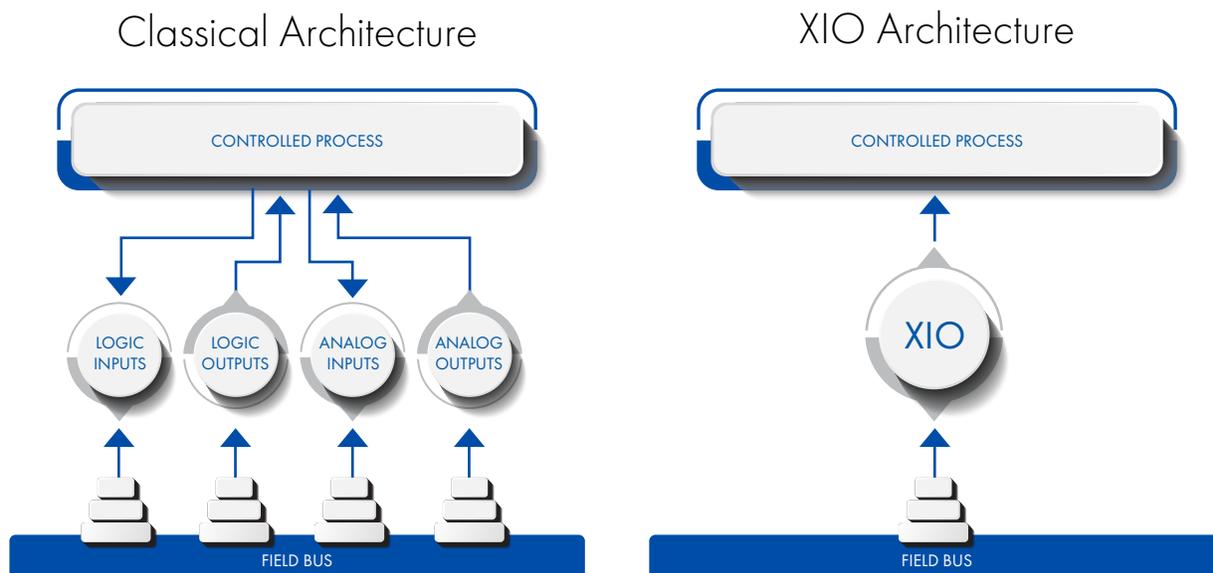
The XIO module is a multiple input/output controller used in our automation and control systems. This module is characterized by its unique architecture, compactness and robustness and uses a TCP/IP communication protocol over an Ethernet link. The XIO module is equipped with logic input and outputs, analog and frequency input-outputs, each type in a calculated proportion that just one type

of module is needed to control an asphalt plant. Thus, a small application requires one or two XIOs. To increase capacity additional XIOs, all identical to the first one, can be added to increase the number of input-outputs. A very large plant with comprehensive automation can require six XIOs or more.



The advantages of this architecture are numerous:

- ✓ Only one module is needed as a spare part
- ✓ Guaranteed flexibility and extensibility
- ✓ Simplified systematic wiring
- ✓ Support and maintenance facilitated
- ✓ Inherent generation of spare inputs and outputs



Comparison with traditional architecture

In a traditional installation using a field network, electronic modules ensuring the input-outputs are specialized according to the type of signals: logic inputs, logic outputs, analog inputs, analog outputs, etc., this architecture multiplies the number and types of electronic modules (refer to Classical Architecture). With the XIO, only one standard device is necessary, having all the types of input-

outputs onboard (refer to XIO Architecture). When the number of input-outputs is very important, the cost of the two solutions is similar, but on small and average installations, in an example of road construction plants, the architecture of XIO reduces costs and becomes more profitable. In all cases spare parts management is much easier with the XIO architecture.

XIO Technical Specifications

Two (2) isolated analog outputs (six (6) with optional extension)
Four (4) isolated analog input (12 with option extension)
32 scalable up to 56 logic outputs
40 scalable up to 64 logic inputs (or analog inputs, individually configurable)
Six (6) quadrature/12 single optical encoder inputs
2500 Vrms isolation (1 min)
Ethernet communication
DIN Rail mounting
Operating temperature: 0 to 50 °C (32 to 122°F)
Humidity: 5 to 95% non condensing
Storage temperature: -40 to 85°C (-40 to 185°F)
Dimensions mm (inches): 240 (9.4) x 105 (4.1) x 41 (1.6)

MINDS

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