

What's new in Safety Components



Chuck McLamb – Application Engineer, SYD
Joe Pickell – Components Sales Engineer, RA

Schaedler
yesco

Complete Safety Solutions



Laser Scanner



Safety Contactors



Safety PLC



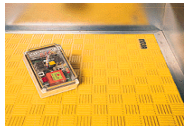
Safety Relays



E-Stops & Signaling



Light Curtains



Safety Mats



Gate Switches



Trap Key



Safety Edges



Cable Pull Switches



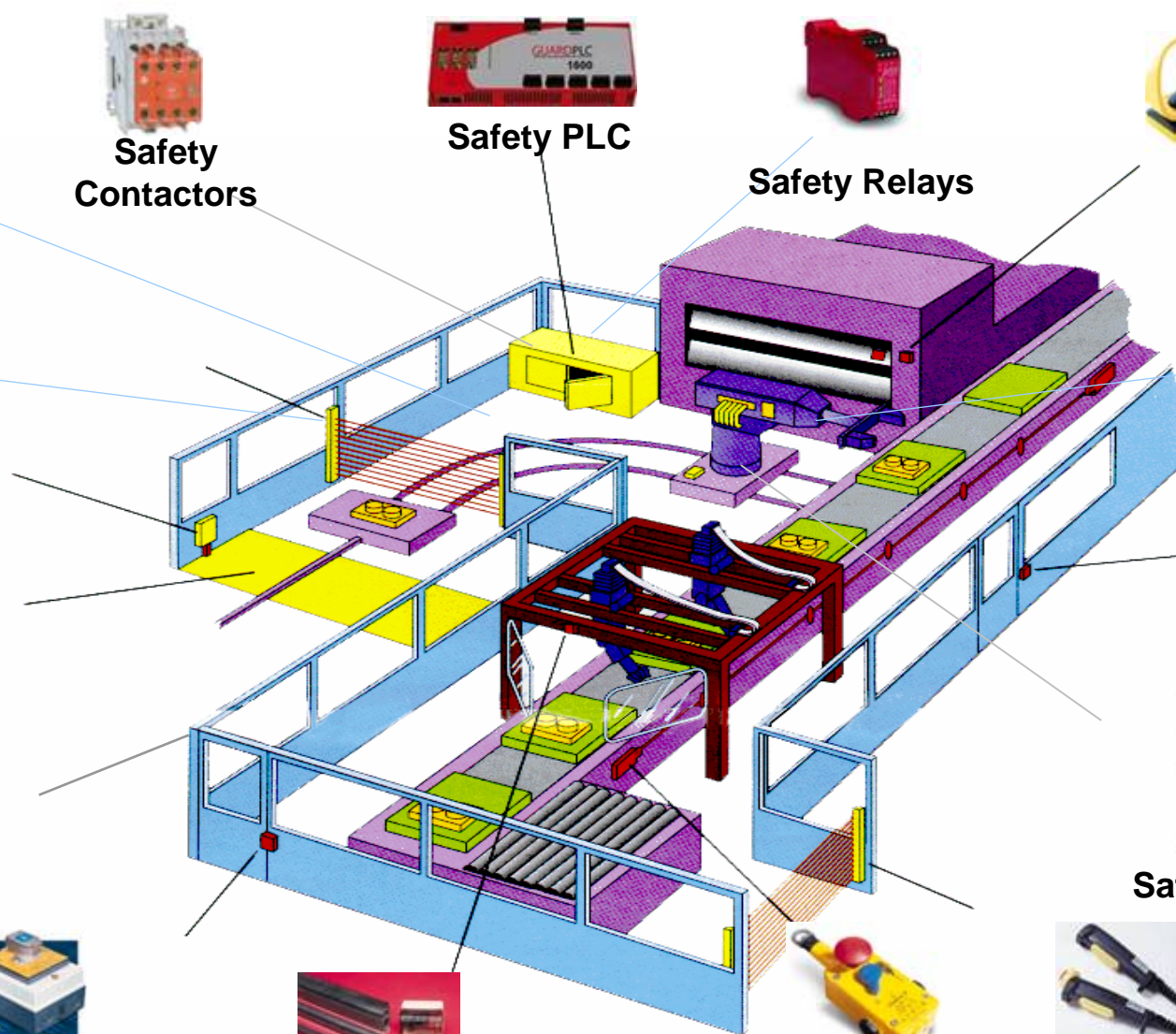
Safety Enable Switches



Non-Contact Switches



Safety Drives



N-BRADLEY • ROCKWELL SOFTWARE

ts reserved.



GuardShield Safety Light Curtain



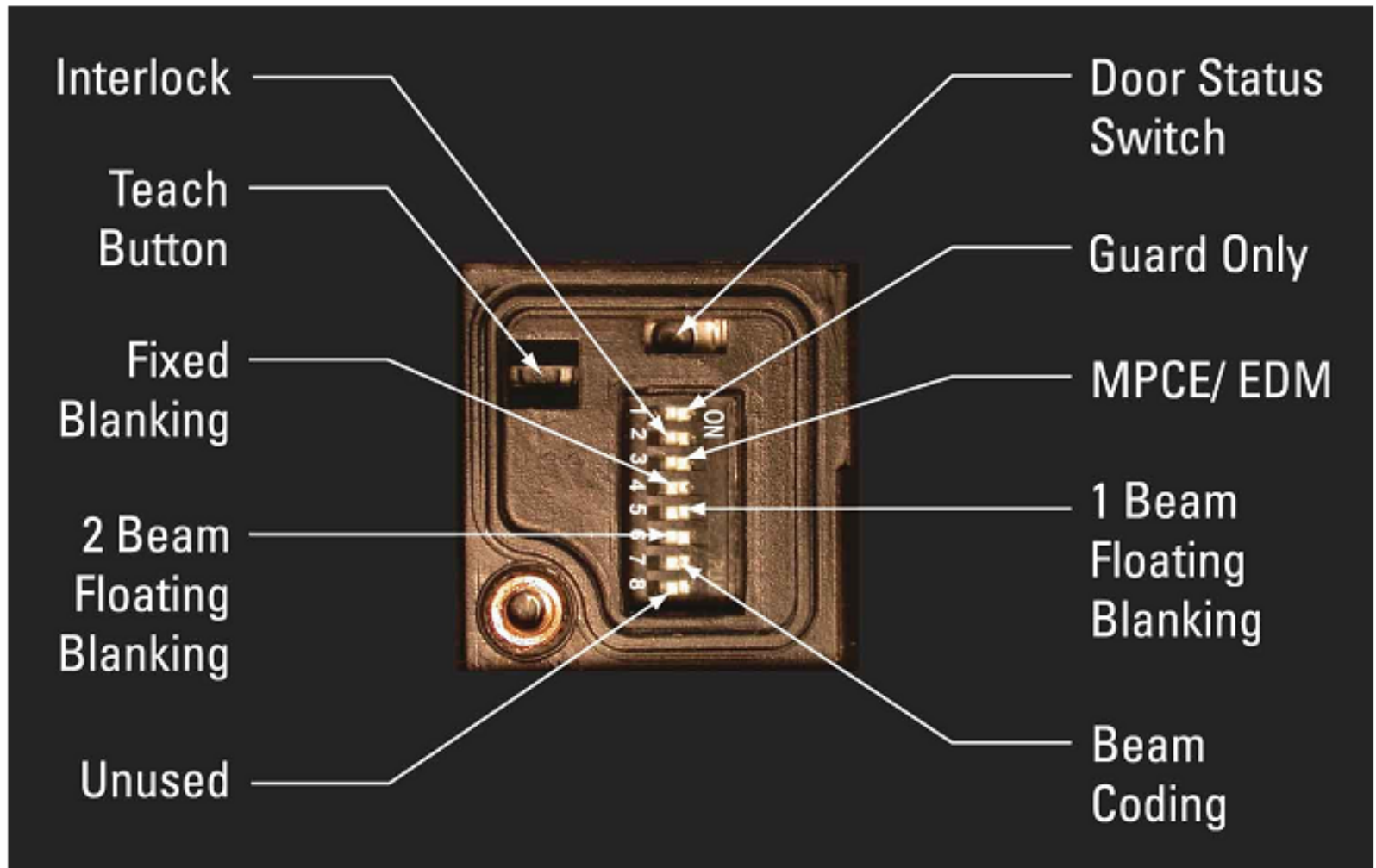
- **Economical – OEM Focused**
- **Resolutions of 14mm and 30mm**
- **Ranges of 7M and 18M**
- **Dip-Switch Selectable Operating Modes**
- **CE Approved -TUV NORD**
- **IEC61496 Parts 1 & 2**
- **Type 4 ESPE**
- **cULus 61496 Parts 1 and 2 (In process)**
- **UL 1998 (In process)**

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Receiver Dip Switches



Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

GuardShield Remote Teach



- Provides a remote means to teach and re-teach fixed blanking areas
- Targeted to customers who change “Fixed Blanking” areas one or more times per shift –Mainly Press applications
- Fixed Blanking dipswitch 4 must be in ON position
- GuardShield Receiver “learns” new fixed blanked area after die change with different object size or position in sensing field

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

GuardShield Perimeter Access Control

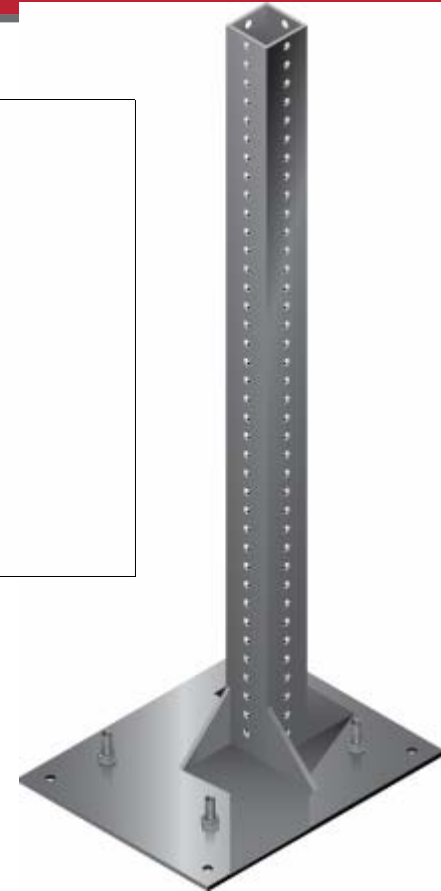
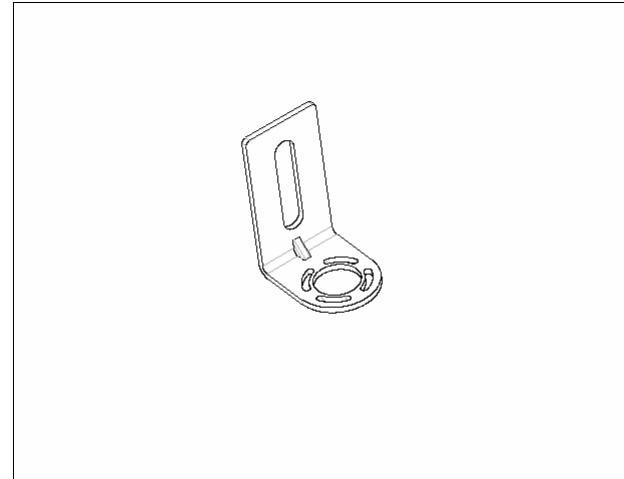
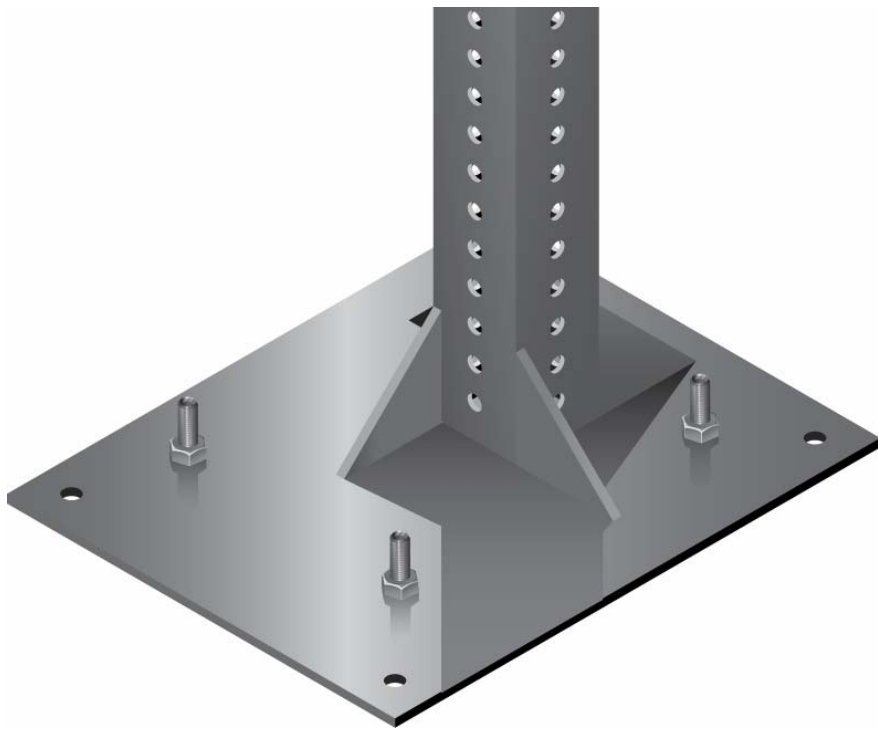
- 2 or 3 Beam Perimeter access, Type 4 safety light curtain with CE and cULus
- 500mm beam spacing
- 640mm housing, 510mm overall protective height
- Range is 0.5M to 16M
- Beam coding, EDM, Start / Restart interlock
- Competitively priced

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE



Mounting Stand



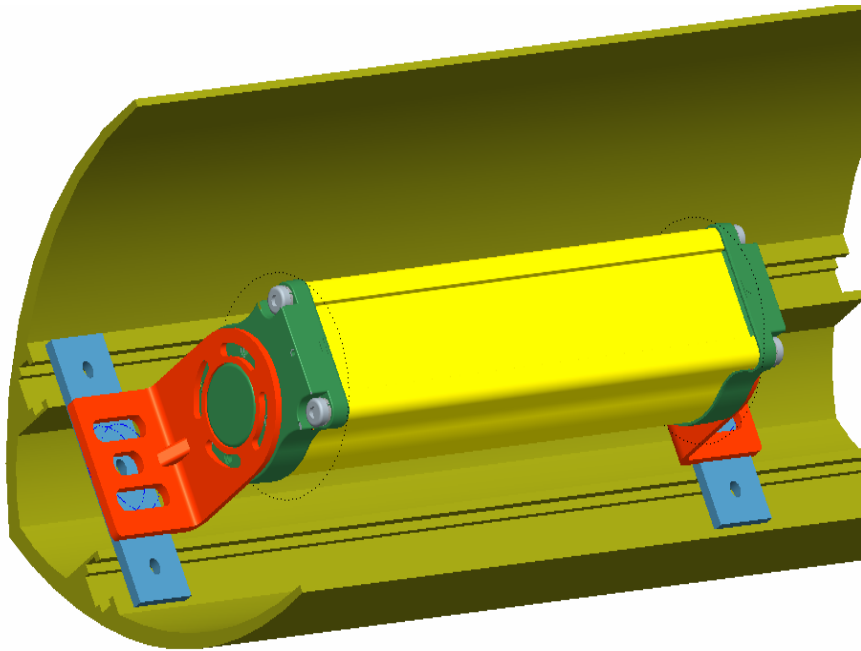
Mounting stands are used to mount safety light curtains and corner mirrors

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Mounting Column Kit



The **440L-AF6130** kit allows 2 and 3 beam GuardShield PAC safety light curtains to be attached in the mounting columns

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

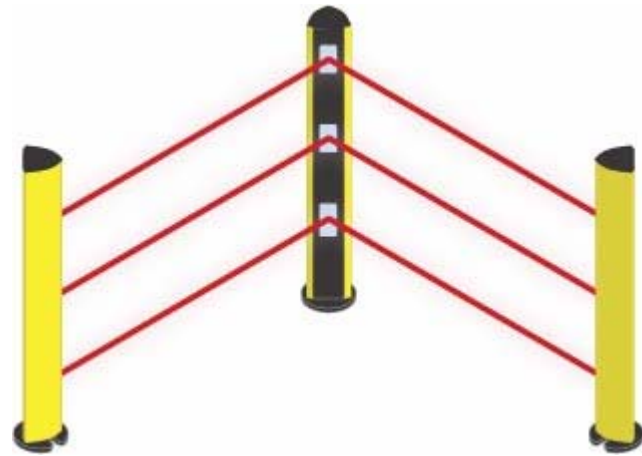
Rockwell
Automation

GuardShield PACs in Mounting Columns

Two beam GuardShield PAC 2 Sided Guarding



Three beam GuardShield PAC 2 Sided Guarding



GuardShield Part Number	Mounting Column Part Number	Mirror Column Part Number	Mounting Kit Part Number
440L-P4A3400YD	440L-AMUTSTND3B	440L-A3MIRSTND	440L-AF6130
440L-P4A2500YD	440L-AMUTSTDLP2B	440L-A2MIRSTND	440L-AF6130

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

GuardShield Connection to a DeviceNet Safety Network - Targeted AFS Q4 FY08

- GuardShield on DeviceNet Safety
 - Connection to DeviceNet Safety (Ethernet/IP Safety next)
 - Local Inputs and outputs to preserve fast response time for Point of Operation Control



Local Inputs/Outputs
Power, Reset, EDM,
OSSD

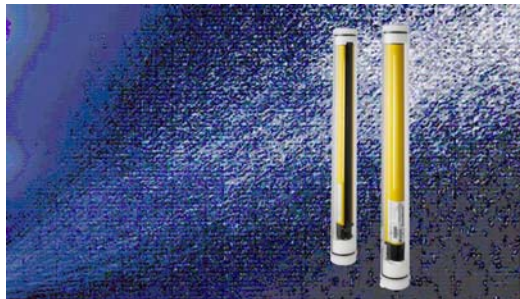
DeviceNet
Safety

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

GuardShield family IP69K Enclosure



- Accommodates GuardShield Type 4 from 320mm to 960mm protective heights and GuardShield 2 and 3 beam PAC
- Rated for 1200PSI wash down and IP69K
- Acrylic tube, acetal end caps and stainless steel mounting brackets allow positioning in areas where ingress of fluids may cause damage to the GuardShield
- Food /Beverage and other industries with wash down applications or dusty environments
- 10% loss of operating range

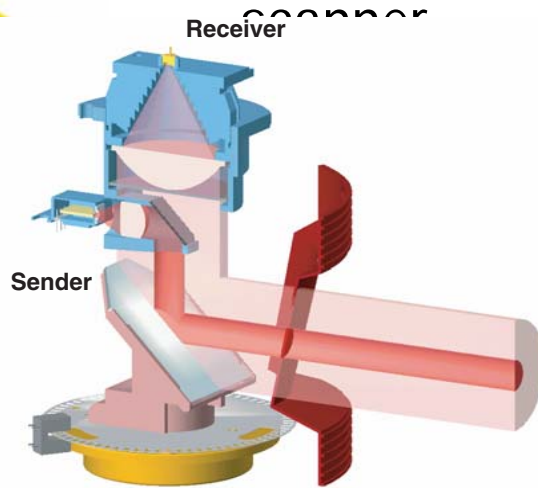
Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

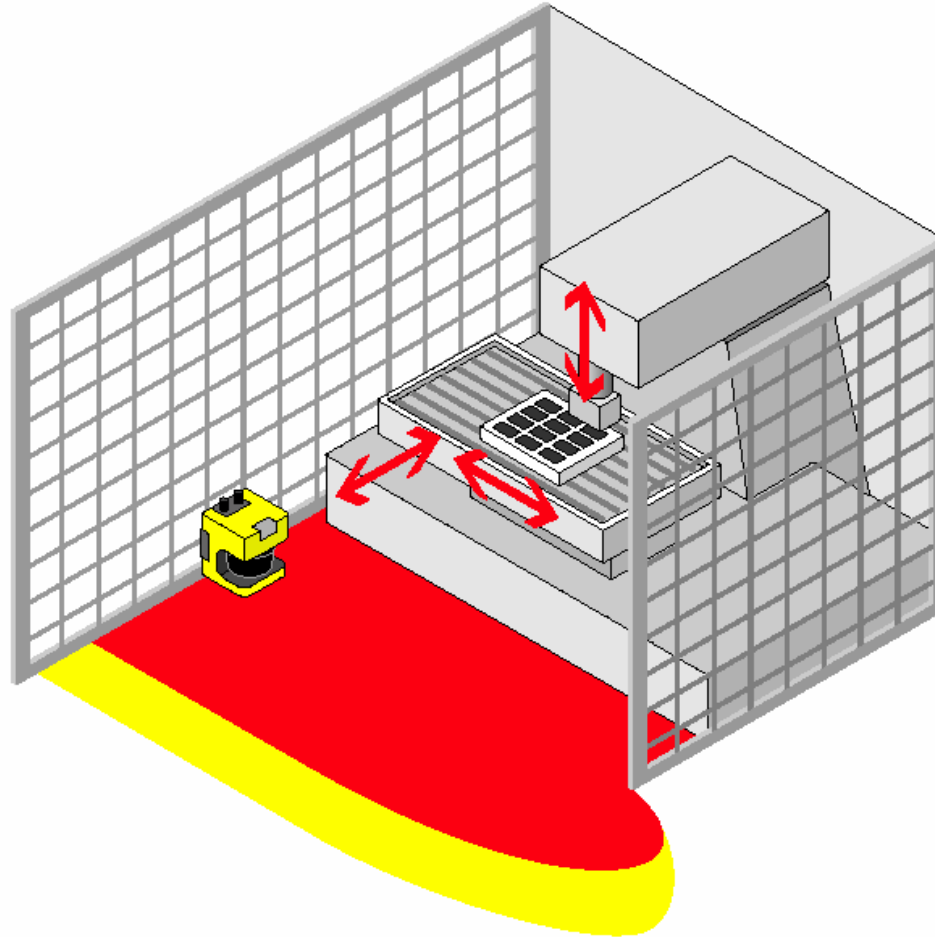
SafeZone Multizone

- Newest generation of safety laser



More Features and Functionality than
Conventional Zone
Stationary and Mobile
Horizontal mounting

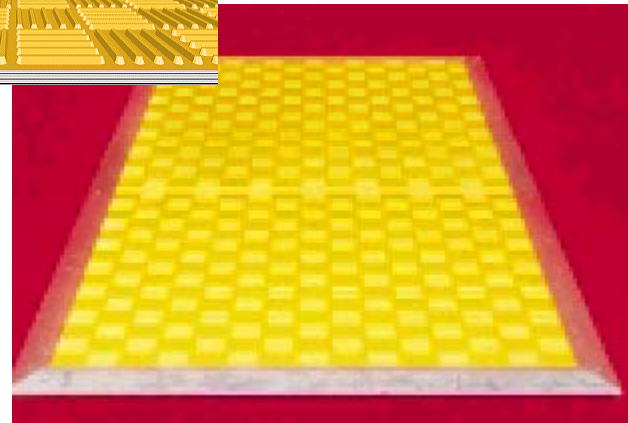
Application Examples



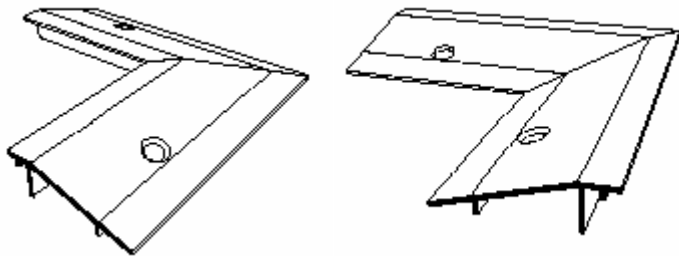
GuardMat™ Safety Mats



Controllers



Mats



Edge Trim



Uniting Trim

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

BACK

Mat Manager



- Monitors up to 8 mats
- Indicates which mat is activated (or faulty)
- Benefit -
 - reduces downtime due to easier troubleshooting
- Must use QD connectors on mats
- Likely use channel trim
 - especially with 8 mats.

Custom Mat Configurations

440F-MSYS700

These configurations were for local projects

- You supply the dimensions
- We give you one part number which includes all parts needed to make the custom Safety Mat

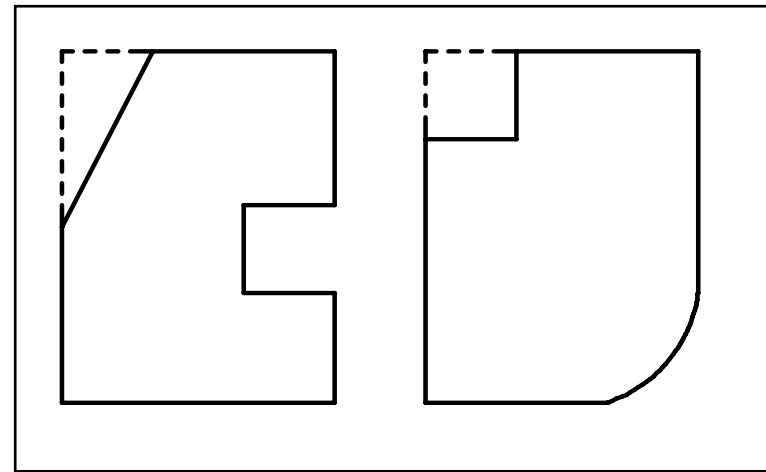
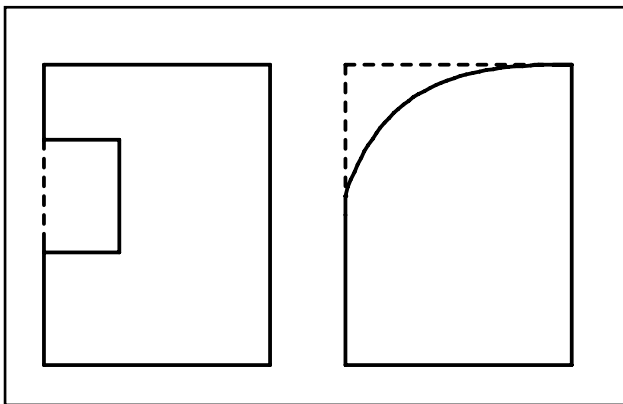
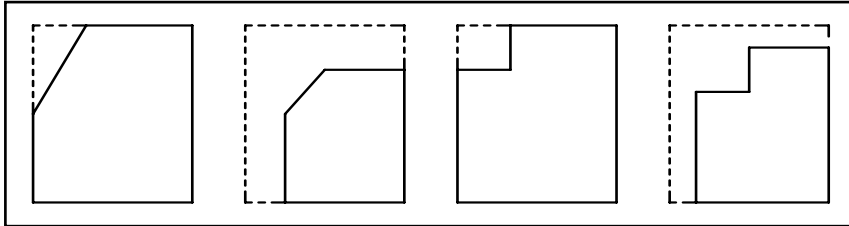
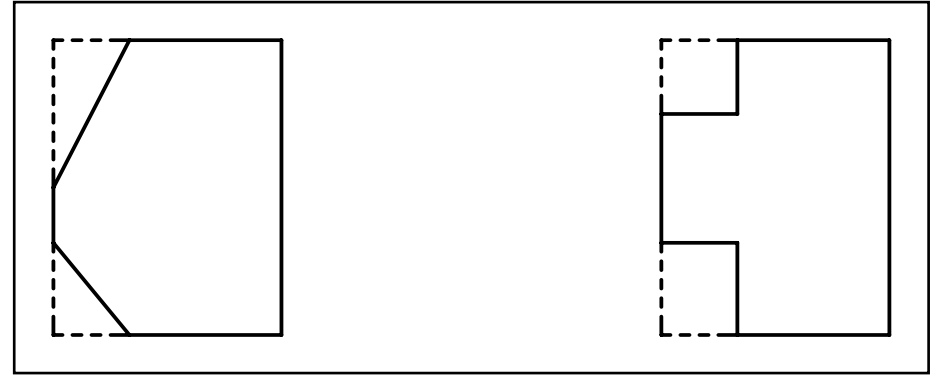
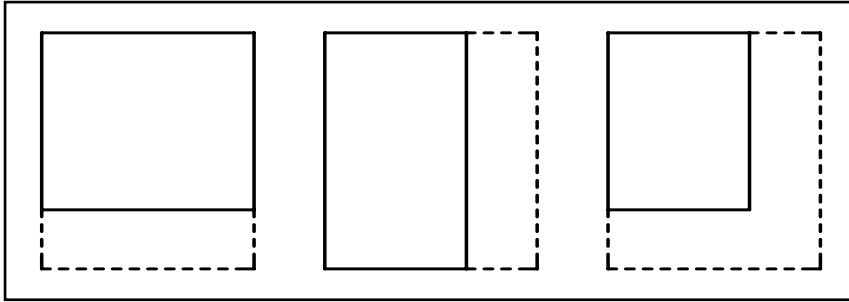
440F-MSYS639

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Custom Safety Mat Cutouts

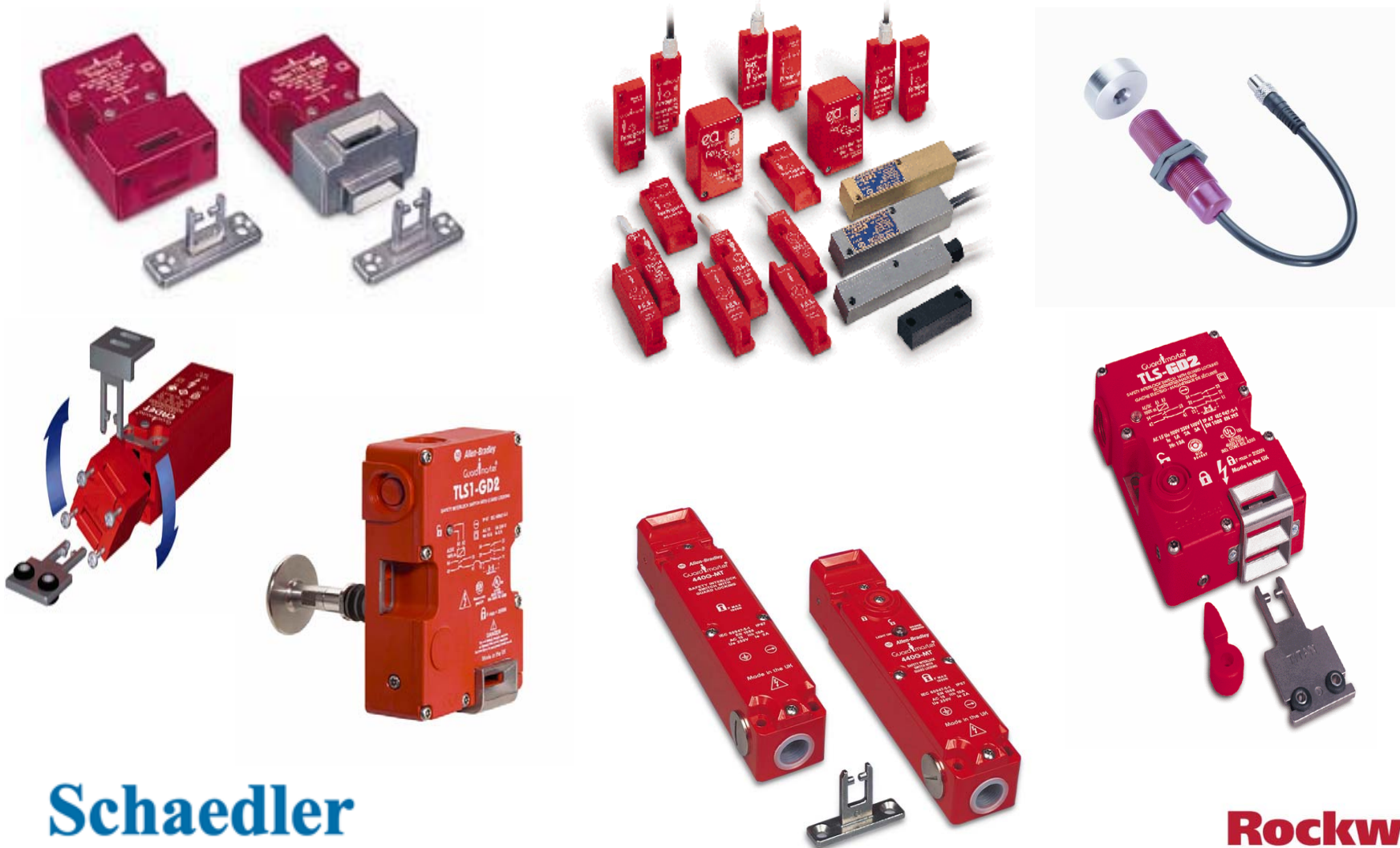


Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

SAFETY INTERLOCK SWITCHES



Schaedler
yesco

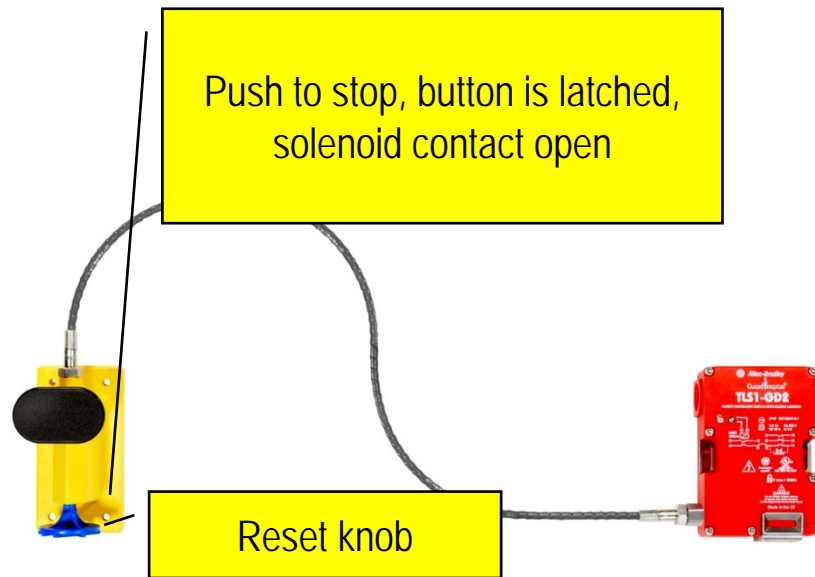
ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

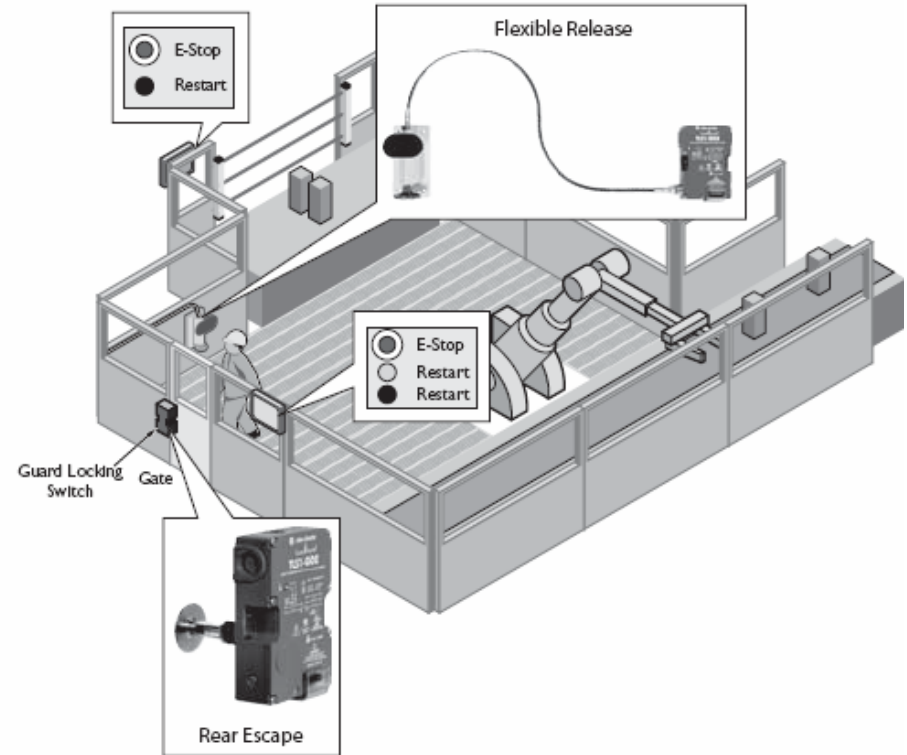
Flex Release - TLS GD2

Flex-release

- Part numbers:
 - 440G-A27356 (1M Version)
 - 440G-A27357 (3M Version)



Manual Override



Used on the TLS-1 & 3

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Slide Bolt



Part Numbers –

- 440K-AMDS - Handle
- 440K-AMDSSMPB - TLS-GD2 Mounting plate

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Enabling Switch Family

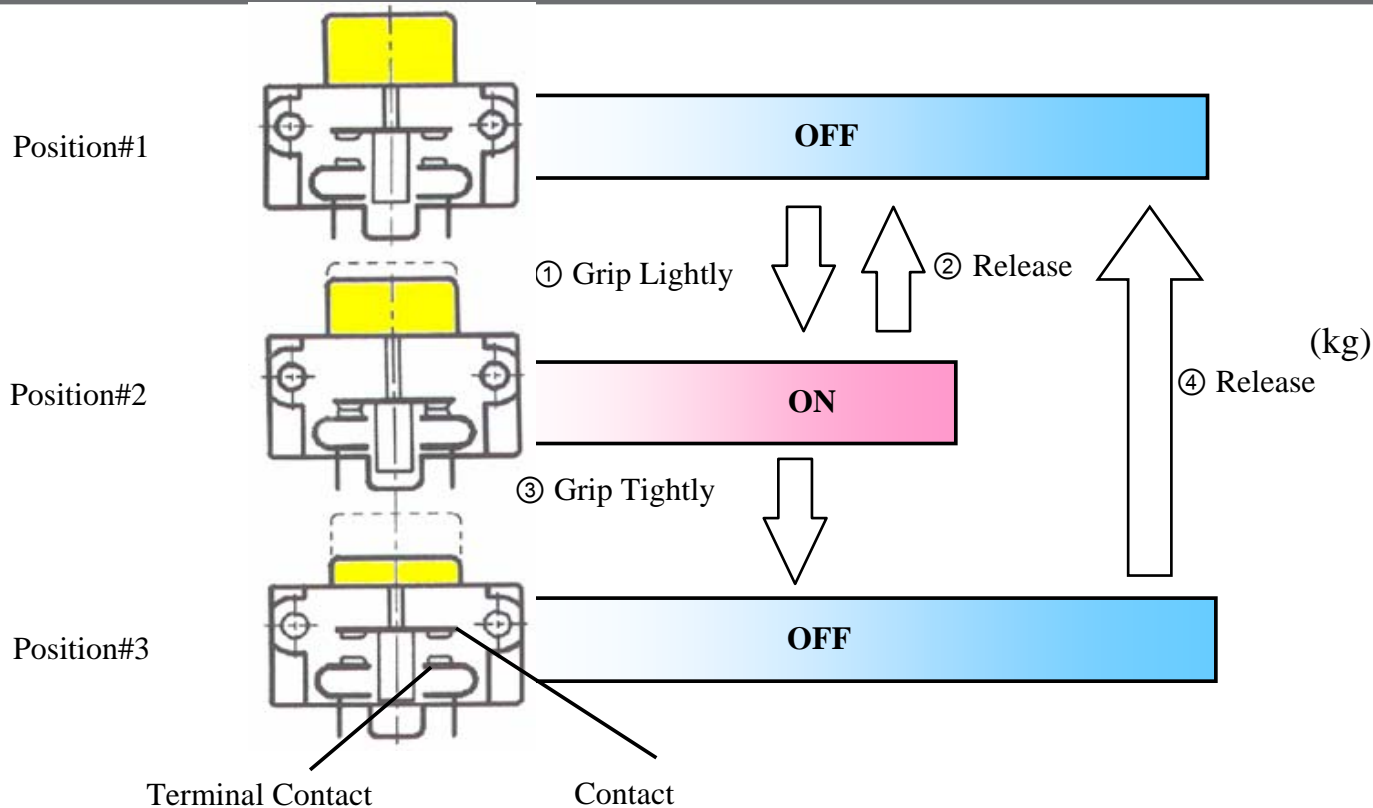


Jog button



Emergency Stop Button

Operation of Enabling Switch



OFF-ON-OFF Switching:

Usual Switch Operation: 1 Cycle ①→②

Operation in Danger: ①→② or ①→③→④

Stainless Steel Lifeline 4



Schaedler
yesco

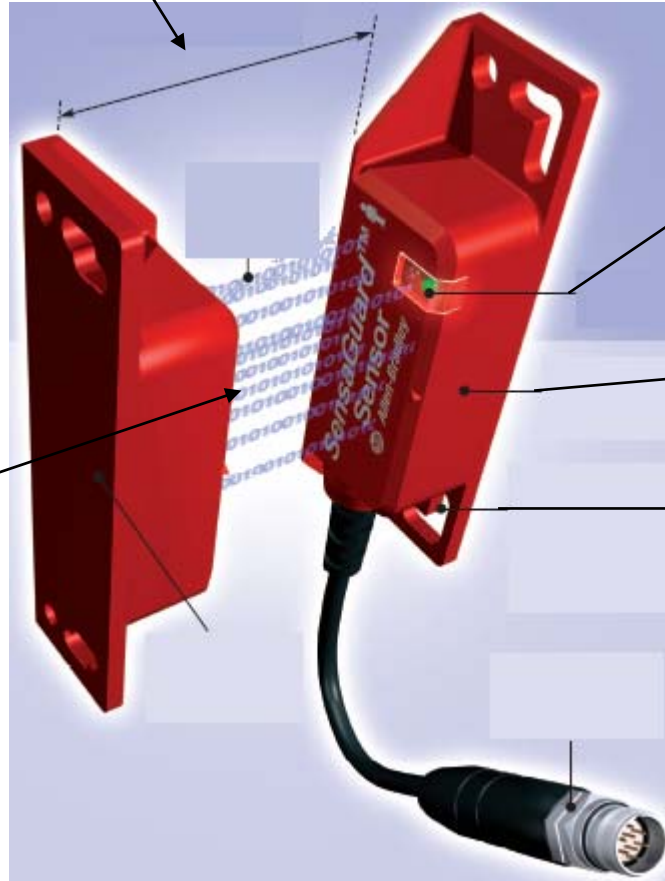
Rockwell
Automation

SensaGuard Non Contact Switch



SensaGuard RFID Interlock

Up to 25mm sensing range



LED's indicate contact status and device health

IP69 rated

Integral short circuit protection

Quick connect versions available

RFID prevents over ride

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

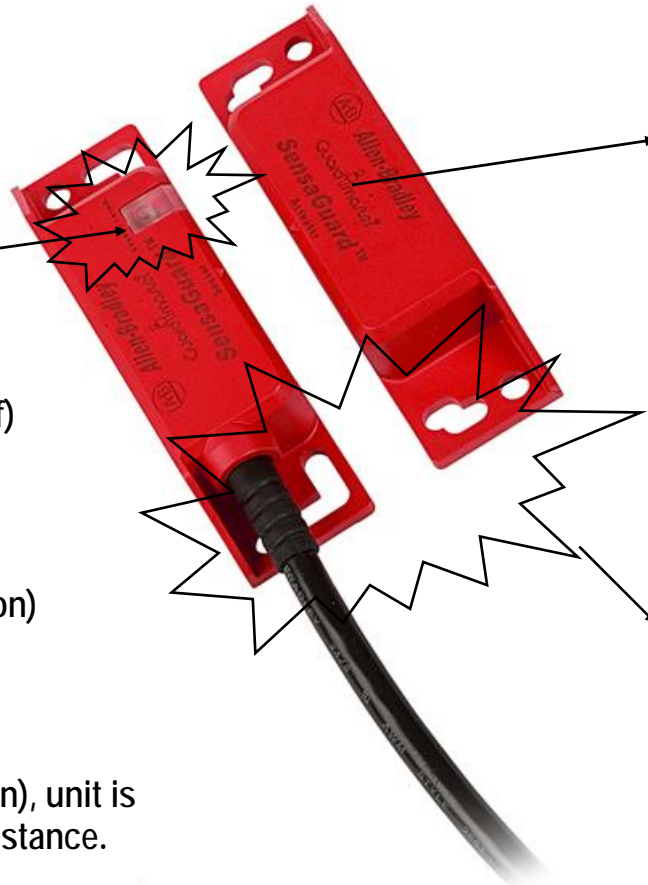
Rockwell
Automation

SensaGuard - RFP

Magnetic Hold Feature

Status/Diagnostic LED

- **Red illumination:**
 - Guard Door Open (Output off)
- **Green illumination:**
 - Guard Door Closed (Output on)
- **Amber illumination Flashing:**
 - Guard Door Closed (Output on), unit is reaching maximum sensing distance.



Laser etched:

The product information is laser etched on to the product for traceability.

Universal mount Mounting:

Same bolt hole pattern for mounting our existing Ferrogard and Sipa product as well as our competitors.

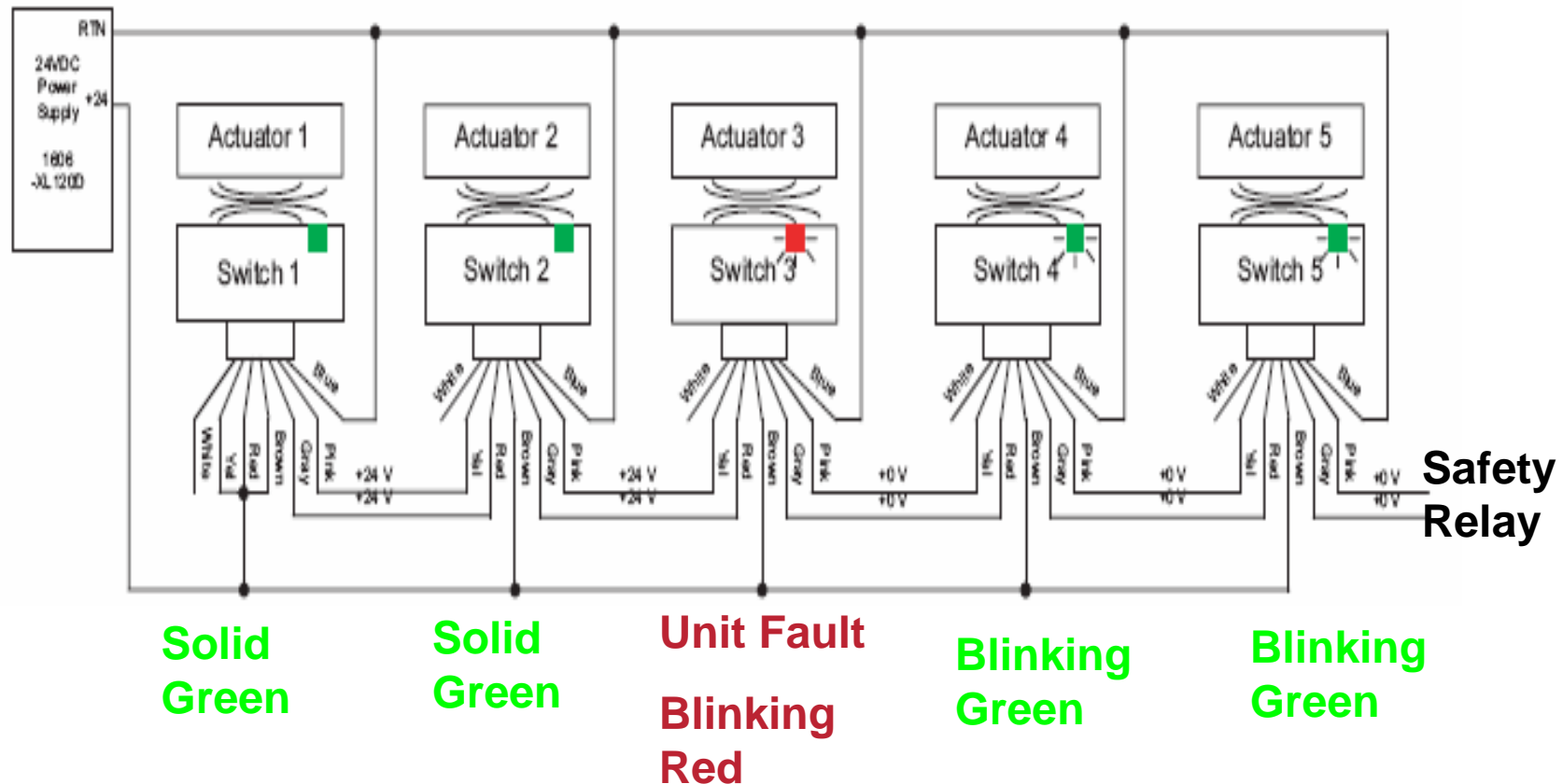
Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

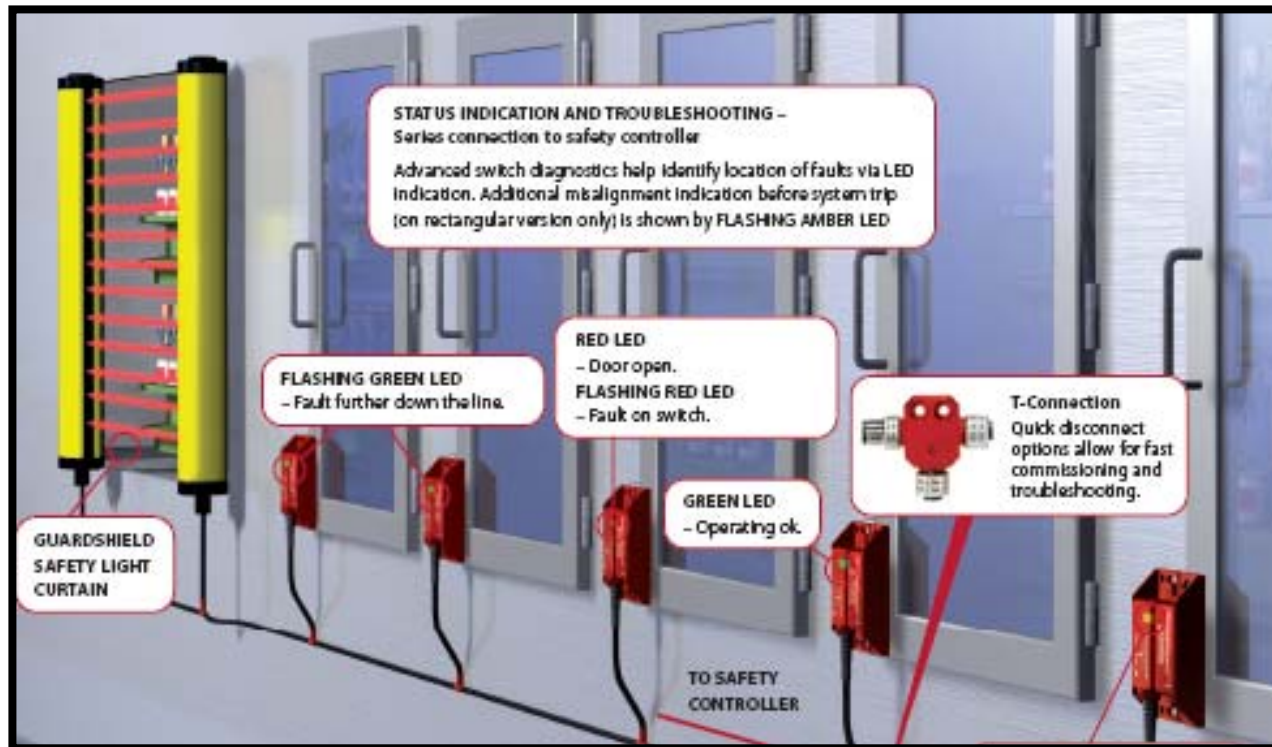
SensaGuard - Troubleshooting Series Circuit

Series Circuit

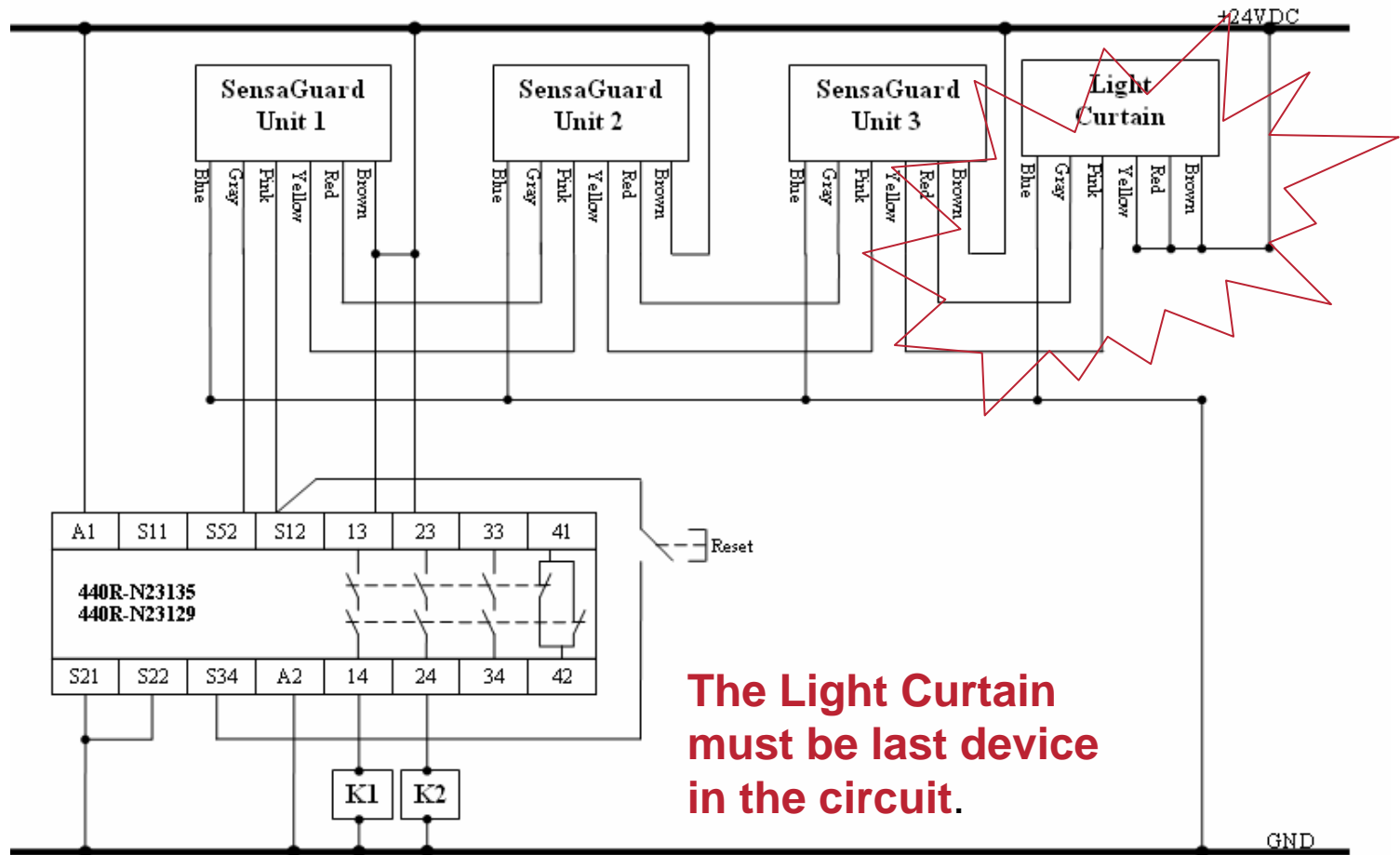


SensaGuard Quick Connect

- Quick connect system for fast installation of series connected systems



SensaGuard - Units wired in series



Up to 30 switches in series

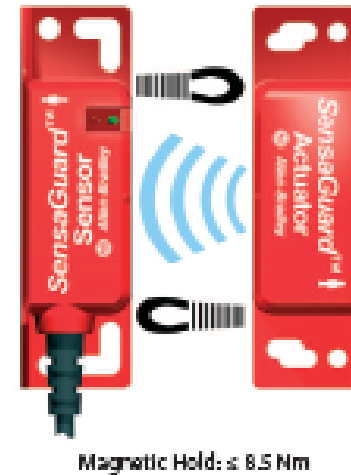
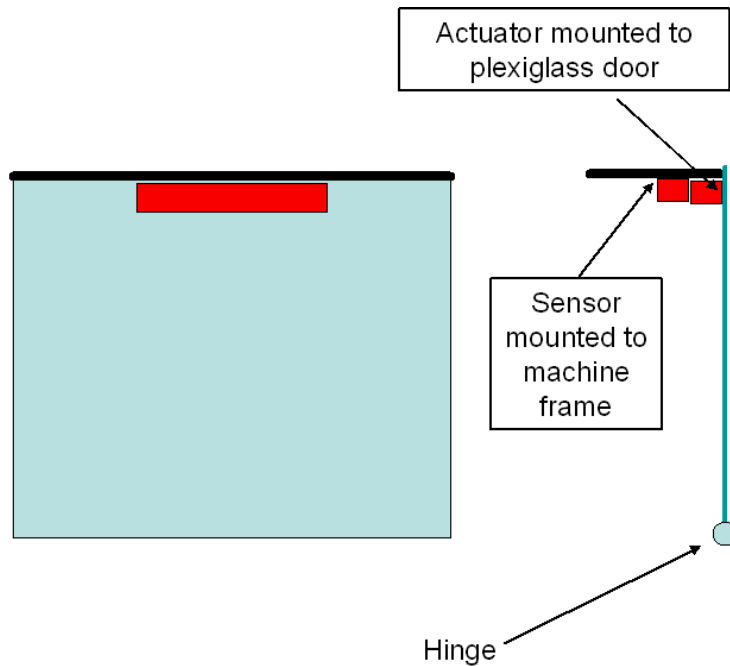
Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

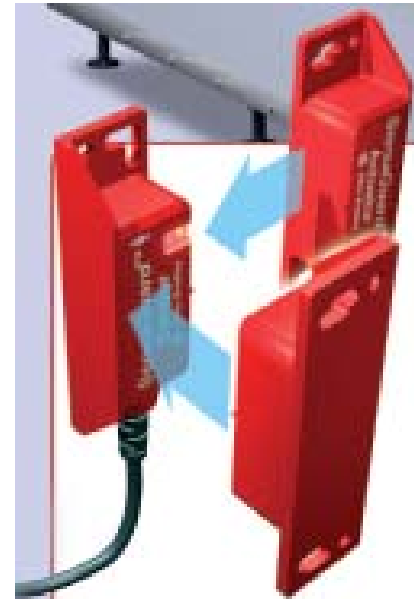
SensaGuard Magnetic Hold

- Dual functionality – safety interlock and door hold



SensaGuard - Flexible Mounting

- Multi directional operation



Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

SensaGuard - Form Factors

18mm Target



30mm Target



18mm Plastic Barrel



Product Specification:

- Assured 15mm sensing distance with 18mm target
- Assured 25mm sensing distance with 30mm target
- Safety Rating Cat 4 SIL 3
- 2 Solid State Safety outputs
- 1 Solid State Auxiliary output



Product Specification:

- Assured 10mm sensing distance
- Safety Rating Cat 4 SIL 3
- 2 Solid State Safety outputs
- 1 Solid State Auxiliary output



Product Specification:

- Assured 18mm sensing distance
- Safety Rating Cat 4 SIL 3
- 2 Solid State Safety outputs
- 1 Solid State Auxiliary output

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

SensaGuard - Mounting Brackets



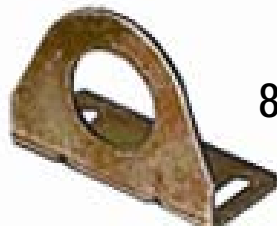
871A-SCBP18



871A-BP18



60-2649



871A-BRS18

Use Standard Proximity Mounting Brackets

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

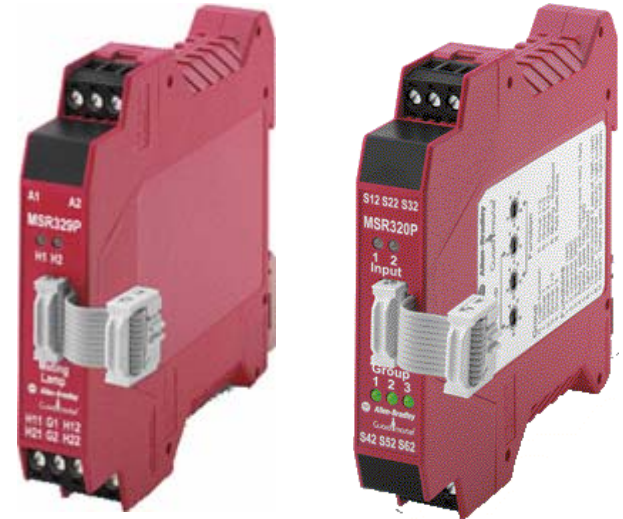
MSR300 Safety Relay System

- The modular MSR300 system offers the ability for a logic configuration with multiple inputs and control of multiple independent outputs (up to 3)
- Output modules for three groups (zone control)
- Each input module can be configured to switch one or more output groups
- Special bypass functionality for controlled access (e.g., in robot cells)
- Cat.4 EN 954-1, SIL3 IEC 61508 approvals



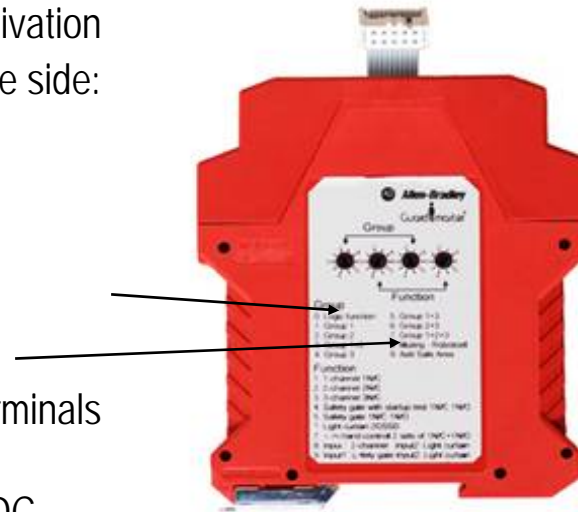
MSR300 Modules

- **Input module MSR320:**
 - Up to 10 modules per base
 - 2 configurable inputs per input module
 - 1 auxiliary solid state output per input (Channel)
 - One set of rotary switches defines the type of input device(s) connected
 - One set of rotary switches defines which output group the input module controls
- **Input module MSR329:**
Muting lamp control module, for 2 muting channels
- **Controller module MSR310:**
Dual processors control I/O modules and provide extensive diagnostic information via various interfaces and solid state outputs
- **Output module MSR330:**
 - Maximum of 6 output modules can be connected to each base module (18 N.O. + 6 N.C.)
 - Maximum of three output groups available for independent control



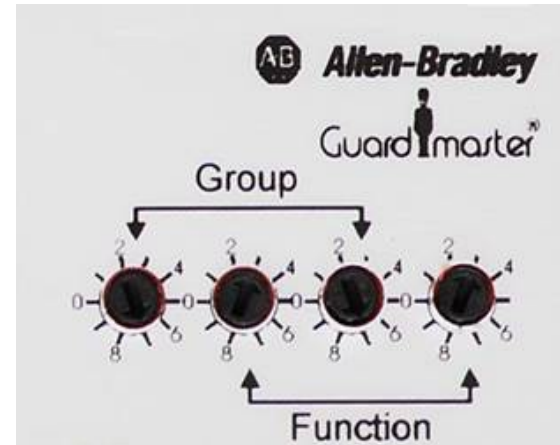
Input Module MSR320

- 2 inputs for single-, dual- or three-channel activation
- Four 10-step rotary switches on the enclosure side:
 - One set for the group selection
 - One set to configure inputs type
- Selectable "Start-up Test" function
- Light curtain (solid state) and/or safety switch (contact) inputs in one module
- 17.5mm enclosure with plug-in connection terminals (screw type)
- Annunciation for each input connected (24V DC solid state output)



Input Configuration MSR320

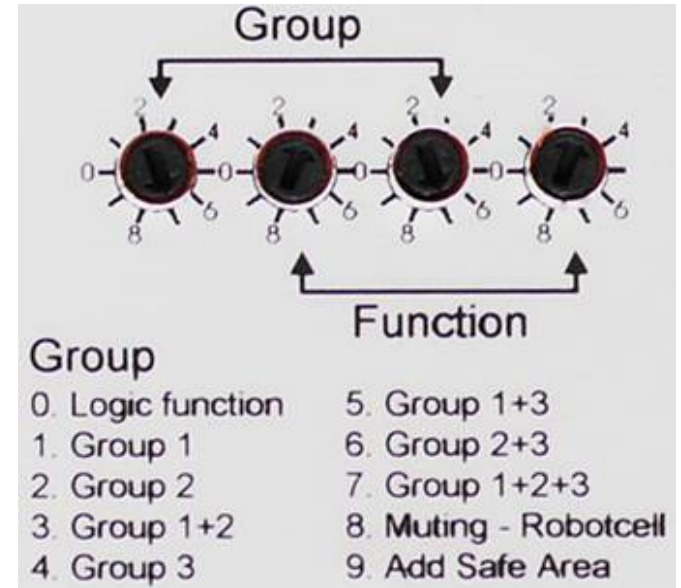
- Configuration of both inputs by “Select Function” switches (both channels must be set on the same value)
 1. One-channel E-stop
 2. Two-channel E-Stop or safety mats
 3. Three-channel E-Stop
 4. Safe gate (N.O./N.C.) with start up test
 5. Safe gate (N.O./N.C.) without start up test
 6. Light curtain (both Inputs)
 7. Two-Hand operation
 8. Channel 1: Two channel E-Stop
Channel 2: Light curtain
 9. Channel 1: Safety gate
Channel 2: Light curtain



Group	
0. Logic function	5. Group 1+3
1. Group 1	6. Group 2+3
2. Group 2	7. Group 1+2+3
3. Group 1+2	8. Muting - Robotcell
4. Group 3	9. Add Safe Area
Function	
1. 1-channel 1N/C	
2. 2-channel 2N/C, Safety Mat	
3. 3-channel 3N/C	
4. Safety gate with startup-test 1N/C 1N/O	
5. Safety gate 1N/C 1N/O	
6. Light curtain 2OSSD	
7. Two-hand control 2 sets of 1N/C+1N/O	
8. Input1: 2-channel Input2: Light curtain	
9. Input1: Safety gate Input2: Light curtain	

Group Selection MSR320

- Group Selection by “Select Group” switches (both channels must be set on the same value)
0. Logic function
 1. Group 1
 2. Group 2
 3. Group 1+ 2
 4. Group 3
 5. Group 1+ 3
 6. Group 2+ 3
 7. Group 1+ 2+ 3
 8. (Input 1 or Group 1) & (Input 2 or Group 2) = Group 3 (Muting with cross control)
 9. ((Input 1 or Group 1) & (Input 2 or Group 2)) or Input “Safe Area” = Group 3 (Meaning: Inputs are closed or Group1/2 is activated, etc. = activation of Group 3 to run the machine)



MSR300 Advantages

- Modular design meets numerous I/O applications
- Maximum of 20 inputs per base module
- Maximum of 18 N.O. and 6 N.C. auxiliary contacts
- Input modules can be configured for multiple input devices with one part number
- Output modules allow customers to control up to 3 independent or dependent zones – muting (e.g., in robot cells)
- DeviceNet base option, for monitoring only



Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

MSR312 Base and MSR338 Delayed Output

- **MSR312**
 - Same as MSR310 but with DeviceNet communication instead of RS232
 - More cost effective for single zone DeviceNet applications than using MSR200 system
 - No inputs / no safety outputs
 - 440R-W23220
- **MSR338**
 - Similar to MSR238 delayed output module
 - 3 N.O. Safety Outputs, 1 NC aux
 - 0 to 300 sec jumper configurable
 - 440R-W23224 Group 1 Delayed Module
 - 440R-W23225 Group 2 Delayed Module
 - 440R-W23226 Group 3 Delayed Module



Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL AUTOMATION

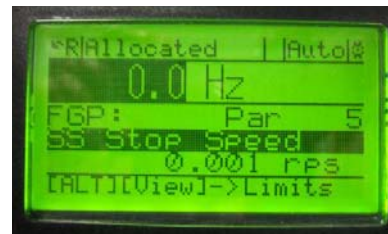
Rockwell
Automation

MSR57 Speed Monitoring Relay

- Key Impact
 - First Rockwell solution for Safe Speed monitoring
 - RA offers more than just Safe Off
- Main Features supported
 - SIL3, Cat 4
 - Up to 2 encoders (TTL and Sin/Cos)
 - Safe inputs for Safety component products
 - Utilizes same HIM module and software used for PF70 drives (Drive Explorer and DPI hardware tools)
 - Monitors and controls standard and safety drives
 - Multi-axis applications
 - Door control to prevent access to hazard when unsafe
 - Allows access during safe speed conditions
 - Performs shutdown during over-speed conditions
 - Ideal for new and existing installations
- Key Applications
 - Roller Coaster Rides
 - Ski lifts
 - Tire industry
 - Web machines
 - Robot cells

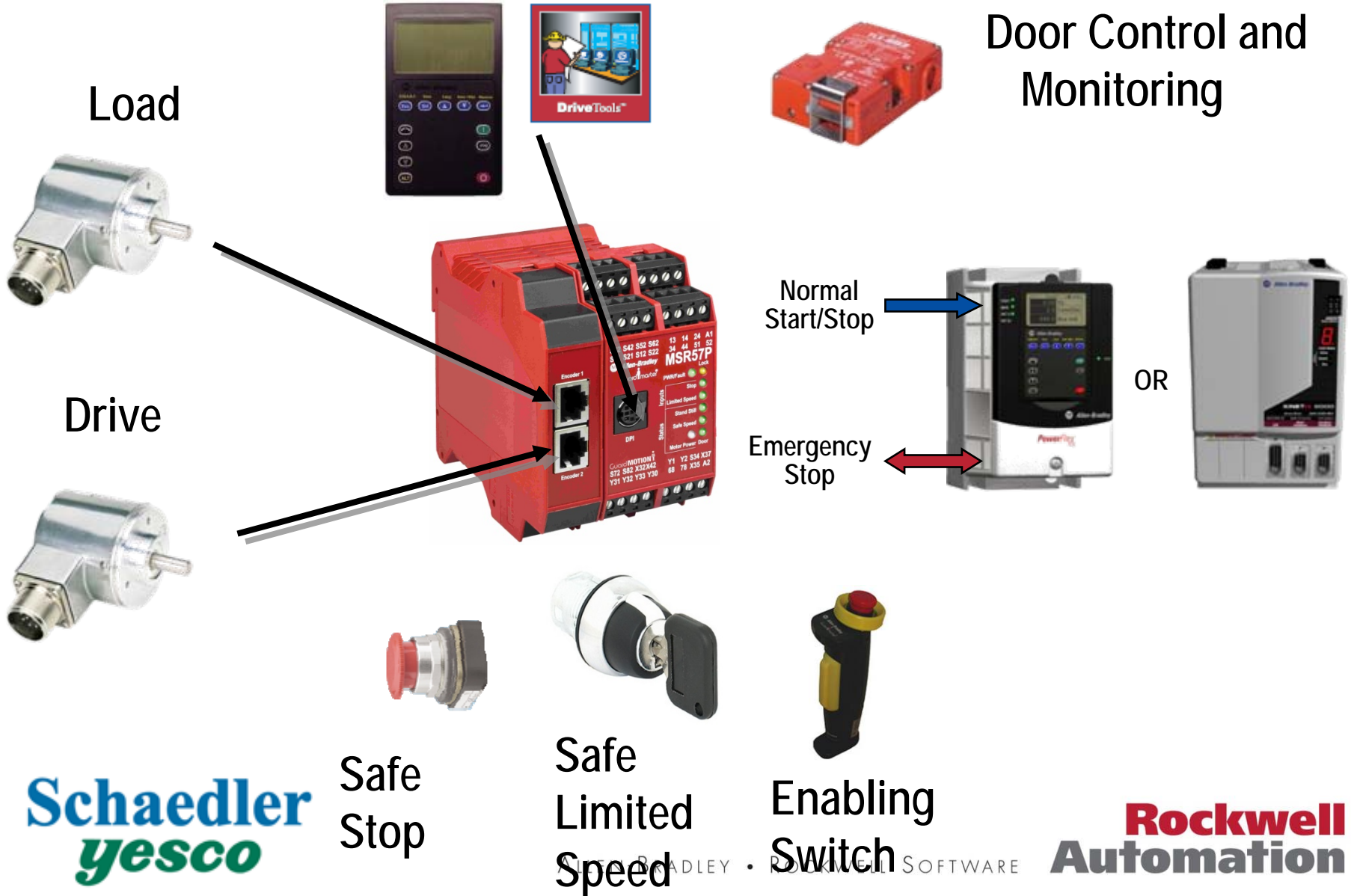


Schaedler
yesco

A screenshot of the Drive Explorer Beta software interface. The window title is "Drive Explorer Beta". The interface shows a tree view of devices and a table of parameters. The table has columns for Name, Value, and Units. The parameters listed are: 1: 0.1 (SS Input Type, Not Used), 1: 0.2 (SS Stop Type, SS 0 spd ck), 1: 0.3 (SS Monitor Delay, 0.0, Sec), 1: 0.4 (SS Stop Delay, 0.0, Sec), 1: 0.5 (SS Stop Speed, 0.001, rps), 1: 0.6 (SS Stop Pos, 10, line), 1: 0.7 (SS Decel Spd, 0, lpr), and 1: 0.8 (SS Decel Tol, 0, %). The bottom of the window shows "For Help, press F1" and "Local DPI".

Name	Value	Units
1: 0.1	SS Input Type	Not Used
1: 0.2	SS Stop Type	SS 0 spd ck
1: 0.3	SS Monitor Delay	0.0 Sec
1: 0.4	SS Stop Delay	0.0 Sec
1: 0.5	SS Stop Speed	0.001 rps
1: 0.6	SS Stop Pos	10 line
1: 0.7	SS Decel Spd	0 lpr
1: 0.8	SS Decel Tol	0 %

Product Connectivity - Single Axis



Product Connectivity - Multi-Axis

1st Axis



2nd Axis

Optional



3rd Axis

Optional



Door Control and Monitoring



Cascaded Signals



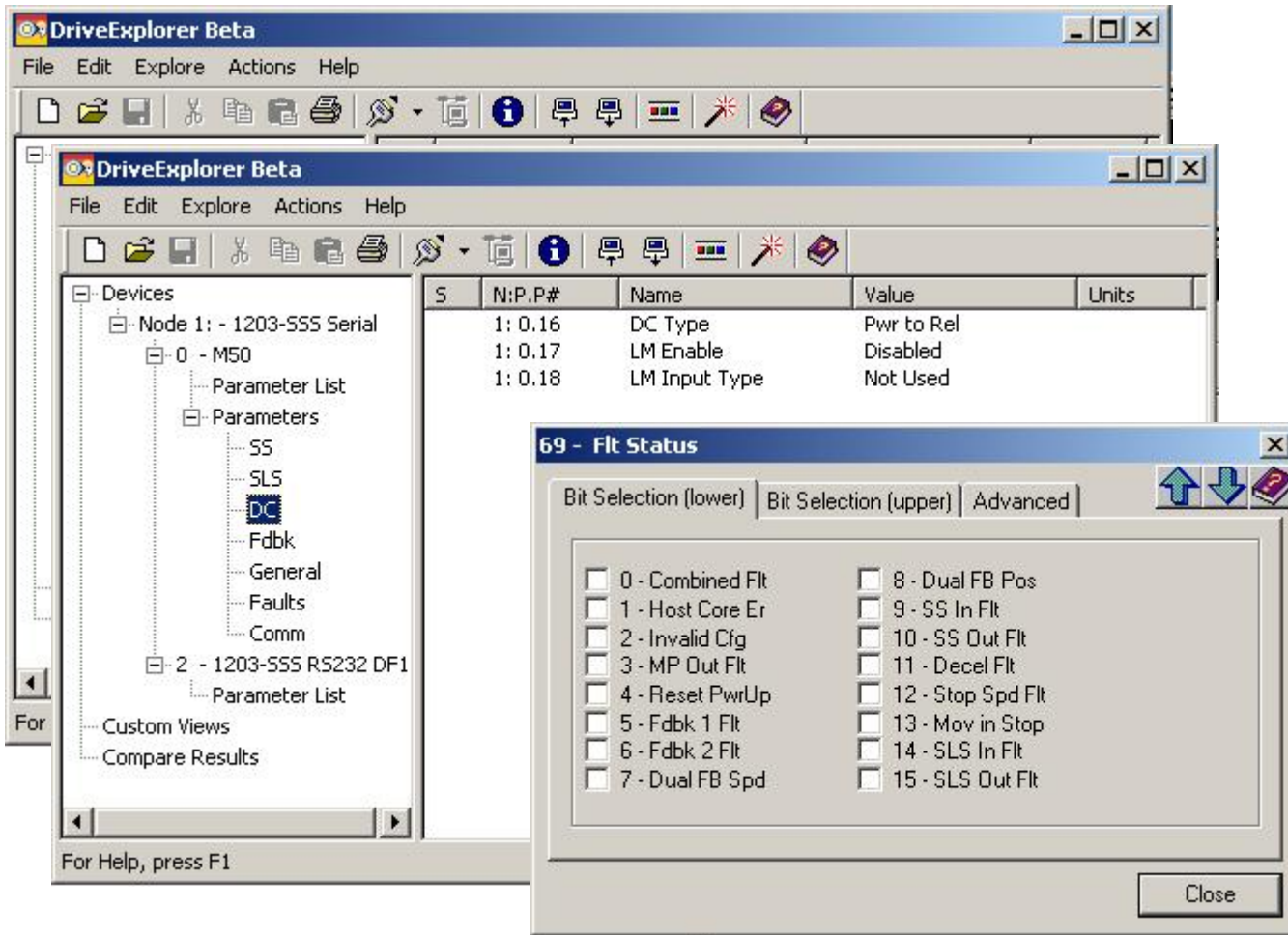
Cascaded Signals



Supported Functions

	Rating
Safe Torque Off	Cat4/SIL3/PL=e
Zero Speed Monitoring	Cat4/SIL3/PL=e
Safe Stop 1	Cat4/SIL3/PL=e
Safe Stop 2	Cat4/SIL3/PL=e
Safe Limited Speed	Cat4/SIL3/PL=e
Safe Maximum Speed	Cat4/SIL3/PL=e
Safe Direction Monitoring	Cat4/SIL3/PL=e
Safe Control & Monitoring of Door Locking Device	Cat4/SIL3/PL=e
Safe Door Monitoring	Cat4/SIL3/PL=e
Enabling Switch Monitoring	Cat4/SIL3/PL=e
Safe Acceleration Monitoring	Cat4/SIL3/PL=e

Drive Explorer



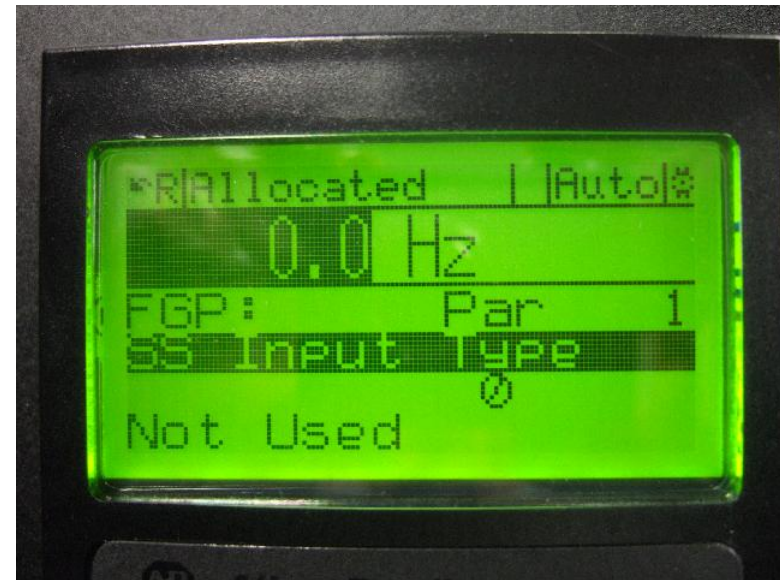
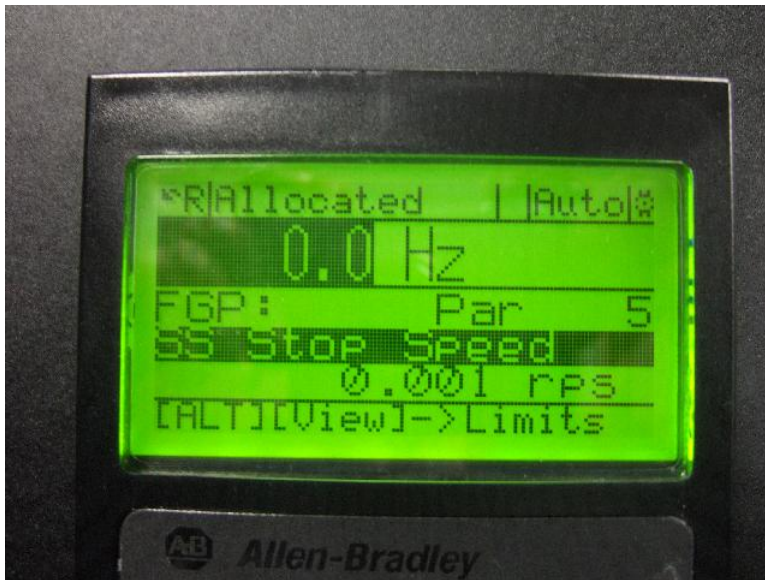
Drive Explorer

The screenshot shows the Drive Explorer Beta application window. The main window has a menu bar (File, Edit, Explore, Actions, Help) and a toolbar. On the left is a tree view under 'Devices' showing a hierarchy: Node 1: - 1203-SSS Serial, 0 - M50, Parameter List, Parameters, SS, SLS, DC, Fdbk, General, Faults, Comm, 2 - 1203-SSS RS232 DF1, Parameter List, Custom Views, and Compare Results. The main area displays a table of parameters:

S	N:P.P#	Name	Value	Units
*	1: 0.1	SS Input Type	Not Used	
*	1: 0.2	SS Stop Type	SS 0 spd ck	
*	1: 0.3	SS Monitor Delay	0.0	Sec
*	1: 0.4	SS Stop Delay	0.0	Sec
*	1: 0.5	SS Stop Speed	0.001	rps
	1: 0.6	SS Stop Pos	10	line
	1: 0.7	SS Decel Spd	0	lpr
	1: 0.8	SS Decel Tol	0	%

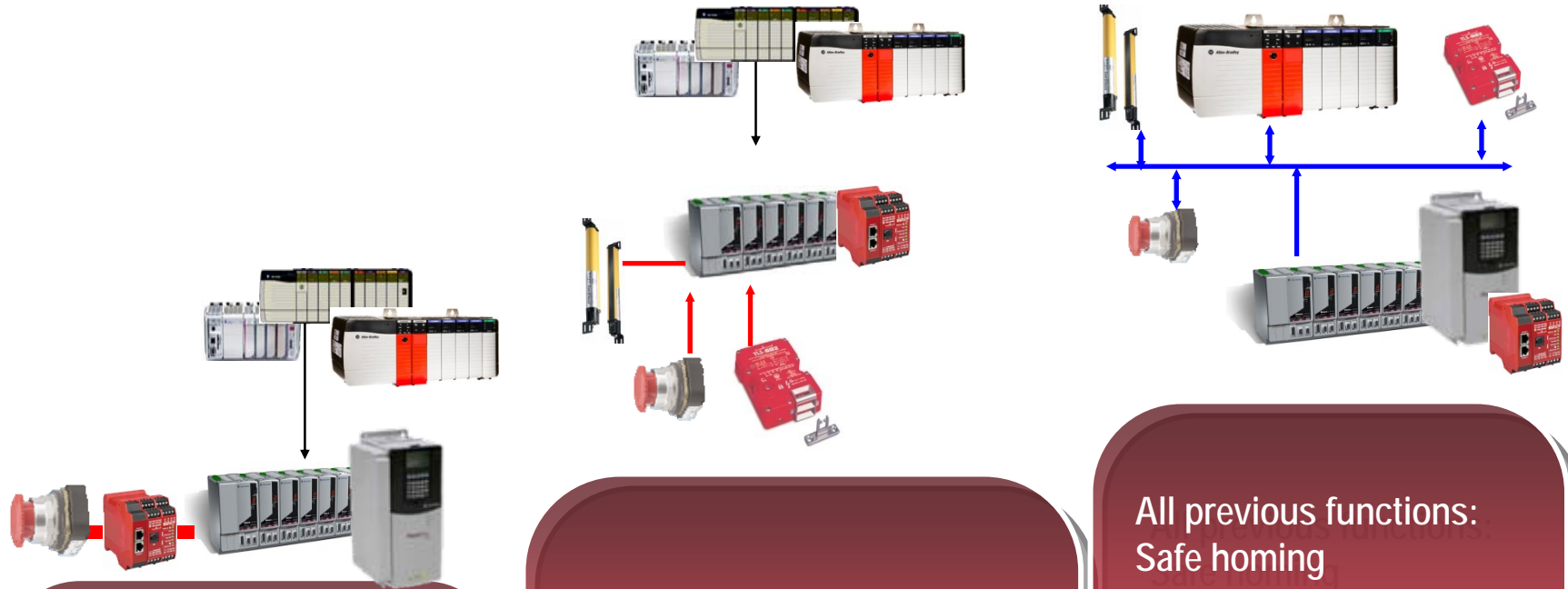
An 'Advanced' dialog box titled '1 - SS Input Type' is open, showing a 'List Selection' tab. It features a dropdown menu for 'Value' (set to 'Not Used') and a list for 'Internal Value' (with 'Not Used' selected). Other fields include 'Min' (0), 'Max' (6), and 'Default' (0). Buttons for 'Read', 'Select Default', 'OK', 'Cancel', and 'Apply' are visible.

HIM Screen Shots



The Roadmap

Safety Integration



Safe torque off
 Safe Direction
 Safe Limited Speed
 Enabling Switch Control
 Safe stop (cat 0,1,2)
 Zero Speed Monitoring
 Safe Maximum Speed
 Door monitoring and control
 Prevention un-expected start
 Multi axis safety wiring system

All previous functions:
 Integral 2ch monitoring
 Safe jog
 Security functions

All previous functions:
 Safe homing
 Safe position monitoring
 Safety network integration
 Dynamic change of safety Parameters
 Virtual perimeter guarding

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation
 Flexibility

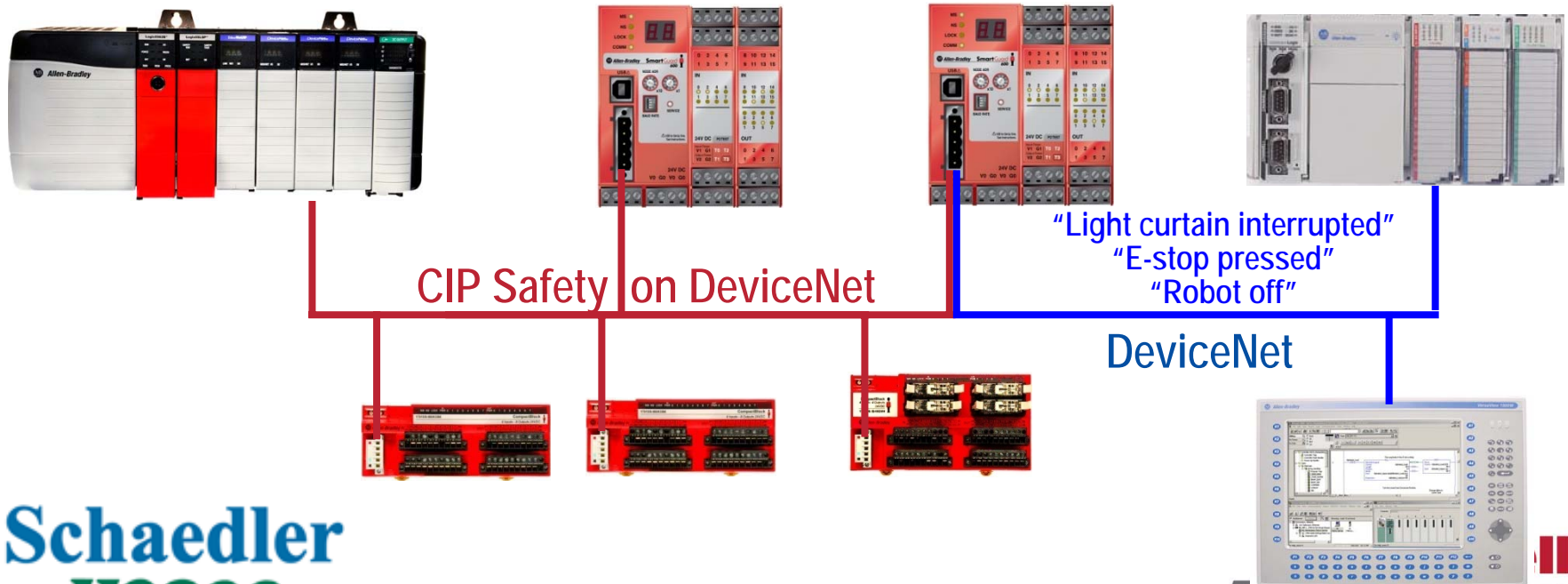
SmartGuard 600

- Small safety controller
- 16 IN / 8 OUT / 4 pulse test sources
- CIP Safety on DeviceNet
 - Up to 32 connections (DIO blocks)
 - Same DIO as GuardLogix
- USB port for DeviceNet configuration and programming
- Programs via editor launched from within RSNetWorx™
 - Uses RSNetWorx to configure DeviceNet
- Certified SIL 3, Category 4, UL NRGF, UL Class I Div 2



SmartGuard DeviceNet Capabilities

- [Safety Master] SmartGuard controls Safety DIO
- [Safety Slave] Safety interlocking between SmartGuard, GuardLogix, and GuardPLCs
- [Standard Slave] Pass diagnostic status to standard PLC or HMI



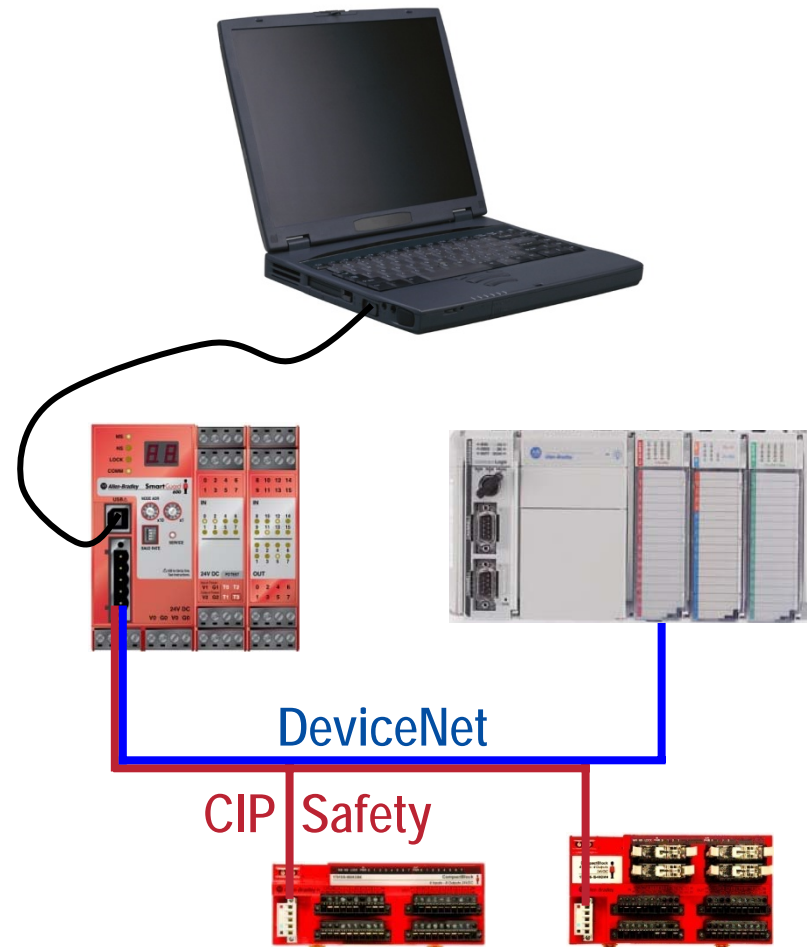
Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Automation

SmartGuard USB Port

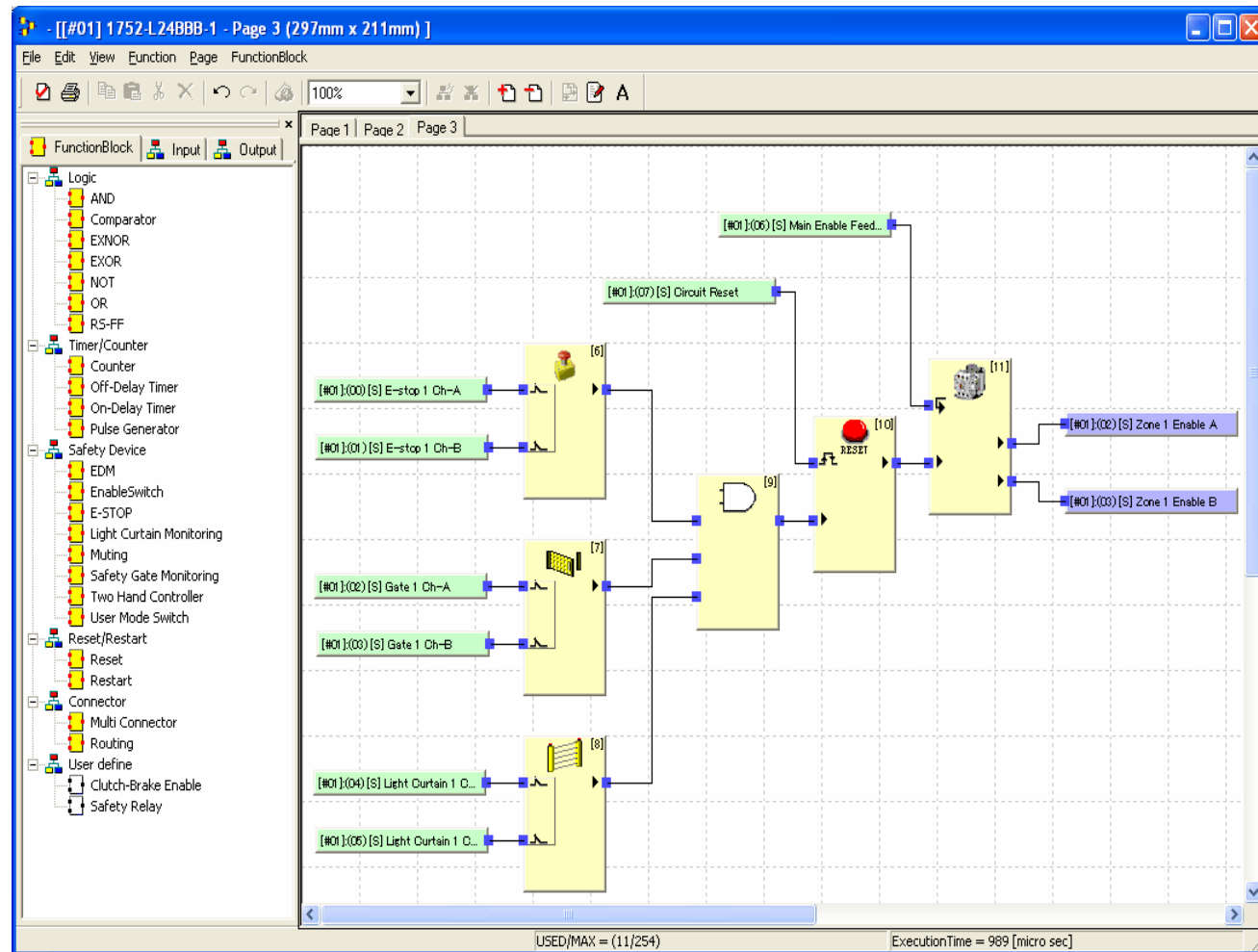
- Program the SmartGuard with RSNetWorx for DeviceNet
- Configure the SmartGuard DeviceNet parameters
- Configure other devices on DeviceNet
 - Limited pass-through capabilities allow you to configure the other devices on DeviceNet, not just the SmartGuard!
- Can also use DeviceNet connection to program and configure the SmartGuard
 - PC connected to Ethernet bridging through an ControlLogix ENBT and DNB modules



Programming in RSNetWorx

- Programs via editor launched from within RSNetWorx
 - Uses RSNetWorx to configure DNet
- Simple function block programming
- Program can be as large as 254 function blocks across 32 pages
- Drag-and-drop function blocks as well as connections between function blocks

Schaedler
yesco



GuardLogix Integrated Safety



One Platform now does it all

- Standard Control and Safety Control in **one** controller
- Standard Controllers and Safety Controllers in a **common** chassis
- Standard Control and Safety Control on **common** networks



Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Safety Integrated Logix - GuardLogix



- **Enhanced ControlLogix Processor with Integrated Safety Partner creates a SIL 3 capable controller**
- **RSLogix5000**
 - Safety Task automatically created with tools that restrict user to Safety functions
 - Single controller view
- **Standard Control Task(s)**
 - Same functionality that exists today with ControlLogix (V16)
- **Safety Control - Safety Task**
 - Restricted set of features and functions
 - Safety Certified Standard Instructions
 - Safety Certified Application Instructions
 - Security (Safety Task Signature, Locking)
 - Safety I/O automatically mapped into safety memory

The screenshot shows the Rockwell Studio 5000 software interface. The project tree on the right side is expanded to show the 'Controller TrainingDemo' project. The 'SafetyTask' folder is highlighted with a red box. Below the tree, a table shows the details for the selected 'SafetyTask'.

Type	1756-L62S ControlLogix5562S Safety Controller
Description	
Slot	0
Major Fault	
Minor Fault	

Extension of the The Guard I/O Family with CompactBlock Guard I/O on EtherNet/IP



CompactBlock Guard I/O on DeviceNet

- 1791DS-IB8XOBV4 - 8 Safety IN, 4 Bipolar Safety OUT, 8 Pulse Test OUT
- 1791DS-IB16 - 16 Safety IN, 16 Pulse Test Output



CompactBlock Guard I/O on EtherNet/IP

- 1791ES-IB8XOBV4 - 8 Safety IN, 4 Bipolar Safety OUT, 8 Pulse Test OUT
- 1791ES-IB16 - 16 Safety IN, 16 Pulse Test Output

Helps reduce installation, design and maintenance costs with these features:

- Common wiring, interface and I/O circuits
- Common profiles, all Guard I/O can use RSLogix 5000, Vs16
- Common design tools and application software

Other members of the Guard I/O family for DeviceNet:

- 1791DS-IB8XOB8, -IB12, and -IB4XOW4 (Relay output)
- 1732DS-IB8XOBV4, -IB8 – ArmorBlock® Guard I/O, IP67 rated for use without an enclosure



Using the new CompactBlock Guard I/O it is easy to have common applications with both DeviceNet and EtherNet/IP.

CompactBlock Guard I/O on EtherNet/IP

Now
Shipping!!



- Two new CompactBlock Guard I/O Blocks that communicate with CIP Safety over EtherNet/IP
 - 1791ES-IB8XOBV4: 8 Inputs, 4 Bipolar Outputs, + 8 Standard / Pulse Test Outputs
 - 1791ES-IB16: 16 Inputs, + 8 Standard / Pulse Test Outputs
- EtherNet/IP Communications with RJ45 Ethernet port
 - Node number will be set with software, DHCP or rotary switches
- Supported with GuardLogix® in RSLogix™ 5000 V16.00 and later
 - Via separately installed configuration profiles from Rockwell's "My Support" website

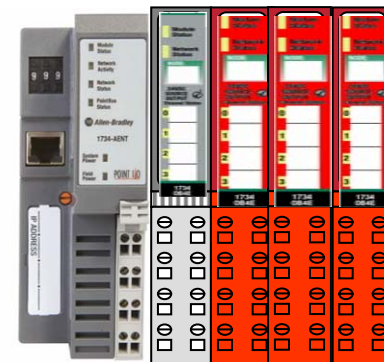
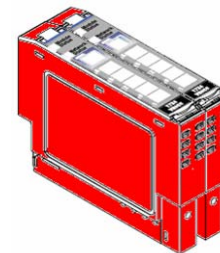
Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

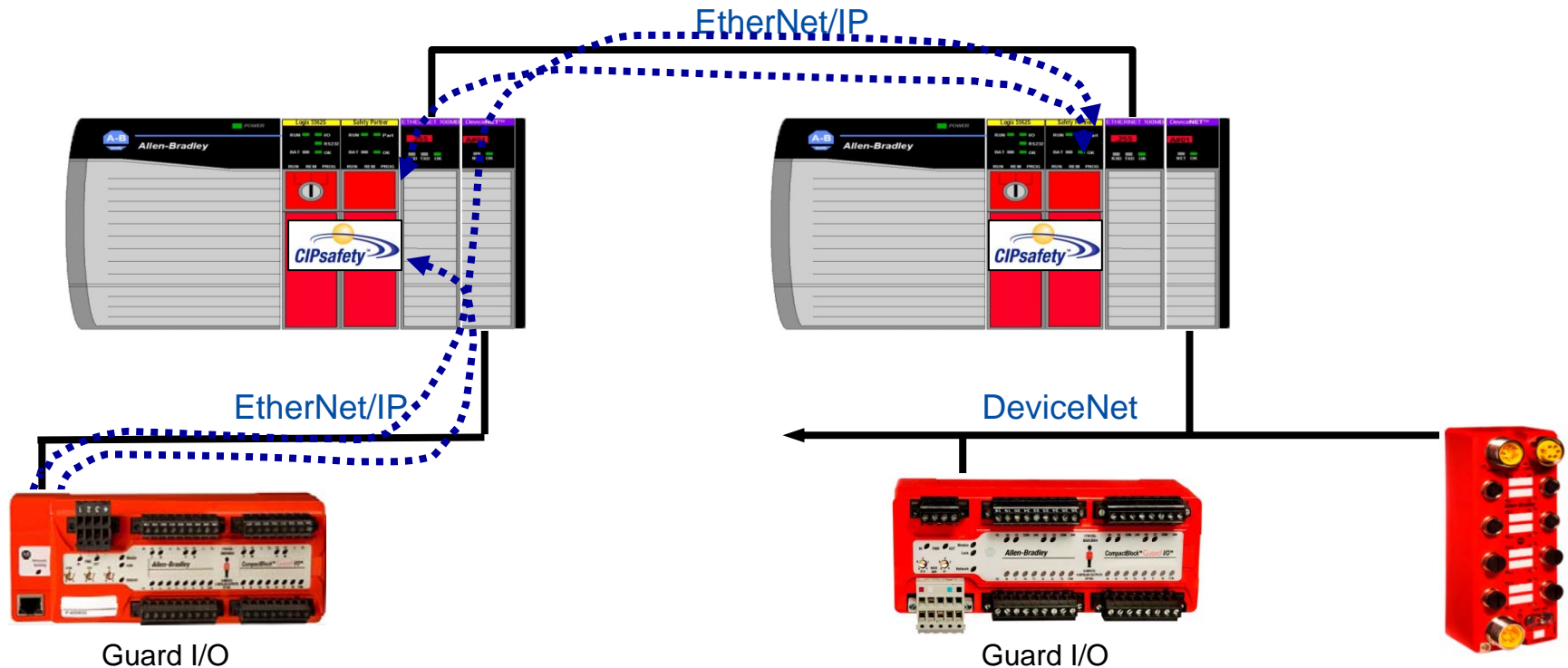
Futures: POINT Guard I/O Plans

- Implement Safety I/O in the Point platform
 - Targeted ship date is late CY 2008
 - Two modules at launch
 - 1734-IB8S – 8 Safety In
 - 1734-OB8S – 8 High Current Safety Out
 - Allow safe and standard I/O on the PointBus backplane
 - DeviceNet communications with PDN at release for SmartGuard
 - To add –ADN with GuardLogix, plan to use V18 or later
 - EtherNet/IP communications at release for GuardLogix
 - 1734-AENTR adapter w/embedded switch planned available for use in 2008
 - Common design for ArmorPoint solution



Point Guard I/O will provide for highly flexible safe and standard I/O platform. Embedded switch in EtherNet/IP will allow for daisy-chaining of Point platforms further reducing cost (switches) and simplifying installation

CIP Safety Capability : Bridging & Routing



- Guard I/O communicates directly with controller
- One GuardLogix can communicate with another over EtherNet/IP
- Guard I/O can communicate remotely with a GuardLogix controller

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

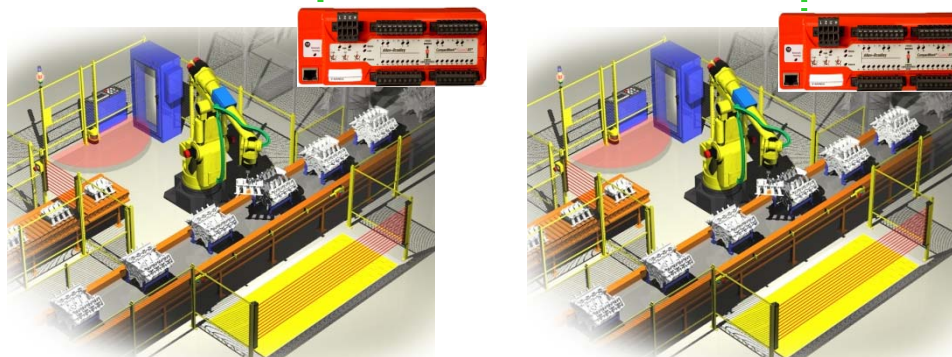
Maximize Safety Network Connectivity: Mix DeviceNet and EtherNet/IP



Stratix™ or any other managed switch



1791ES



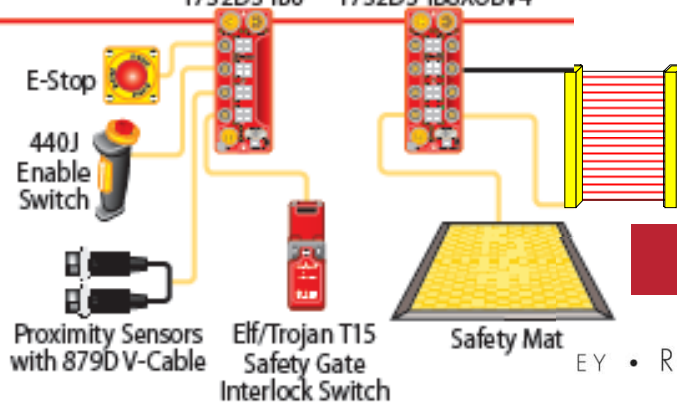
GuardLogix



Ethernet/IP- Safety Interlocking between cells



On-Machine ArmorBlock Guard I/O
1732DS-IB8 1732DS-IB8XOBV4



DeviceNet-Safety Control within each cell

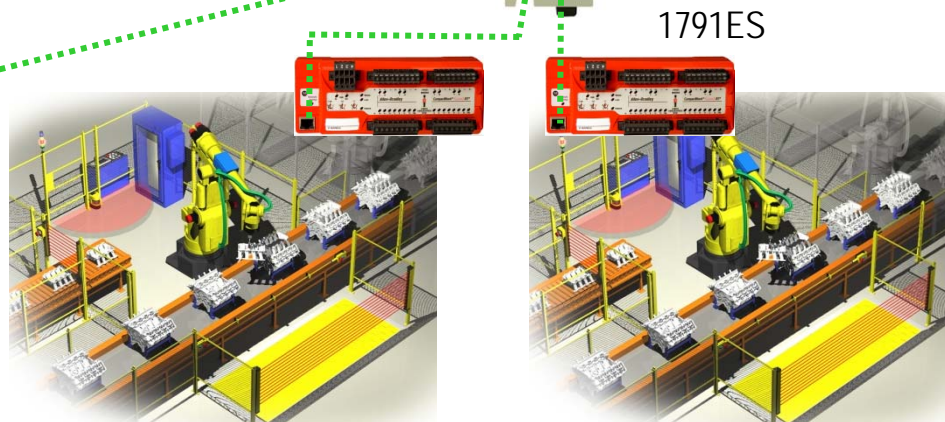
Rockwell Automation
EY • ROCKWELL SOFTWARE



Maximize Safety Network Connectivity: Use of one network - EtherNet/IP



Stratix or any other managed switch



1791ES

GuardLogix
Using 1756-EN2T



Ethernet/IP- Safety Interlocking between cells



E-Stop



440J Enable Switch



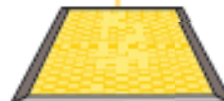
Proximity Sensors with 879D V-Cable



Elf/Trojan T15 Safety Gate Interlock Switch



Safety Mat



Ethernet/IP-Safety Control within each cell

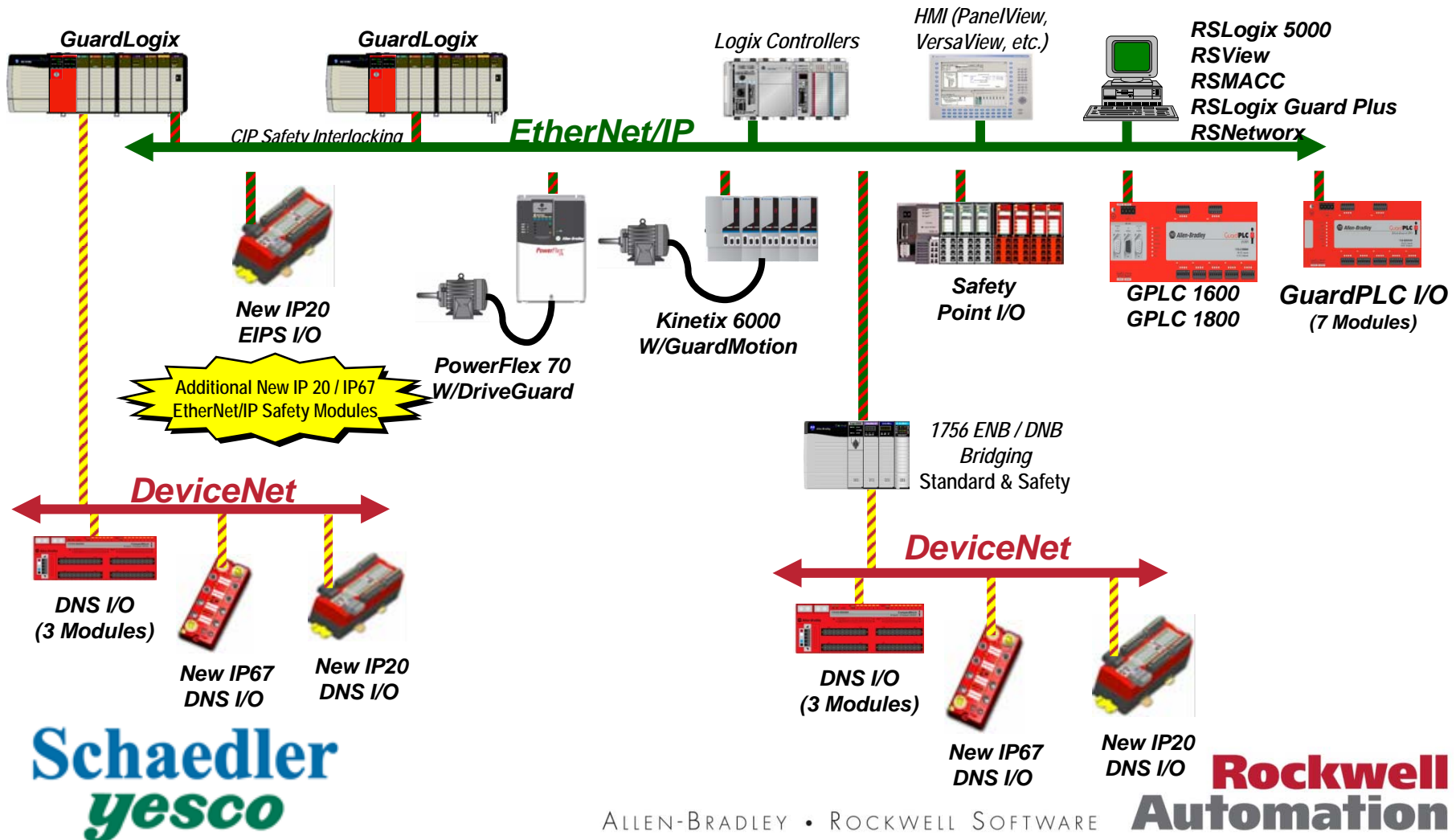
• ROCKWELL SOFTWARE

Automation



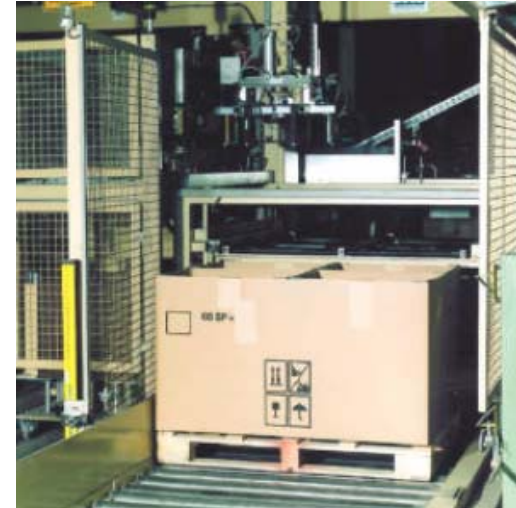
CIP Safety over EtherNet/IP Roadmap

Jan 2006 → Jan 2007 → Nov 2007 → CY 2008 → CY 2009



Safety Services

- Risk Assessment and Risk Reduction Planning
- Hazard Assessments
- Conformity Audits
- Technical Specification Development
- Safety Circuit Design
- Stop Time Measurements and Safety
- Distance Calculations
- Probability of Failure on Demand Calculations
- Standards Training



Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Complete Automation On The Move

- **May 13-14, 2008**
 - Valley Forge Convention Center
 - 1210 First Avenue
King of Prussia, PA 19406
- A **FREE** event featuring:
 - 4 Focused Industry Symposiums
 - 20 Hands-On Labs
 - 27 Technical Sessions
 - 9 Encompass Partner Sessions
 - 25 Show Floor Pedestals and Kiosks
 - 35+ Encompass Partners
- Visit the Rockwell Automation booth on the Expo show floor for more detailed information and registration!

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

Thank you!

Schaedler
yesco

ALLEN-BRADLEY • ROCKWELL SOFTWARE

Rockwell
Automation

