

Product Information

**DeviceNet Safety™**  
Automation by SICK.

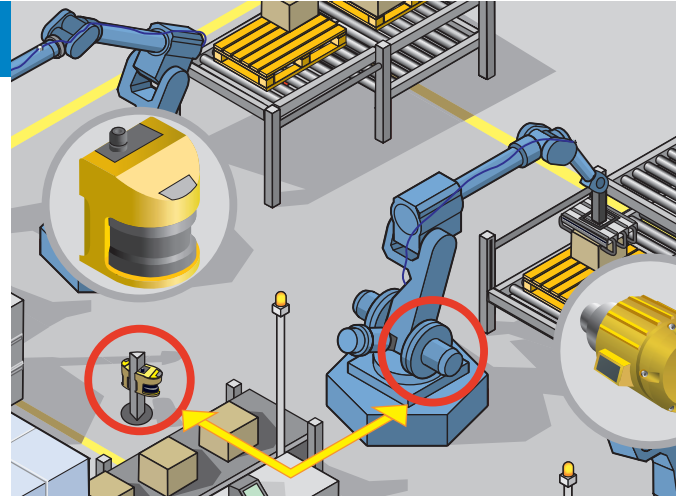
Preliminary Information

**SICK**

## UE 4400 Series IP 20 Safety Network Controllers

SICK's UE 4400 safety network controller devices integrate and evaluate any combination of safety input and actuator devices into DeviceNet Safety™ networks, using local or remote safety capable inputs and outputs. Safety devices can now be logically combined for coherent machine safety control strategies. Applications include packaging machinery, robot cells, machine tools and transfer lines.

Status, diagnostic and error information can be easily accessed locally or through the network. Integrated basic and application-specific function blocks are provided for simple and complex control capability. Logical operations include: AND, OR, Exclusive OR, Exclusive NOR, NOT, ON Delay timer, OFF Delay Timer, Restart Inhibit, External Device Monitoring (EDM), Emergency Stop, Safety Gate Monitoring, ESPE/AOPD (e.g. Safety Light Curtain), Enabling Switch, Two-Hand Control, Automatic/Manual Reset, and User Selector Switch.



### Your benefits:

- Solving applications up to SIL 3 (IEC 61508)
- Local/Remote connection of safety sensors and actuators
- Decentralized evaluation of safety sensors and actuators
- Easy upgrade of installed base of sensors and actuators
- Logical combinations between sensors and actuators
- Large library of approved safety function blocks
- Remote Configuration of other DeviceNet Safety™ devices via Network

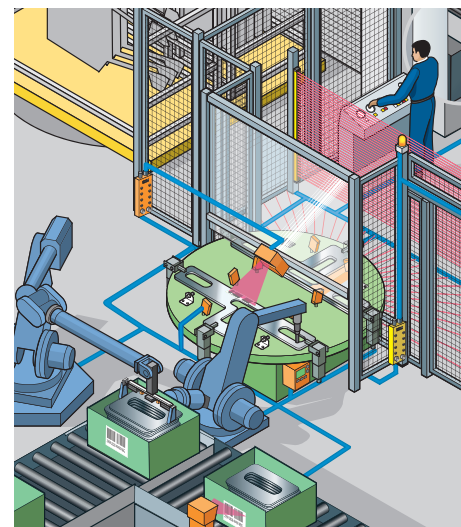
### UE 4400 Series IP 20 Safety Network Controller Product Family

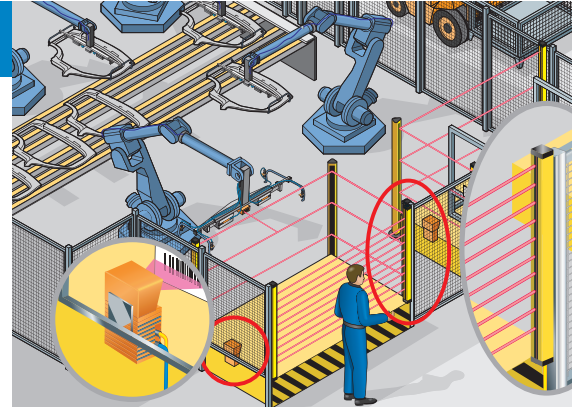
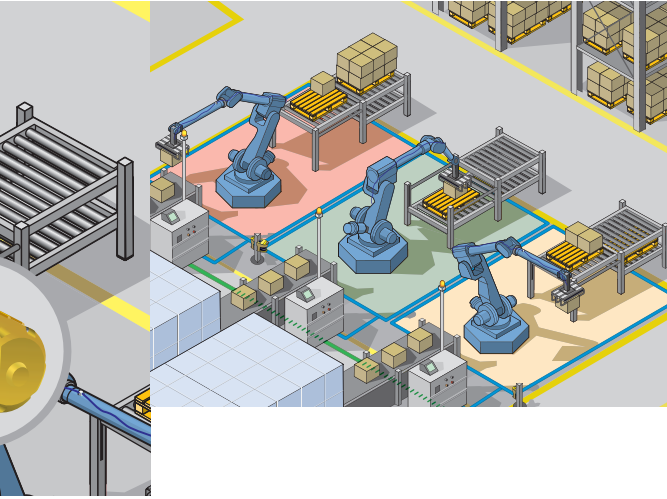
Units feature clamp-style pluggable terminal blocks for easy wiring and installation.



	UE 4470
Function Blocks	Full complement of logical and complex function blocks
Safety Capable Inputs <sup>1)</sup>	8 Dual Channel
Safety Capable Outputs <sup>2)</sup>	4 Dual Channel PNP
Test/Signal Outputs <sup>3)</sup>	6
Communications	DeviceNet or USB
Response Time <sup>4)</sup>	~10 ms (minimum)

<sup>1)</sup> Safety capable inputs may be utilized as single channel safety inputs (for up to 16 total).  
<sup>2)</sup> Safety capable outputs may be utilized as single channel safety outputs (for up to 8 total).  
<sup>3)</sup> Two of the test/signal outputs support current monitoring for muting lamp applications  
<sup>4)</sup> Response time is dependent on device configuration and varies based on settings such as discrepancy time, etc.





## UE 4400 Series IP 67 Remote I/O Bus Nodes

SICK's UE 4400 series IP 67 remote I/O bus nodes integrate safety sensors and actuators into a flexible control system using DeviceNet Safety™. Units are designed with 6 dual-channel safety inputs and 2 dual-channel bipolar safety outputs. SICK machine safeguarding devices such as C 4000 Safety Light Curtains and S 3000 Safety Laser Scanners can be intelligently integrated into the DeviceNet Safety™ field bus network using SICK Safety Data Link (SDL) technology on the UE 4450 product types. This provides customers with advanced diagnostic capability and reduces the number of DeviceNet Safety™ node addresses required. Configuration can be done locally or remotely through DeviceNet.

### Your benefits:

- Solving applications up to SIL 3 (IEC 61508)
- Easy upgrade of sensors and actuators on DeviceNet Safety™
- Multiple safety sensors and actuators are supported
- Decentralized evaluation of safety sensors and actuators
- Easy installation utilizing standardized connectors
- Rugged IP67 enclosure for field mounting
- Only one safety field bus address for up to 14 sensors and actuators

### UE 4400 IP 67 Remote I/O Bus Node Product Family

All units have DeviceNet Safety™ 5-pin mini connectors for input and output network connection and 4-pin mini connectors for auxiliary power supply connection. Safety input and output field signals utilize 5-pin M12 style connectors.



	UE 4420	UE 4450
Type	I/O	I/O + SDL
Safety Capable Inputs <sup>1)</sup>	6 Dual Channel	6 Dual Channel + 2 SDL
Safety Capable Outputs <sup>2)</sup>	2 Dual Channel Bipolar	2 Dual Channel Bipolar
Test/Signal Outputs <sup>3)</sup>	12	12
Communications	DeviceNet, RS-232	DeviceNet, RS-232, SDL
Response Time <sup>4)</sup>	~6 ms	~6 ms

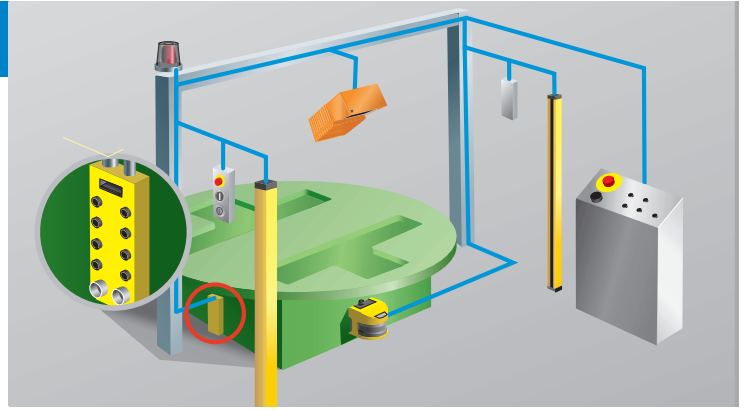
<sup>1)</sup> Safety capable inputs may be utilized as single channel safety inputs (for up to 12 total).

<sup>2)</sup> Safety capable outputs must be utilized as dual channel configuration.

<sup>3)</sup> Two of the test/signal outputs support current monitoring for muting lamp applications

<sup>4)</sup> Response time is dependent on device configuration and varies based on settings such as discrepancy time, etc.

# UE 4400 Series IP 20 Remote I/O Bus Nodes



SICK's UE4400 IP 20 remote I/O bus nodes integrate safety sensors and actuators using DeviceNet Safety™. UE 4400 series IP 20 remote I/O bus nodes are configured using an EDS file via the DeviceNet Safety™ network. Versions include semiconductor safety inputs only, a combination of semiconductor safety inputs and safety outputs and semiconductor inputs with relay-based safety outputs.

## Your benefits:

- Solving applications up to SIL 3 (IEC 61508)
- Easy upgrade of sensors and actuators on DeviceNet Safety™
- Multiple safety sensors and actuators are supported
- Decentralized evaluation of safety sensors and actuators
- Easy installation utilizing clamp-style pluggable connectors
- IP 20 enclosure for DIN rail, panel mounting
- Only one safety field bus address for up to 16 sensors and actuators



**UE 4400 IP 20 Remote I/O Bus Node Product Family**  
Units feature clamp-style pluggable terminal blocks for easy wiring and installation.



	UE 4420-22EE900	UE 4420-22EE490	UE 4420-22EE3H0
Safety Capable Inputs	6 Dual Channel	4 Dual Channel	2 Dual Channel
Test Outputs	4 points	4 points	4 points
Safety Capable Outputs (Solid State)	N/A	4 Dual Channel	N/A
Safety Capable Outputs (Relay)	N/A	N/A	2 Dual Channel, Relay





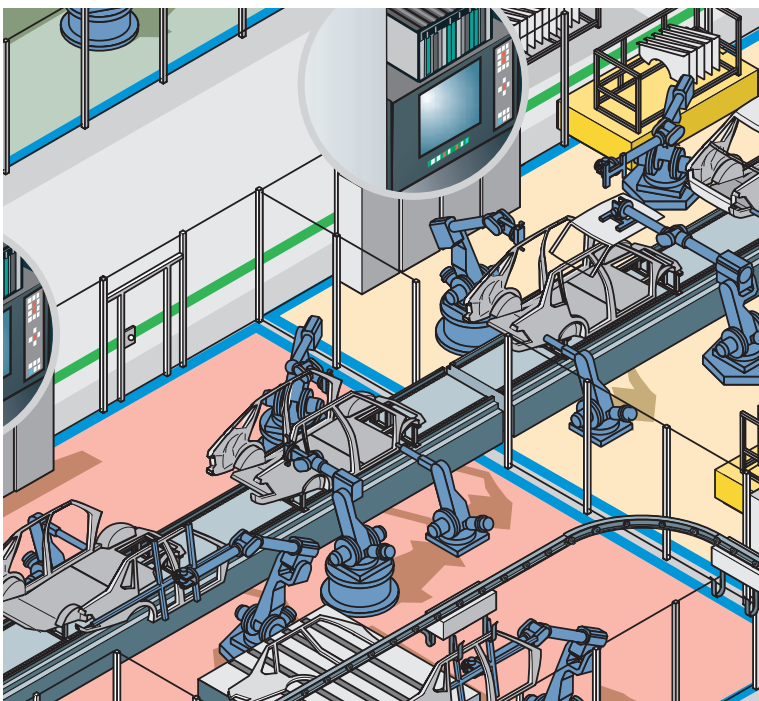
## DeviceNet Safety™ Automation by SICK

SICK, the global leader in machine safeguarding technology, announces the new Intelliface DeviceNet Safety™ product portfolio, comprising safety programmable devices and remote I/O bus nodes for flexible safety automation as integrated part of machine automation.

SICK's DeviceNet Safety™ product portfolio includes all components necessary for implementing a safety control system, including:

- Safety Network Controllers (Safety PLC)
- IP 20 Remote I/O Modules
- IP 67 Remote I/O Modules
- Network Configuration Tool
- Network Components and Accessories

From safety relays to safety controllers to safe field bus technology, SICK supports all of your safety interfacing requirements with Intelliface. Contact your local SICK representative to find out how we can help you succeed in implementing your safety control system.



**Benefits realized by using SICK DeviceNet Safety™ products:**

### Reduced Wiring efforts

- Reduced number of components required
- Locating remote I/O closer to sensors and actuators
- Replacement of modules without interrupting other I/O
- Simpler assembly and integration of subsystems
- Intelligent sensor support (e.g. C 4000 Safety Light Curtain, S 3000 Safety Laser Scanner)

### Improved Machine Availability

- Diagnostic information available for troubleshooting
- Lower Mean Time To Repair (MTTR)
- Implementation of remote maintenance and diagnostic concepts

### Improved Technology, protecting existing/future Technology Investments

- Integrates with existing DeviceNet™ networks
- Flexible design and implementation of safety automation
- Changeover from relay-based solutions to system-based solutions
- Easier expansion capability and component reusability

### Media Independent Protocol

- Protects hardware investment now and in the future
- Reduction of engineering costs through commonality of parts



Our complete range of sensors provides answers to suit any application in the field of automation. Even under rugged ambient conditions objects are reliably detected, counted and positioned in respect of their form, location and surface finish, as well as their distances established with pin-point accuracy.



Comprehensive safeguarding of both personnel and machinery! As specialists in Sensor Technology, SICK develops and manufactures pioneering products for providing protection in hazardous zones, dangerous locations and for safeguarding access points. By providing services, which encompass all aspects of machine safety and security, SICK is setting new standards in Safety Technology.



System control, maintaining setpoints, optimising process control and monitoring the flow of materials – the instruments and services for Analysis and Process Measurement, supplied by SICK-MAIHAK, are setting the standards for these applications in terms of Technology and Quality.



Whether the tasks involve identification, handling, classification or volume measurement, innovative Auto Ident systems and laser measuring systems function extremely reliably, even under rapid cycle times. They conform to the latest Standards and can be simply and speedily integrated in all industrial environments and external applications.

## SICK Sensor Intelligence.

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# SICK