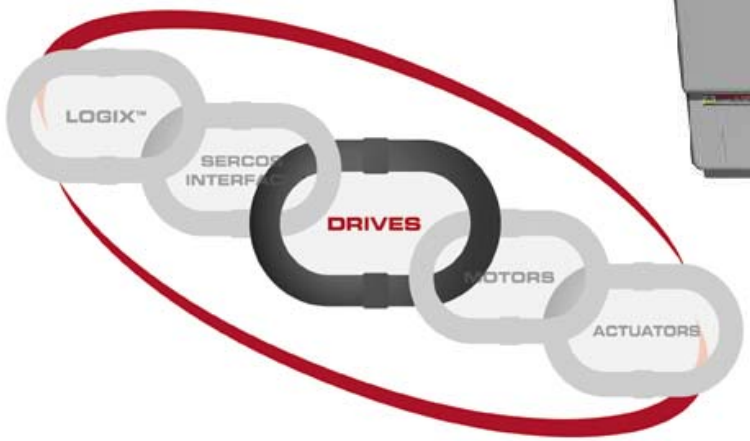
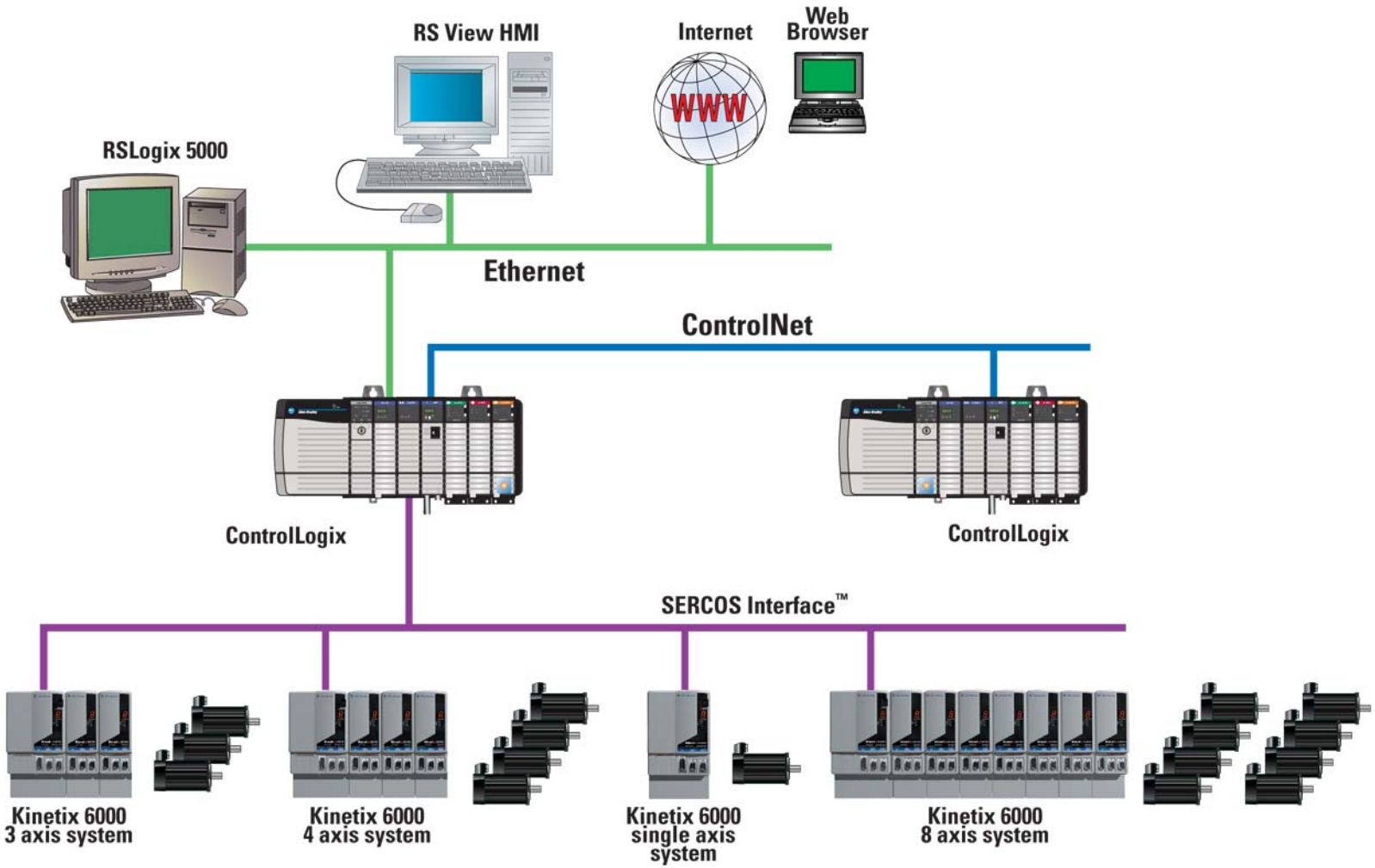


Kinetix 6000

Digital Servo Drive

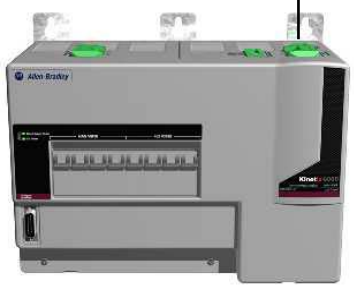
Allen-Bradley
RELIANCE ELECTRIC
DODGE
ROCKWELL SOFTWARE
Rockwell Automation

Architecture



Why the Kinetix 6000 using SERCOS interface?

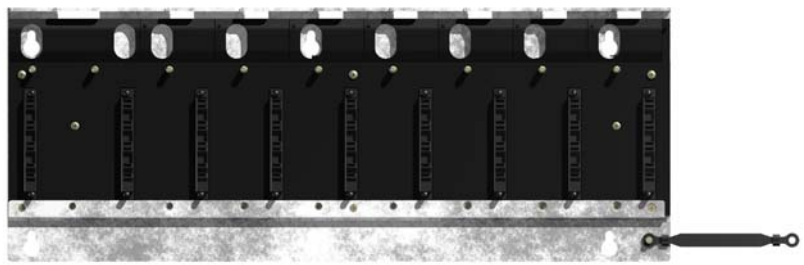
- Simplicity
  - SERCOS interface eliminates up to 18 discrete wires per axis
  - Line interface module replaces nine components (such as 24 VDC power supply for I/O), eliminating up to 72 wire terminations
  - Power rail makes layout and installation fast and easy



Line Interface Module

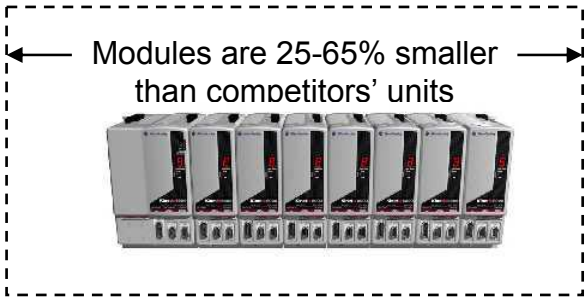
Why the Kinetix 6000 using SERCOS interface?

- Simplicity
  - Ergonomically optimized Power Rail makes layout and installation fast and easy
    - Installs with four or six bolts
    - Provides bonding and grounding panel
    - Modules install with single bolt
    - Common DC bus provides power sharing and reduces input power wiring requirements
    - Replaces components
    - Available in various sizes to accommodate 1, 2, 3, 4, 5, 6, 7 and 8 axis
    - Same power rail for 230V AC and 460V AC systems
    - Significantly reduces installation time and related costs



Why the Kinetix 6000 using SERCOS interface?

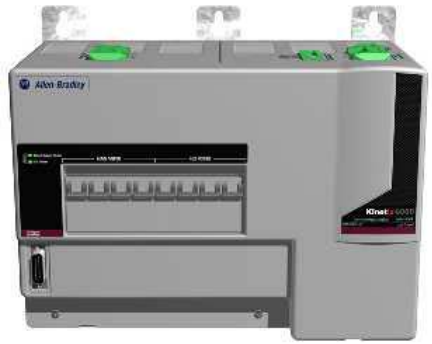
- Compact design
  - up to 65% smaller than competitors' units
  - integral features save additional panel space
    - integrated 24V DC power supplied for sensors saves cost and panel space
    - uses 120/230V AC for logic control power
    - product connector arrangement allows more efficient panel layout



Optional Accessory Equipment

Line Interface Module (LIM)

- Can be used as the incoming power source for an entire control panel, providing additional convenience for the customer
- One compact, cost-effective module replaces:
  - circuit breakers, CE filters, safety contactor, 24V motor brake power, 24V DC for input/output power, 220V AC logic control power production, all the connection wiring needed
  - different LIM options provide greater application flexibility



Line Interface Module

Resistive Brake Module (RBM)

- Provides electrical separation between a drive and a motor
- Can dynamically brake a motor if the drive cannot stop it
- Simplifies the design of a safety circuit for a machine
- Compatible with MP-Series Low Inertia, 1326AB, F-Series, N-Series and Y-Series Motors
- Usable with most drives, including standard drives and competitive units.

Resistive Brake Module

Why the Kinetix 6000 using SERCOS interface?

- Exceptional performance
  - greater precision and throughput
  - velocity bandwidth greater than 400 Hz and current loop bandwidth greater than 1300 Hz doubles the performance of similar products
  - Current Loop Bandwidth > 1350 Hz (50% improvement over other drives)
  - Uses fast SERCOS, 1-16 axis capability (4 axes 500 ms)
  - Multiple motor support
    - Permanent magnet
    - AC synchronous
  - High resolution feedback
    - 2 Million Count/Revolution

Why the Kinetix 6000 using SERCOS interface?

- Significant cost savings
  - eliminates wiring
  - space savings reduces cabinet size requirements
  - smart motor technology simplifies startup and reduces downtime
  - shared power converter in Integrated Axis Module eliminates the need for individual power converters for each axis

Kinetix 6000

- **Power Range**
  - 6 new Integrated Axis Modules (rectifier and amplifier)
  - 6 new Axis Modules (amplifier only)
  - 230V Power Range = .5 kW to 11 kW
  - 460V Power Range = .5 kW to 45 kW

Kinetix 6000 Power Range

The Kinetix 6000 is available in both 200-230V AC (three phase) and 380-480V AC ranges for global markets

- 200/230V
  - IAM Converter
    - 2094-AC05-M01
      - 3 kW
    - 2094-AC09-M02
      - 6 kW
    - 2094-AC05-MP5
      - 3 KW
    - 2094-AC16-M03
      - 11 kW
    - 2094-AC32-M05
      - 23 KW
  - IAM and AM Inverter
    - 2094-AM01
      - 9A / 17A (1.9 kW)
    - 2094-AM02
      - 15A / 30A (3.4 kW)
    - 2094-AC05-AMP5
      - 5 A
    - 2094-AC16-AM03
      - 24 A
    - 2094-AC32-AM05
      - 49A
- 380/480V
  - IAM Converter
    - 2094-BC01-M01
      - 6 kW
    - 2094-BC02-M02
      - 15 kW
    - 2094-BC01-MP5
      - 6 KW
    - 2094-BC04-M03
      - 28 KW
    - 2094-BC07-M05
      - 45 KW
  - IAM and AM Inverter
    - 2094-BM01
      - 9A / 13A (3.9 kW)
    - 2094-BM02
      - 15A / 22A (6.6 kW)
    - 2094-BC01-BMP5
      - 4 A
    - 2094-BC04-BM03
      - 28A
    - 2094-BC07-BM05
      - 48A
- 110/230V auxiliary power input

Kinetix 6000 with SERCOS

Fiber optic receive/transmit

Data rate selector switch
4 and 8 MB

Input Connections

Motor connection

Node address switches

Integrated
Axis Module

Drive, comm, and
bus status LEDs

I/O connector

Auxiliary feedback
connector (used for
Feedback Only Axis)

Motor feedback connector

Kinetix 6000 with SERCOS

- Seamlessly interfaces with the ControlLogix 1756-M16SE, 1756-M08SE, 1756-L60M03SE or 1756-M03SE and SoftLogix 1784-PM16SE
- Commands received via a fiber-optic SERCOS cable
  - Reducing effects of electrical noise
  - Simplifies wiring
- Commissioning performed from RSLogix
  - Single point set-up for drive and control
- Advanced drive diagnostic capabilities available at controller via SERCOS interface.
- Compliant with SERCOS Class A position and velocity mode operation
- Compatible with absolute and high resolution feedback

Kinetix 6000 Motor Compatibility

- **MP-Series Low Inertia**
  - industry leading technology
  - 1.6-13.8 Nm continuous torque initial release
  - up to 5000 rpm
  - high res./absolute feedback
- **MP-Series Food Grade**
  - Compact, low inertia
  - 1.6-19.4 Nm continuous torque
  - up to 5000 rpm
  - high res./absolute feedback
- **MP-Series Integrated Gear**
  - high torque, direct drive
  - 14 - 134 Nm continuous torque
  - up to 300 rpm
  - high res./absolute feedback

- **Y-Series**
  - low inertia
  - .17-2.5 Nm continuous torque
  - up to 4500 rpm
- **N-Series**
  - NEMA flange frame
  - .20-6.0 Nm continuous torque
  - up to 7000 rpm
- **1326AB**
  - 2.7-18.0 Nm continuous torque initial release
  - up to 7250 rpm
  - Absolute feedback option

Feedback Capabilities

- Automatic setup of smart encoders
  - Motor parameters stored in encoder - eliminates motor selection
- Single- and multi-turn absolute feedback
  - Maintain axis position without power
- Sine cosine encoders for high resolution feedback
  - High resolution positioning (Over 1,000,000 counts/revolution)
  - Provides smoother velocity control and more accurate positioning
- Traditional TTL encoders
- Resolver

The Kinetix Integrated Motion *Advantage*

Introducing the Kinetix 6000 Multi-Axis Servo Drive

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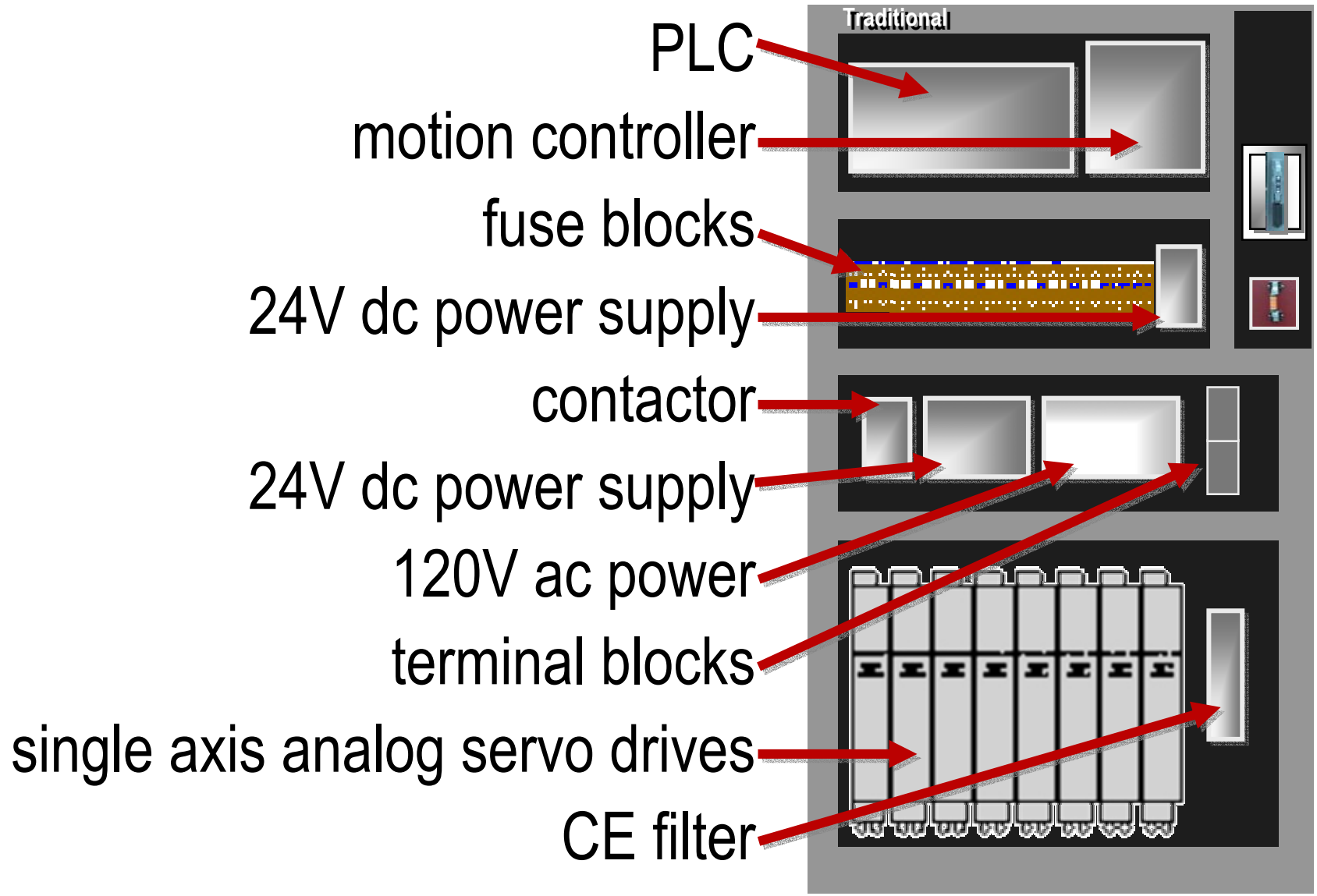
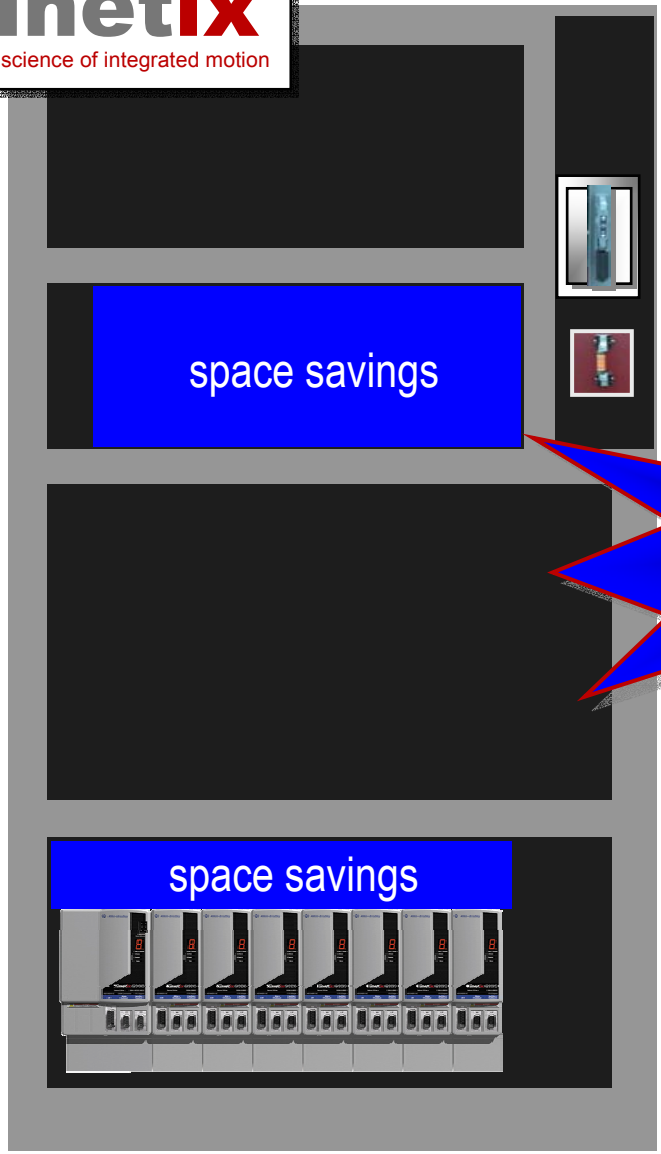
ROCKWELL SOFTWARE
Rockwell Automation

Traditional Servo Drive Panel



Kinetix 6000 Reduces The Space Required For Drives . . .

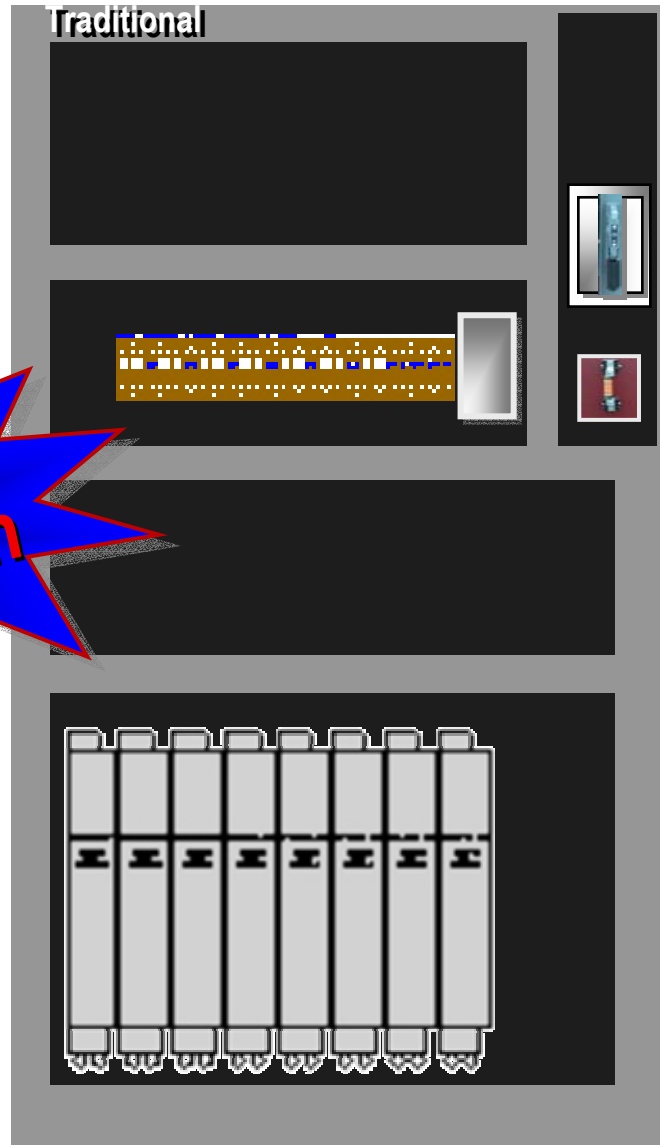
Kinetix
The new science of integrated motion



- Multi-axis solution eliminates the need for seven fuse blocks

12% Reduction

- Kinetix 6000 compact design
- 24V power supply built into Kinetix 6000



And Reduces Space Required For Magnetics

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Incorporated into the LIM:

- Fuse block
- 24V power supply for I/O
- Contactor

space savings

space savings

space savings

15% Reduction

- 24V power supply
- Terminal block replacement
- CE filter

Traditional

Kinetix Reduces The Space Required For PLC And Motion Control

Kinetix
The new science of integrated motion

space savings

- PLC control and Motion Control in same ControlLogix platform

4% Reduction

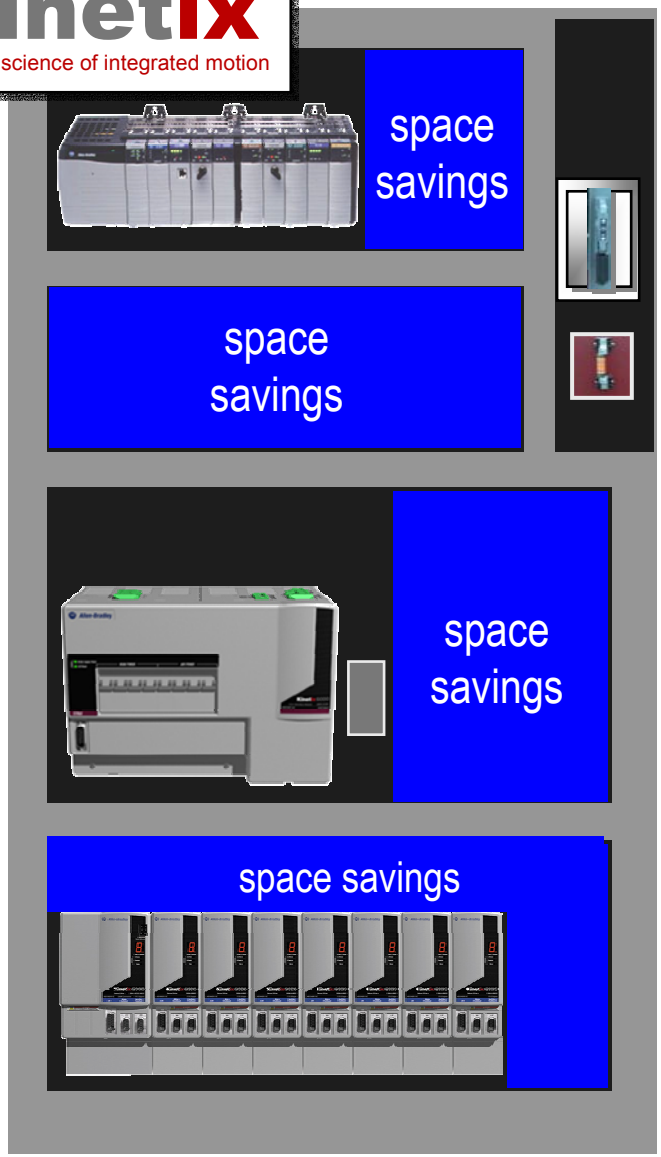
Traditional

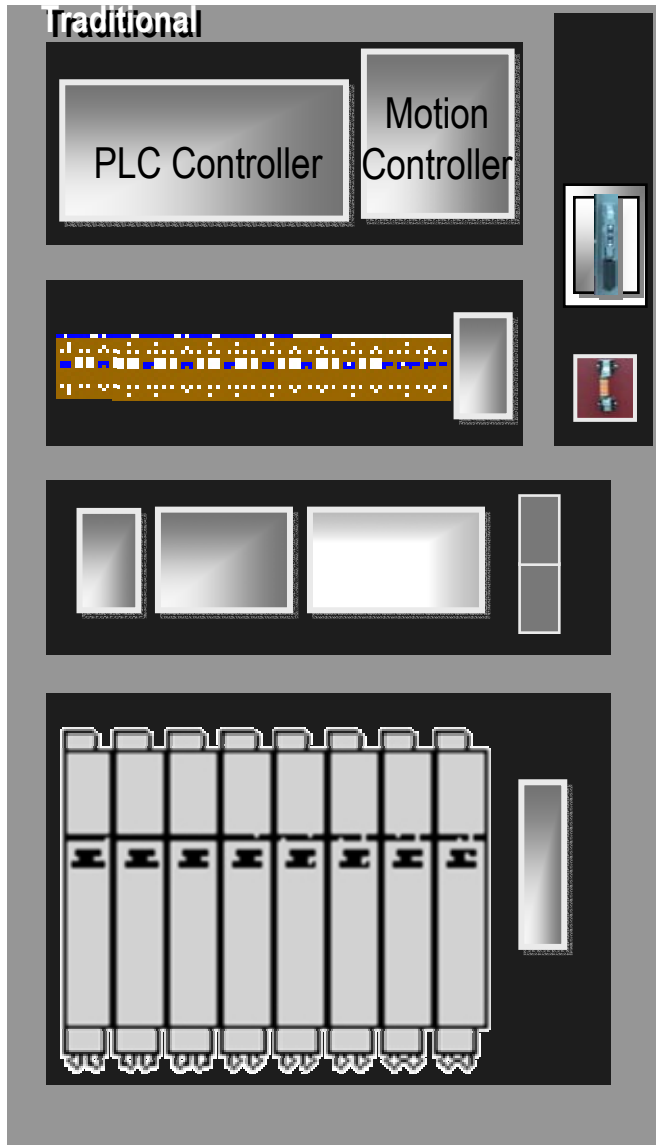
PLC Controller

Motion Controller

Overall Space Savings With Kinetix Integrated Motion Using The Kinetix 6000

Kinetix
The new science of integrated motion





Smaller Panels Mean Lower Cost

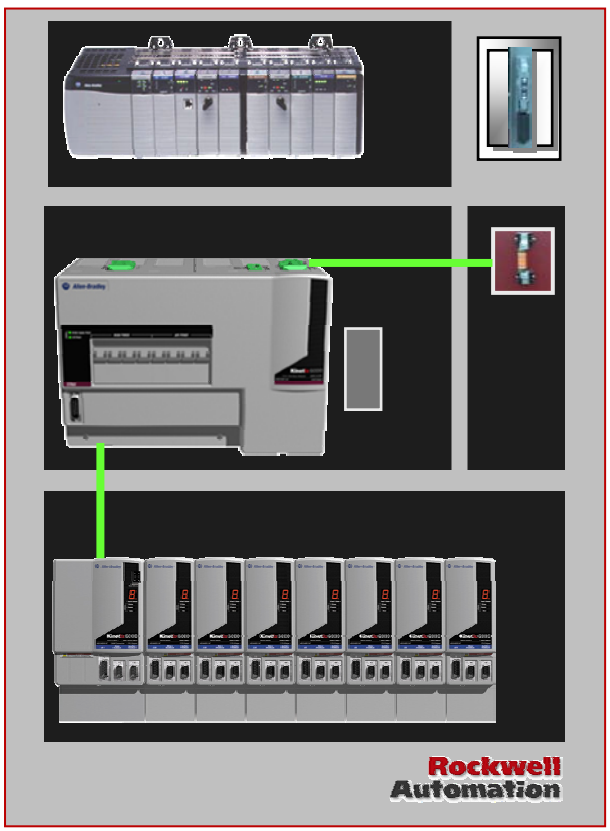
Think About It . . .

- How much would a 31% smaller enclosure save you?
- Where could you put a 31% smaller enclosure?
- How small could your machine be if you had a 31% smaller enclosure?

31%

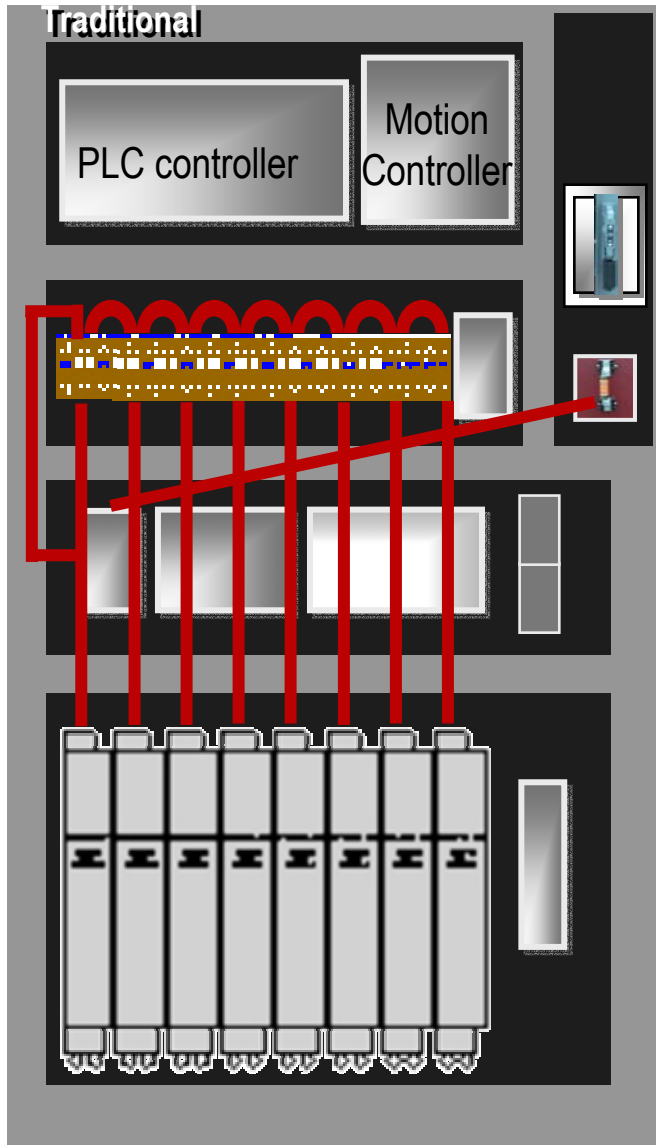
Kinetix 6000 Reduces Terminations For 3-phase Power Wiring

Kinetix
The new science of integrated motion



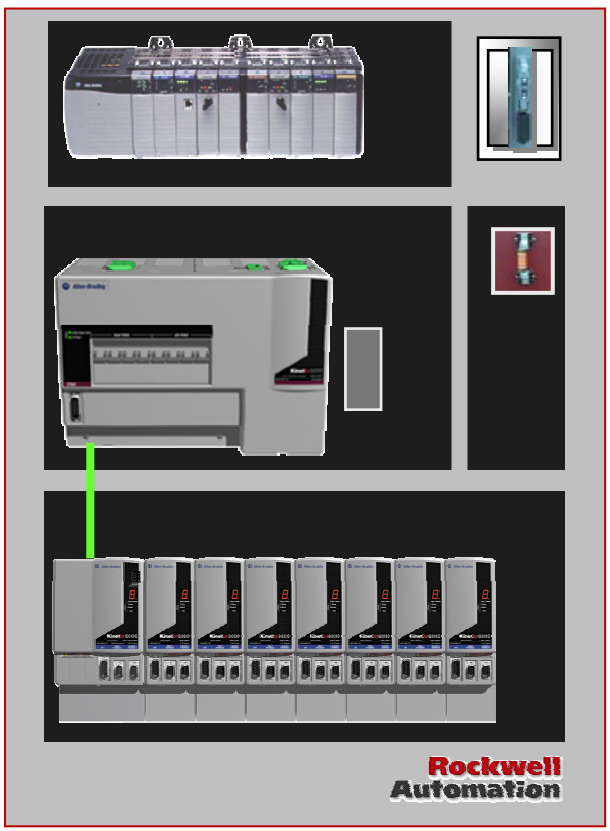
How many terminations would you rather make?

16 vs. 136



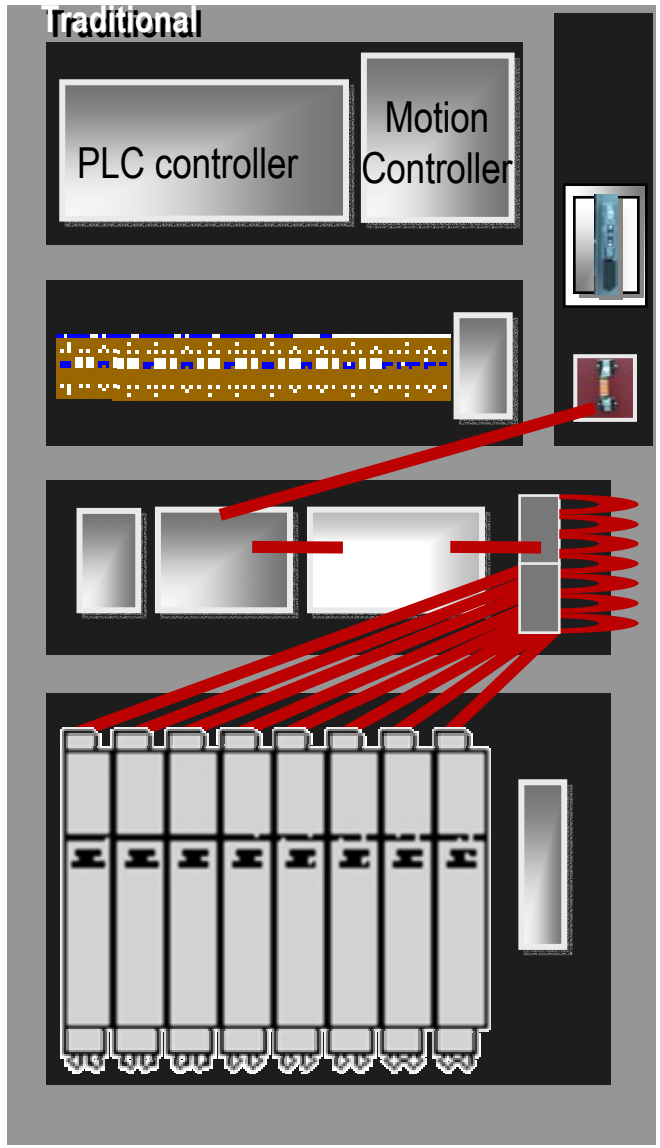
And Reduces Control Power Wiring

Kinetix
The new science of integrated motion



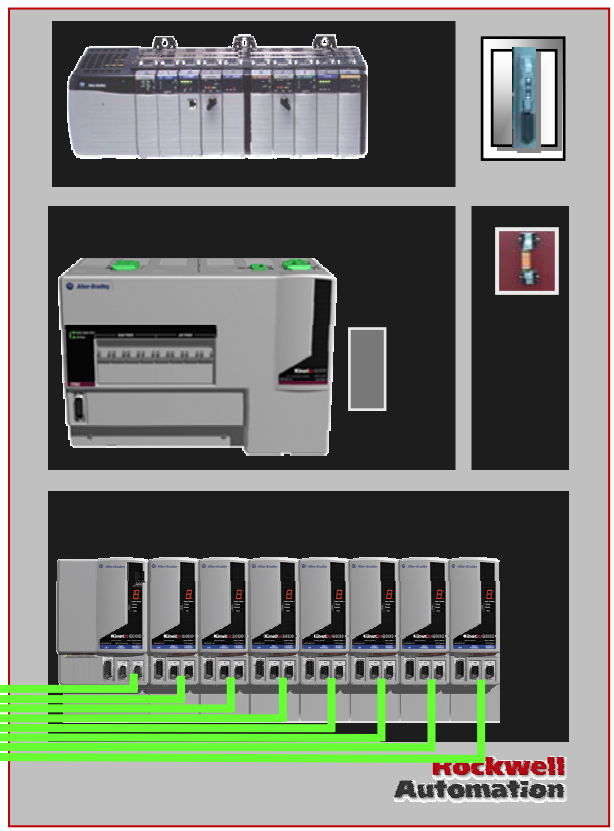
How many terminations would you rather make?

4 vs. 58



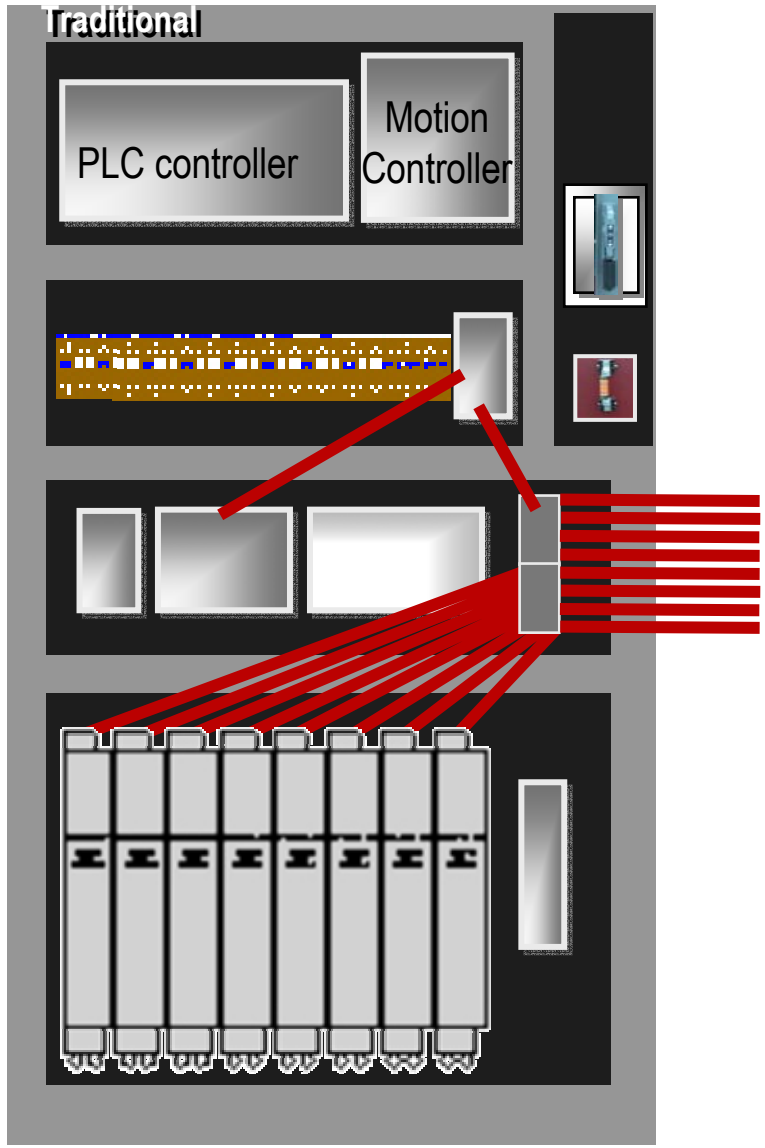
And Reduces Registration I/O Wiring

Kinetix
The new science of integrated motion



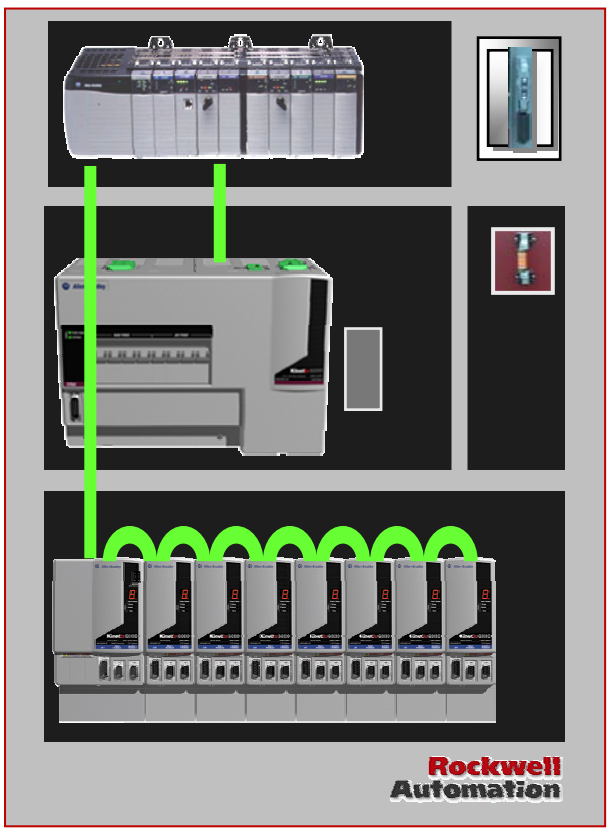
How many terminations would you rather make?

48 vs. 134



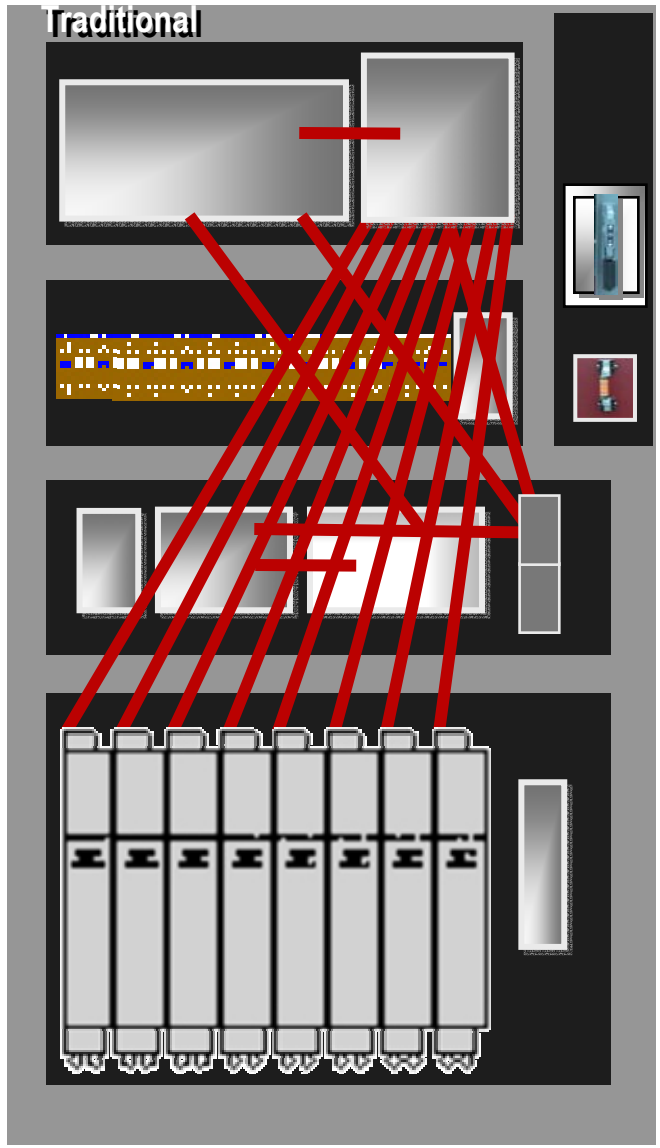
Kinetix Reduces Controller To Drive Wiring

Kinetix
The new science of integrated motion



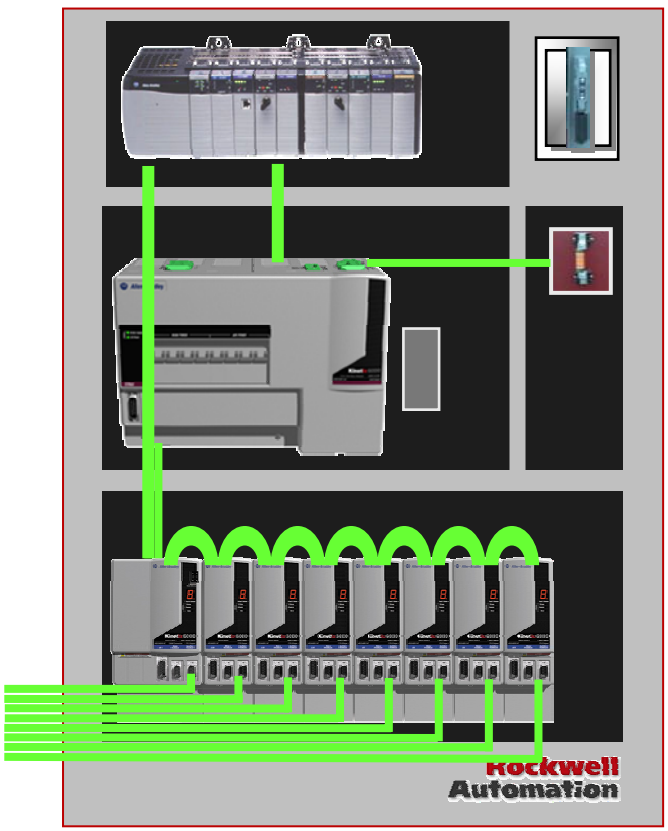
How many terminations would you rather make?

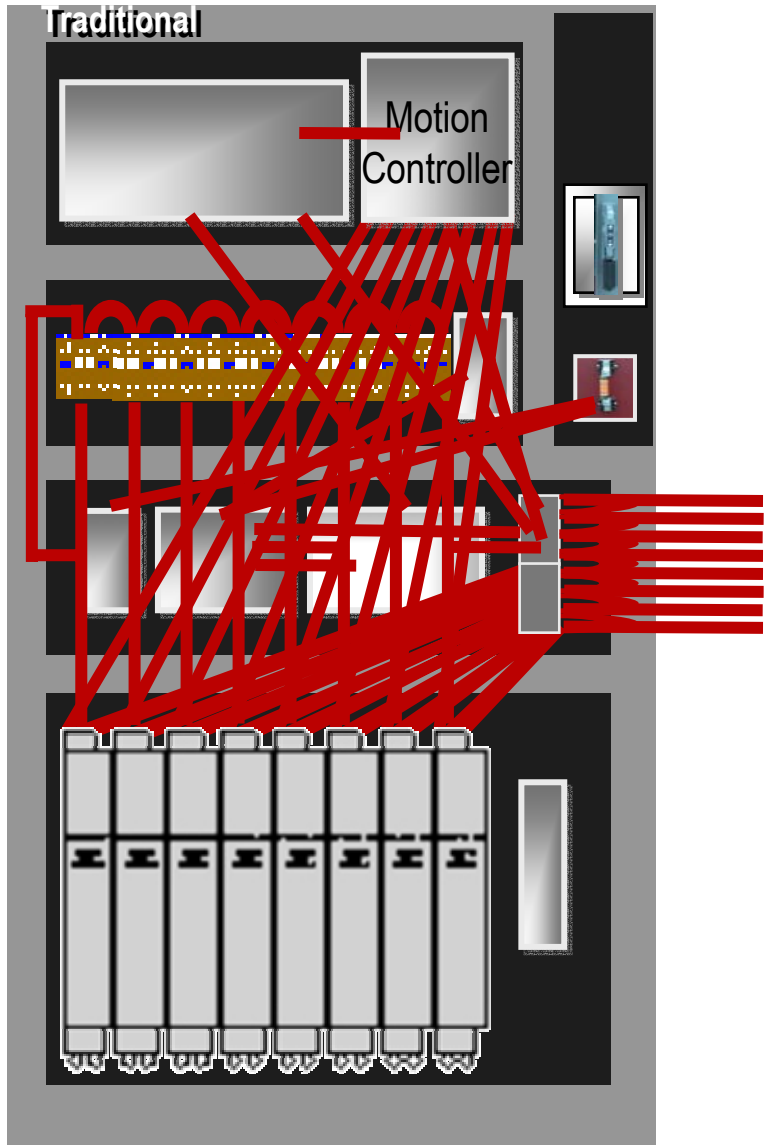
28 vs. 157



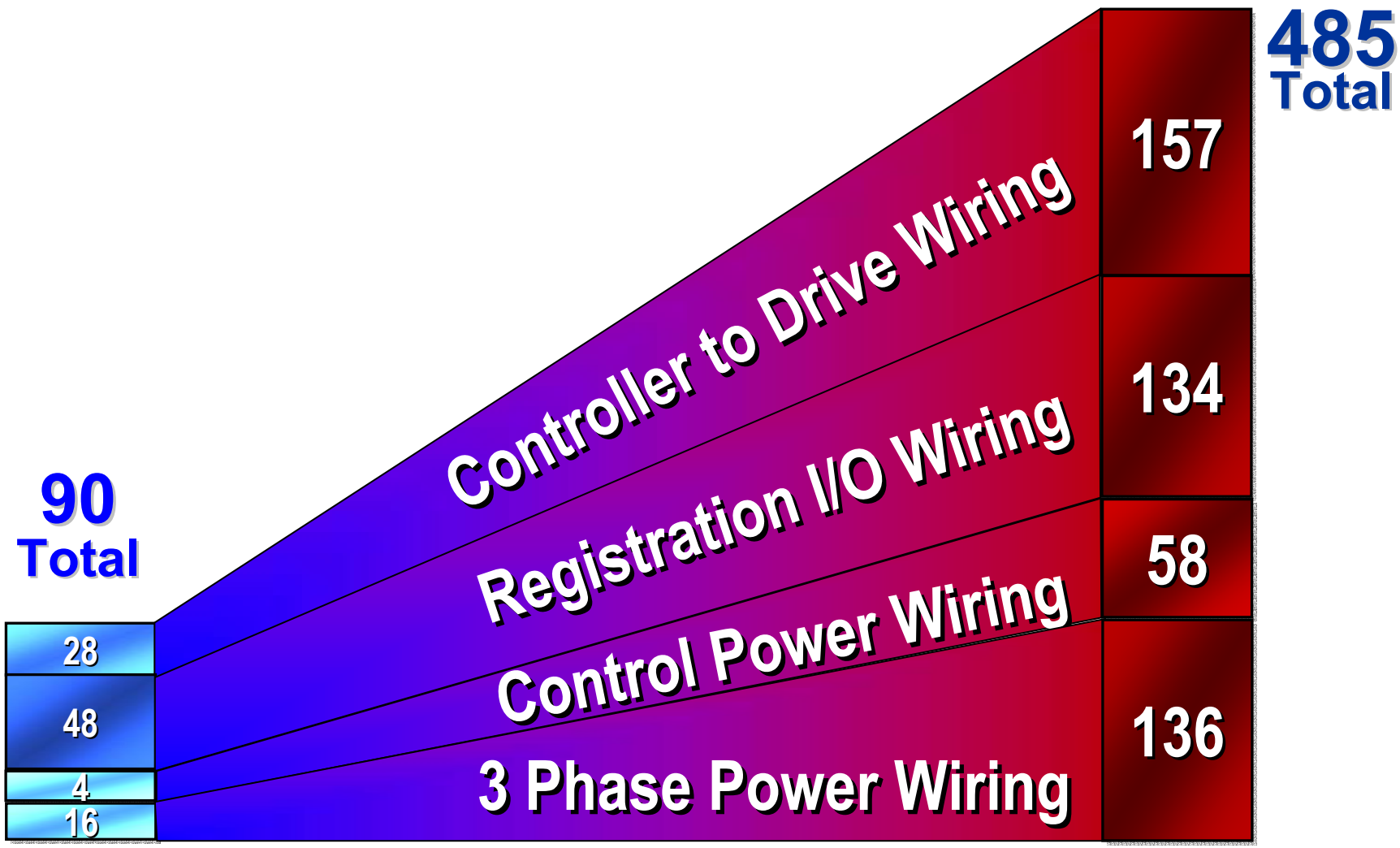
Overall Wiring Reduction With Kinetix Integrated Motion Using The Kinetix 6000

Kinetix
The new science of integrated motion





Overall Wire Terminations Reduction



Kinetix
The new science of integrated motion

Think About It . . .

395

How much would 395 fewer wire terminations save you?

31% Total Reduction in Space Requirements

The Kinetix Integrated Motion Advantage

395 Fewer Terminations

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