LISTEN.
THINK.
SOLVE.

Summer Days 2018

What's New in Hardware

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5. a 6. září 2018

Rockwell Automation

Integrated Architecture

A HIGH PERFORMANCE ARCHITECTURE

Smart. 

Productive. 

Secure. 

Integrated Architecture® Portfolio

Design Software

Studio 5000® | CCW | Arena ®

Distributed Control System

PlantPAx®

Visualization & Information Software

FactoryTalk® | ThinManager ®

Programmable Automation Controllers

CompactLogix™ | ControlLogix® GuardLogix® Armor™ GuardLogix ®

Industrial Network Infrastructure & Media

Stratix®

Operator Interfaces & Industrial Computers

PanelView™ | MobileView™

Smart Sensing Devices

RightSight™ VisiSight™ RFID Pressure

Input / Output Devices

Compact I/O™ FLEX™ I/O POINT I/O™ ArmorBlock® ArmorPOINT®

Motor Control Devices

PowerFlex® IntelliCENTER®

Motion Control

Kinetix® | iTRAK® | MagneMotion®

CONTROLLERS

Controller Portfolio

Micro Control Platform

Micro800® Controller

- Low acquisition cost
- Easy connectivity
- Simple programming tools
- Ideal for standalone machines

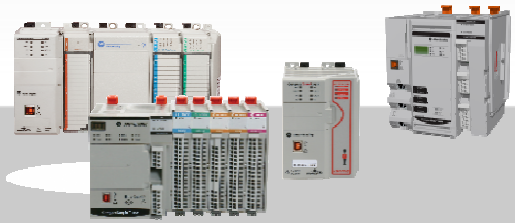
Standard Machines

CompactLogix™ Controller

Complex Machines & Process

ControlLogix™ Controller

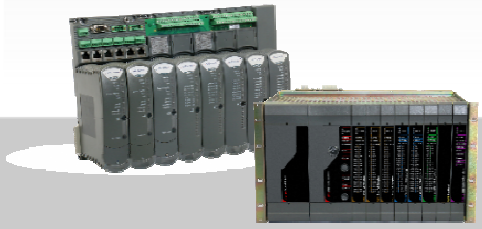
- Multiple control disciplines
- Flexible and scalable
- Real-time information enabled
- Standard, unmodified Ethernet
- One common integrated design environment
- Local and distributed I/O options



Process Safety

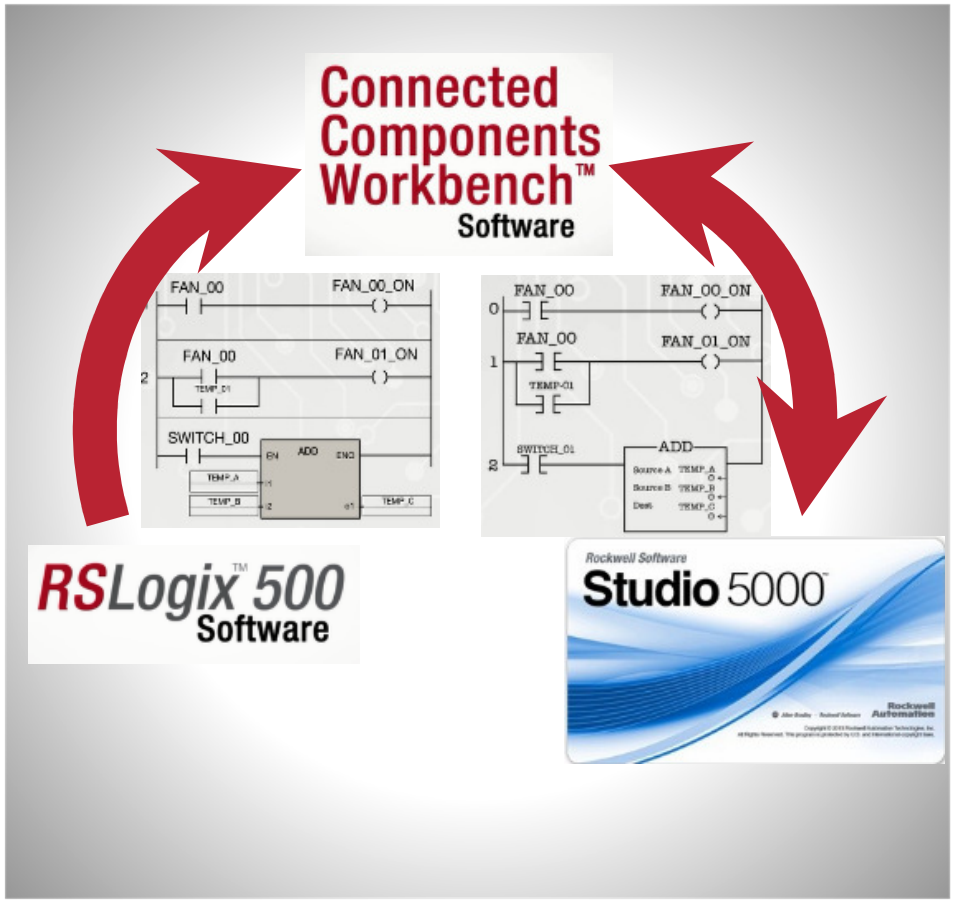
AADvance® /Trusted®

- Scalable redundancy for fault tolerance
- Provides safety and availability requirements
- Distributed processing power



Logix Theme in Connected Components Workbench™ Software

Feature Pack Version 11



New

Editor updates to make MicroLogix™ and Logix users more comfortable with programming Micro800® controllers

Add Ladder Logic using similar workflows as RSLogix 500® and Studio 5000 Logix Designer®

- Ability to quickly enter and modify ladder rungs using ASCII Text
- Add instructions using an Instruction Toolbar

With single operation, switch themes between current Micro800 IEC theme to Studio 5000 Logix Designer ladder editor theme

- Automatically maps IEC to equivalent Logix instructions
- “+” maps to “ADD”, “-” maps to “SUB”

Copy and paste Ladder Logic between Connected Components Workbench™ software, RSLogix 500 and Studio 5000 Logix Designer ladder editors

CompactLogix Controllers

CompactLogix™ 5370

- Integrated Motion on EtherNet/IP™ up to 16 axes
- Linear and Device Level Ring network topologies for up to **80** *new nodes
- Integrated safety up to SIL 3, PLe CAT 4 versions
- On-Machine version

CompactLogix™ 5380

- Integrated Motion on EtherNet/IP up to 32 axes
- Two Ethernet ports for dual IP or support for linear and Device Level Ring topologies for up to ***180*** *new nodes
- Enables high-speed I/O, motion control, Integrated safety up to SIL 2, PLd CAT 3 versions
- Enhanced security features

CompactLogix™ 5480

- Enables high-speed I/O, and Integrated Motion on EtherNet/IP up to 150 axes
- Includes three GbE Ethernet/IP ports supporting both linear or Device Level Ring topologies up to 250 nodes
- Provides a Logix based real-time controller that runs in parallel to an instance of Windows 10 IOT Enterprise
- Enhanced security features

Multiple disciplines

Flexible and scalable

One common design environment

ControlLogix® Controllers

ControlLogix® 5570

- Integrated Motion on EtherNet/IP™ up to 100 axes
- Integrated safety up to SIL 3, PLe CAT 4 versions
- On-Machine versions
- Conformal coat and extreme environment versions
- Redundancy and removal insertion under power

ControlLogix® 5580

- Integrated Motion on EtherNet/IP™ up to 256 axes
- 1 gigabit (Gb) embedded Ethernet port enables high-speed I/O and motion control for up to 300 nodes
- Conformal coat versions
- Removal insertion under power
- Enhanced security features

Multiple disciplines

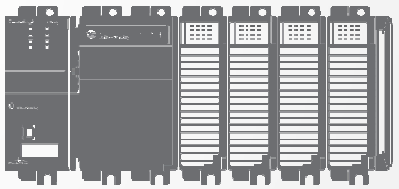
Flexible and scalable

One common design environment

CompactLogix™ 5370
Portfolio expansion

CompactLogix™ 5370	Memory	Nodes	Integrated Motion on EtherNet/IP	Local I/O
1769-L16ER-BB1B	384 KB	4	--	6
1769-L18ER(M)-BB1B	512 KB	8	2	8
1769-L19ER-BB1B	1 MB	8	--	8
1769-L24ER-QB1B	750 KB	8	--	4
1769-L24ER-QBFC1B	750 KB	8	--	4
1769-L27ERM-QBFC1B	1 MB	16	4	4
1769-L30ER(M)	1 MB	16	4	8
1769-L33ER(M)	2 MB	32	8	16
1769-L36ERM	3 MB	48	16	30
1769-L37ERM*	**4 MB**	**64**	**16**	**30**
1769-L38ERM*	**5 MB**	**80**	**16**	**30**

Compact GuardLogix® 5370	StandardMemory	Safety Memory	Nodes	Integrated Motion on EtherNet/IP
1769-L30ERMS	1 MB	0.5 MB	16	4
1769-L33ERMS	2 MB	1.0 MB	32	8
1769-L36ERMS	3 MB	1.5 MB	48	16
1769-L37ERMS*	**4 MB**	**1.5 MB**	**64**	**16**
1769-L38ERMS*	**5 MB**	**1.5 MB**	**80**	**16**



On-Machine™ Controllers

Portfolio expansion

Armor™ CompactLogix™ 5370	Memory	Nodes	Integrated Motion on EtherNet/IP	Local I/O
1769-L33ERMO	2 MB	32	8	16
1769-L36ERMO	3 MB	48	16	30
1769-L37ERMO*	**4 MB**	**64**	**16**	**30**
1769-L38ERMO*	**5 MB**	**80**	**16**	**30**

Armor™ Compact GuardLogix® 5370	StandardMemory	Safety Memory	Nodes	Integrated Motion on EtherNet/IP
1769-L33ERMOS	2 MB	1.0 MB	32	8
1769-L36ERMOS	3 MB	1.5 MB	48	16
1769-L37ERMOS*	**4 MB**	**1.5 MB**	**64**	**16**
1769-L38ERMOS*	**5 MB**	**1.5 MB**	**80**	**16**

Armor™ ControlLogix® 5570	Memory	Nodes	Integrated Motion on EtherNet/IP	Local I/O
1756-L72EROM	4 MB		100	16
1756-L73EROM	8 MB		100	30

Armor™ GuardLogix® 5570	Standard Memory	Safety Memory	Nodes	Integrated Motion on EtherNet/IP
1756-L72EROMS	4 MB	2 MB		100
1756-L73EROMS	8 MB	4 MB		100

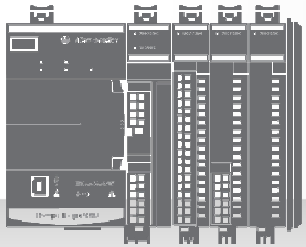
Logix 5000™ Controllers

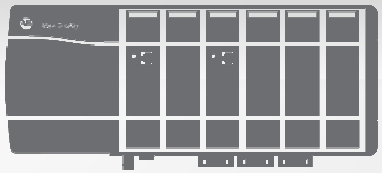
New Node counts in v31

CompactLogix™ 5380	Memory	Nodes	Integrated Motion on EtherNet/IP	Local I/O
5069-L306ER(M)(S2)	600 KB	16	2	8
5069-L310ER(M) (S2)	1 MB	24	4	8
5069-L310ER-NSE	1 MB	24	0	8
5069-L320ER(M) (S2)	2 MB	40	8	16
5069-L330ER(M) (S2)	3 MB	60*	16	31
5069-L340ER(M) (S2)	4 MB	90*	20	31
5069-L350ERM(S2)	5 MB	120*	24	31
5069-L380ERM(S2)	8 MB	150*	28	31
5069-L3100ERM(S2)	10 MB	180*	32	31

*Increased in v31

ControlLogix® 5580	Memory	Nodes	Total Axes of Motion	Local I/O
1756-L81E(S)	3 MB	100	256 (subject to node limit)	16
1756-L82E(S)	5 MB	175		
1756-L83E(S)	10 MB	250		
1756-L84E(S)	20 MB	250		
1756-L85E	40 MB	300		





Compact GuardLogix® 5380

High performance CPU

- Optimized for faster safety reaction time

new

Scalable Safety Level

- SIL CL2, Up to PLd

Dual 1-Gb Embedded EtherNet/IP Ports

- Configurable Dual IP or DLR
- Integrated Safety on EtherNet/IP

Compact 5000™ local Safety I/O

Increased Scalability

- 5069-L306ER(M)S2: 600 KB Std / 300 KB Sfy; 2 axes; 16 nodes
- 5069-L310ER(M)S2: 1 MB Std / 0.5 MB Sfy; 4 axes; 24 nodes
- 5069-L320ER(M)S2: 2 MB Std / 1 MB Sfy; 8 axes; 40 nodes
- 5069-L330ER(M)S2: 3 MB Std / 1.5 MB Sfy; 16 axes; 60 nodes
- 5069-L340ER(M)S2: 4 MB Std / 2 MB Sfy; 20 axes; 90 nodes
- 5069-L350ER(M)S2: 5 MB Std / 2.5 MB Sfy; 24 axes; 120 nodes
- 5069-L380ER(M)S2: 8 MB Std / 4 MB Sfy; 28 axes; 150 nodes
- 5069-L3100ER(M)S2: 10 MB Std / 5 MB Sfy; 32 axes; 180 nodes

GuardLogix® 5580 Controller

High Performance CPU

- Optimized for faster safety reaction time

Scalable Safety Level

- SIL CL2, Up to PLd – Primary Controller
- SIL CL3, Up to PLe – Primary Controller + Safety Partner

1-Gb Embedded Ethernet/IP Port

- Integrated Safety on EtherNet/IP, I/O and Safety Devices

IEC 61800-5-2 Safety Instructions

- New Drive Safety Instructions with Kinetix® 5700 ERS4 drive
  - Safe feedback scaling, Safe Stop 1, Safe Stop 2, Safe Operation Stop
  - Safe Limited Speed, Safe Limited Position
  - Safe Brake Control with external brake, Safe Direction

Increased Scalability

- 1756-L81ES: 3 MB standard memory /1.5 MB safety memory; 100 Nodes
- 1756-L82ES: 5 MB standard memory / 2.5 MB safety memory; 175 Nodes
- 1756-L83ES: 10 MB standard memory / 5 MB safety memory; 250 Nodes
- 1756-L84ES: 20 MB standard memory / 6 MB safety memory 250 Nodes

Replacement Guidelines

GuardLogix® 5560/5570 Controller to GuardLogix® 5580 Controller 1756-RM100A-EN-P

- GuardLogix® 5580 enhancements and differences are clearly summarized in one document

Safety Standard IEC-61508 Part-1, Section 7.16 (Overall modification and retrofit) states as follows:

7.16.2.3.- **An impact analysis shall be carried out that shall include an assessment of the impact of the proposed modification or retrofit activity on the functional safety of any E/E/PE safety-related system**. The assessment shall include a hazard and risk analysis sufficient to determine the breadth and depth to which subsequent overall, E/E/PE system or software safety lifecycle phases will need to be undertaken. The assessment shall also consider the impact of other concurrent modification or retrofit activities, and shall also consider the functional safety both during and after the modification and retrofit activities have taken place.

ENTERPRISE (Level 4)

- Private or Public Cloud
- On premise scales virtually, in cloud scales elastically
- Remotely administered

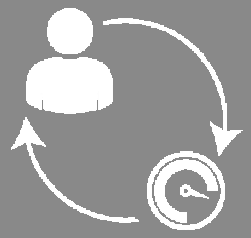
SYSTEM (Levels 2 through 3)

- Industrial or white-box computing
- Industrial Data Center
- Virtually runs any application, has wider breadth

DEVICE (Levels 1 through 2)

- In cabinet, in chassis, in controller computing
- Right size and form for function
- Helps analytics happen at correct level of hierarchy

NEW



CONNECTED SERVICES

- Design / Implementation / Integration
- Infrastructure-as-a-Service (IaaS)
- Application Specific Support
- 24x7 Monitoring and Administration
- On-site Response

SCALABLE **COMPUTE**

Rockwell Automation

ControlLogix® Compute Module

In-chassis computing

- Enables easier information access by having compute capability at the source of the information
- Can be used to help reduce downtime and improve operational efficiency by monitoring the equipment or machine in real time
- Can be used to help predict downtime before it occurs
- Intel Atom 1.46 GHz dual core processor, 4 GB RAM
- 32 GB SSD (approx. 20 GB free space for user applications)

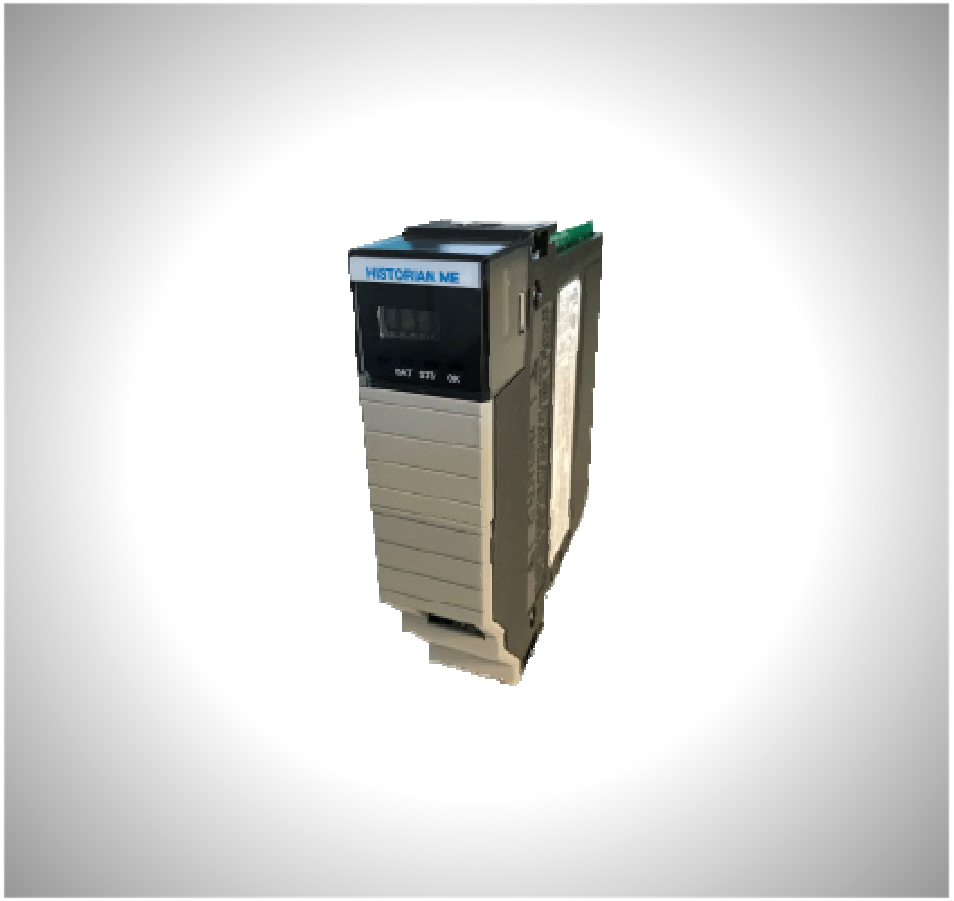
Flexible

- Easily add value to existing ControlLogix® applications without having to disrupt production
- Supports next generation machine or equipment designs allowing differentiation
- Windows® 10 IoT Enterprise (64-bit) or Linux (32-bit)

Simplified architectures

- Supports integrated visualization with onboard DisplayPort for direct connection to high definition industrial monitors
- Built in API to allow for direct communication with a ControlLogix® processor via the backplane
- Run commercially available off-the-shelf or custom applications in the same chassis as the ControlLogix® controller

FactoryTalk Historian ME Module (series B)



Updated hardware

- Intel Atom E3826 Dual Core Processor 1.46 GHz
- mSATA drive
- Ethernet Port supports 10/100/1000 Mbit speeds
- Field replaceable battery
- Leverages the Scalable Compute Platform

Off Chassis Data Collection

- Collect data from up to 10 devices (2500 tags or 2500 events/second, which ever comes first)
- Maximum of 5 local and 5 remote devices
- ControlLogix and CompactLogix devices

Features

- High speed data collection to 10 msec for in-chassis ControlLogix controllers
- Time synchronization with local controller or NTP server
- Add on Profile integration with local controller
- Integrated DataTransfer to higher level Historian (FTHSE or PI Server)
- Device Profile for FactoryTalk Analytics for Devices (SHELBY) to monitor

CompactLogix™ 5480

Target
Q4CY18

Logix controller with Windows 10 IoT Enterprise in parallel

- Commercially available CPU for high performance
- Run Windows applications in parallel to Logix real time control
- Up to 20 MB Logix user memory, 150 axes on EtherNet/IP, 250 nodes

Enhanced Security

- Digitally signed and encrypted firmware
- License based source and execution protection

(3) Logix 1-Gb Embedded EtherNet/IP Ports

- 2 ports configurable Dual IP or DLR

Windows 10 IoT Enterprise

- (1) GbE port
- (2) USB 3.0 ports

Monitor Interface

- DisplayPort supports standard converters for HDMI, DVI, VGA displays

Compact 5000™ local I/O

- Supports up to 31 local I/O modules

I/O

I/O Portfolio

Chassis and Distributed I/O

ControlLogix®

Chassis-based I/O

- I/O diagnostics for detection of both system and field-side failures
- Electronic keying to help prevent replacement errors
- Wide range of modules from high performance to process control

FLEX™, FLEX 5000™

Process Distributed I/O

- High-performance FLEX 5000™ I/O for CompactLogix™ 5380 and ControlLogix® 5580
- High-channel density on a distributed platform

1719 Ex, 1715 Redundant

Intrinsic Safety and High Availability I/O

- 1719 Ex I/O for hazardous area locations
- 1715 Redundant I/O provides high availability for ControlLogix controllers

Dynamix™

Condition Monitoring

- Integrates machine protection with your standard control system
- Dual Ethernet ports supporting both Linear and Device Level Ring topologies

Compact I/O™, Compact 5000™

Discrete Machine I/O

- High-performance Compact 5000™ I/O for CompactLogix™ 5380 and ControlLogix 5580
- High-density Compact I/O™ for CompactLogix™ 5370

POINT I/O™

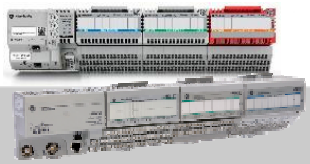
Smart Machine Distributed I/O

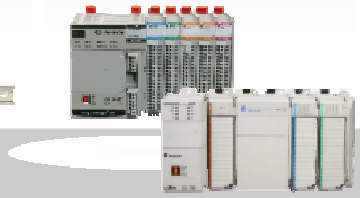
- Low-cost platform with lower density inputs and outputs
- Compact design makes installation easier
- Machine safety, specialty and IO-Link options available

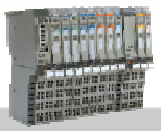
ArmorBlock®

On-Machine™ I/O

- IP67 rated modules
- Reduces wiring and panel space
- Quick connect for daisy chaining modules
- Analog, Digital, specialty, machine safety and IO-Link options available







Compact 5000™ Discrete Safety I/O

5069-IB8S

- Safety digital input module
- Single Channel : PLd
  - Single Channel allow use of the module for up to Safety Category 3, in applications rated up to and including Performance Level d/SIL 3 with safety pulse test enabled
- Dual Channel: PLe
  - Dual Channel allow use of the module for up to Safety Category 4, in application rated up to and including Performance Level e/SIL 3 with safety pulse test enabled
- Diagnostic capability:
  - Short circuit, Muting Lamp Error, Over & Critical Temperature, Field Power OFF, internal fault, Overload detection with Test Output.

Local and distributed I/O for CompactLogix™ 5380

Distributed I/O for ControlLogix® 5580

Coming Soon!

Compact 5000™ Discrete Safety I/O

5069-OBV8S

- Configurable Safety Output module (Sourcing / Bipolar)
  Sourcing mode:
  - Single Channel : up to Cat 4, up to and including PLe with pulse test enabled, IEC 60947 for contactors/actuators
  - Dual Channel: up to Cat 4, up to and including PLe with wiring according to EN 13849 and safety pulse test enabled Fault of one channel does not shut down the whole module
- Bipolar mode: PLe
- Diagnostic capability:
  - Short circuit, No Load(Open Wire), Overload, Over & Critical Temperature, Field Power OFF, Dual Channel Fault(only sourcing mode)

Local and distributed I/O for CompactLogix™ 5380
Distributed I/O for ControlLogix® 5580

Coming Soon!

Compact 5000™ SERIAL

new

- Supports multiple protocols:
  - Generic ASCII and MODBUS RTU/ASCII (Now)
  - DF1 and DH485 (Future)
  - Configurable in Studio 5000 (V31 onwards)
- Generic ASCII:
  - Send and Receive Data in simplified way
  - Common user experience as 1769-ASCII module
- MODBUS RTU/ASCII:
  - Up to 50 Modbus Master commands per port
  - Up to 30 entries of Modbus Slave data per port
  - Data mapped directly back to module tags
  - Eliminates complex programming

Enables the high performance Logix Controller (5380) to communicate with legacy devices

Compact 5000™ I/O Modules

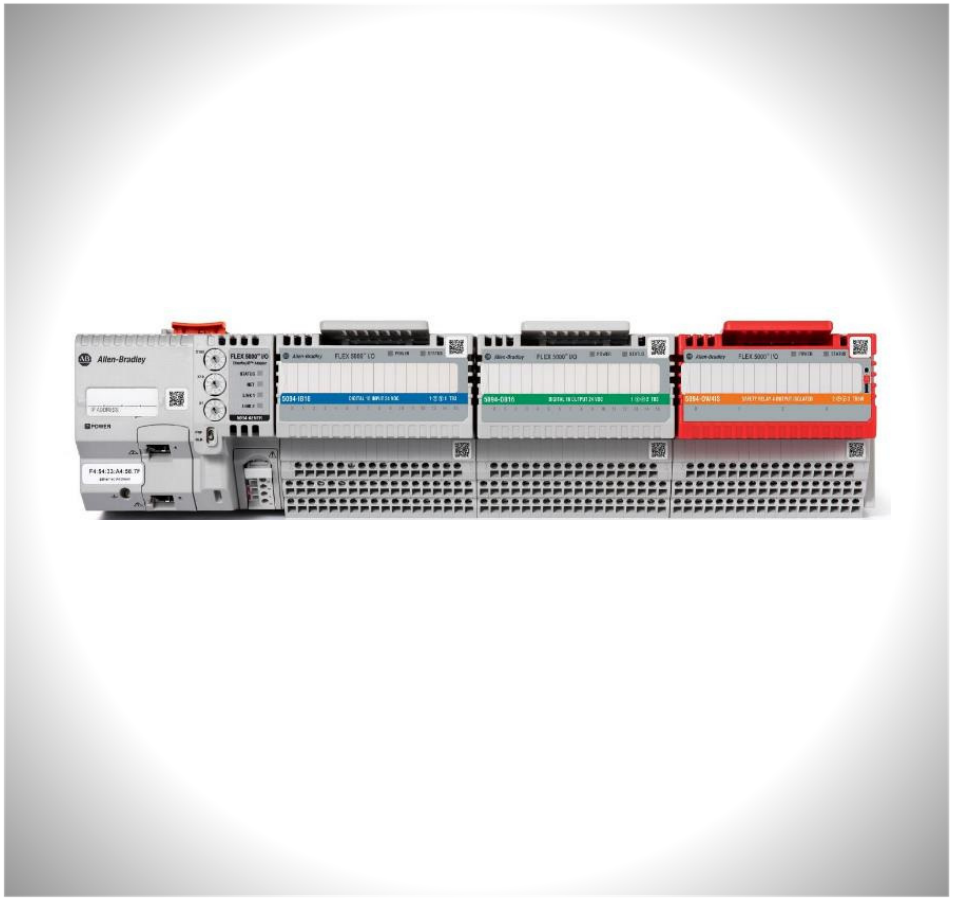
- Compact 5000™ Serial
- Compact 5000™ Safety
  - Target release: Q4 2018
- CompactLogix™ 5380 Controllers
  - Full connectivity to Compact 5000™ I/O both locally and remotely via adapter
- ControlLogix® 5580 Controllers
  - Full connectivity to Compact 5000™ I/O remotely via adapter

	AENTR	AEN2TR	EtherNet/IP Adapter
IB6F-3W	IB16F	IB16	Input - 24Vdc
	OB16F	OB16	Output - 24Vdc
	IF8	IY4	put – Analog/Temperature
	OF8	OF4	Output – Analog
	OX4I	OW4I	Output – Relay Isolated
		HSC2xOB4	High-Speed Counter
		FPD	Field Power Distribution
		ARM	Address Reserve
		IA16	Input – 120/240Vac
		OA16	Output – 120/240Vac
		OB8	Output - 24Vdc
		OW16	Output – Relay
		SERIAL	Serial
		IB8S	Digital Safety Input
		OBV8S	Digital Safety Output

Available in Q4 CY2018

FLEX 5000™ I/O Modules

Next Generation Process I/O



High performance backplane

Dual 1-Gb Embedded EtherNet/IP Ports

- Copper or Fiber
- Supports Star, Device Level Ring, and PRP topologies

Rugged Design

- Operating Temperature: -40…70℃
- Extreme environments: Class G1, G2 and G3
- Hazardous environments: Class 1, Div. 2 Zone 2 Groups A, B, C, D, E, F

Standard I/O

- 32 Channel Digital In/Out
- 8 Channel Analog In/Out

Safety I/O (up to SIL3, PLe, Category 4)

- 16 Channel Digital In/Out
- 4 Channel Analog In/Out

Consistent I/O Wiring

- IB16, IB16S same wiring

Easy snap-in installation

- Removal and insertion under power (RIUP)

FLEX 5000™ I/O

Next Generation 5000 Series I/O Platform Technology

Rugged Design

Operating Temperature:
-40 ℃…70 ℃
(-40 ℉...158 ℉)

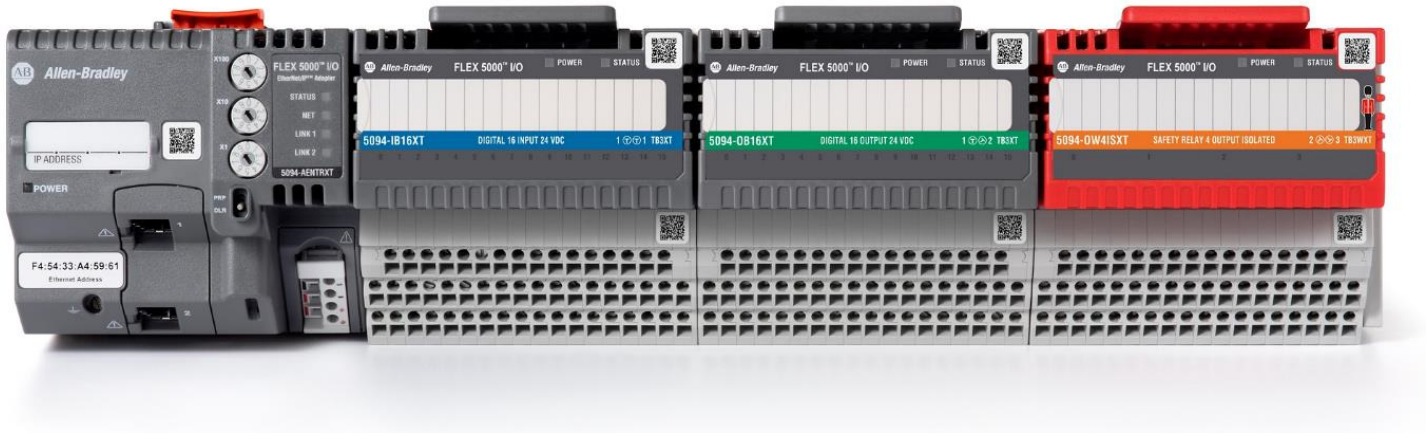
Extreme Environments:
Class G1, G2, and G3

Hazardous Environments:
Class I, Div. 2
Zone 2 Groups
A, B, C, D, E, F

Performance
1 Gigabit (Gb) EtherNet/IP™
1 Gigabit (Gb) Backplane Speed

Standard I/O
32 Channel Digital In/Out
8 Channel Analog In/Out

Safety I/O (SIL 3, PLe, Cat. 4)
16 Channel Digital In/Out
4 Channel Analog In/Out



Network Media and Topologies
2 Copper/2 Fiber Ports
Supports Device Level Ring (DLR), Star, Linear, Parallel Redundancy Protocol (PRP)

Easy snap-on installation
Removal and Insertion Under Power (RIUP)

Consistent I/O Wiring
Direct Termination of 2, 3 & 4 wire devices

NETWORKS & SECURITY

Network & Security Portfolio

Unmanaged,
Stratix®

- Low-cost, compact solutions
- Automatically negotiates speed and duplex settings
- No configuration required

Lightly Managed
Stratix®

- Low-cost, compact solutions
- Automatically negotiates speed and duplex settings
- No configuration required, or can be configured to support security, resiliency and bandwidth optimization

Managed Switches
Stratix®

- Access switches & distribution switches
- High Performance switching up to 10 GB
- Integrated Network Address Translation
- Integrated DLR with 3 ring support
- IT and OT configuration and support tools

Security Appliances
Stratix®

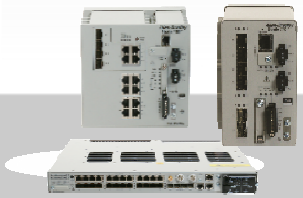
- Secure real-time control communication
- Intrusion prevention using Deep Packet Inspection capabilities
- Routing and firewall capabilities
- Access control lists

Communication Modules
1756

- Communication links between devices and ControlLogix controller
- Can use EtherNet/IP, ControlNet, and DeviceNet network protocols
- Supports real-time I/O & exchange messaging

Embedded Switch &
Linking Devices

- Connects control networks to device level networks
- Leverages existing network structures for migrations



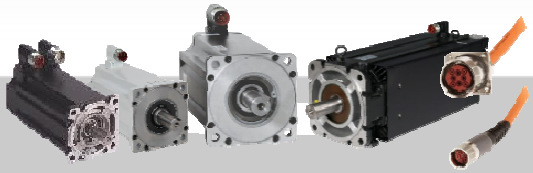
MOTION

Motion Portfolio

Rotary Motors & Actuators

VP and MP-series

- Designed to meet the unique needs of many industries including wash down applications
- Single or dual cable motor options available
- SIL 2/Pld encoder options



Servo Drives

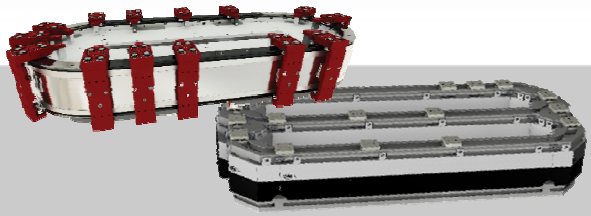
Kinetix®

- Broad range of drives from low power indexing drives to high power, multi-axes drives
- Integrated motion on EtherNet/IP
- Integrated safety on EtherNet/IP

Intelligent Track Systems

iTrak®- MagneMotion®

- Modular, scalable linear motor system that allows independent control of multiple movers
- Ideal for packaging, automotive, life sciences, logistics industries



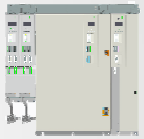
Motion Update

Kinetix® 5700 ERS4 Advanced Safety Servo Drive

- New embedded safety functions
  - SS1, SS2, SOS, SLS, SDI, SLP
- Perform machine adjustments without shutting the machine down
- Faster line re-start after safety demand is executed
- Use of VPx servo motors with SIL encoders simplifies safety function implementation by up to 83%

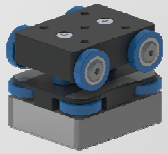
Kinetix® AFE & 112kW expansion

- DC bus regulation across wide input voltage & low harmonic operation
- Expanding Kinetix 5700 family feature set to 112 kW

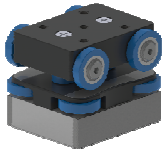
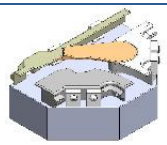


Independent Cart & Linear

- Higher payload capability & bearing improvement
- VPAR/S – ETO today, project funded



Independent Cart & Linear
MagneMover LITE, iTRAK, VPAR/S

Feature	What are we doing	Why are we doing it	Target AFC
Wheeled Puck 	Increasing payload 5X for standard and tandem pucks	• Enable MagneMover LITE to be used up to 10 kg payloads (~ 2 kg today)	Relased!
High Payload Switch 	Introducing new switch with full length flipper	• Increases switch capabilities to match wheeled puck • Increases layout flexibility	CY2018 Q3
TriMax™ High Performance Bearing System 	New rail and vehicle	• More flexibility for new geometries • Longer bearing life • Reduced maintenance	Released!
Single Cable Interface 	VPL based linear actuator & stage [VPAR & VPAS]	• Simplify wiring and troubleshooting • Alignment to Kinetix • Existing customer demand (ETO today)	CY2018 Q4

LISTEN.
THINK.
SOLVE.

Otázky?

Děkuji Vám za pozornost

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