AES 2135/AES 2165 BNS Compatible Safety Controllers

Features
- Control Category 3 to EN 954-1
- 1 enabling circuit
- Enable delay time can be modified
- Monitoring of mechanical position switches, safety switches, solenoid interlocks, coded magnet sensors or E-stops
- Can be changed from NO-NC to NC-NC contact combination
- Can be used as emergency-stop controller for Category 0 to EN 60204-1
- Monitoring for short-circuit between connections with NO-NC contact combination
- ISD Integral System Diagnostics
- Connection of input expansion modules possible

Dimensions   55 x 75 x 110 mm

ISD   **The following faults are recognized by the safety controller and indicated by means of ISD**
- Failure of door contacts to open or close
- Short-circuits on or between the switch connections
- Interruption of the switch connections
- Failure of the unit's internal safety relay to pull-in or drop-out
- Faults on the input circuits or on the relay control of the guard door monitor

Model Designation

AES 2135-24VAC	AES 2165-24VAC
AES 2135-110VAC	AES 2165-110VAC
AES 2135-230VAC	AES 2165-230VAC

Approvals   BG   UL   CSA

Typical Applications
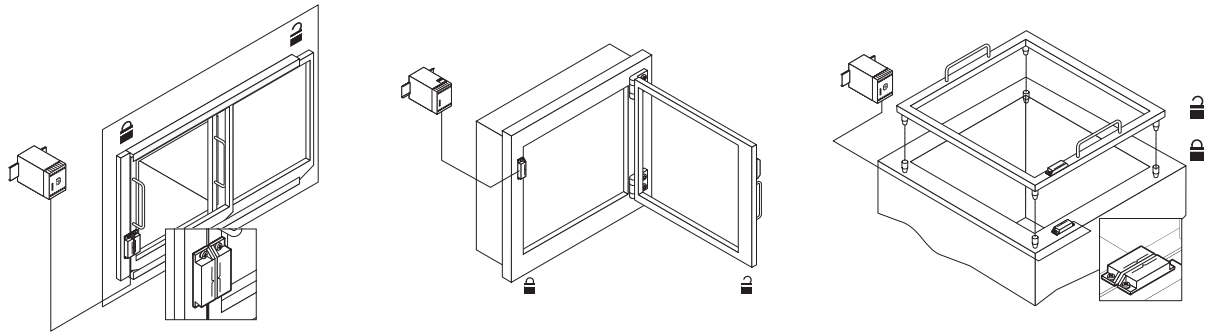
Typical Wiring Diagram

AES 2135

AES 2165
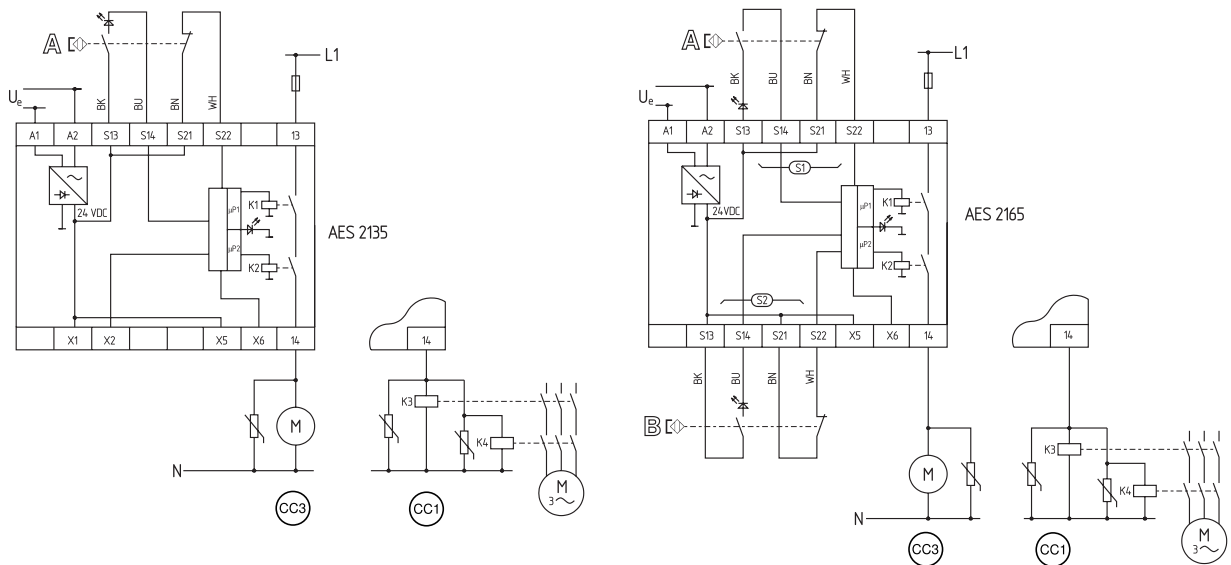
Application Notes	• AES to achieve Control Category 3 to EN 954-1.	• If one or two external relays or contactors are used to switch the load, the system can then only be classified in Control Category 3 to EN 954-1 if exclusion of the fault "Failure of the external contactors" can be substantiated and is documented, e.g. by using reliable de-rated contactors. A second contactor leads to an increase in	the level of security by redundant switching of the load.
	• Monitoring a sliding, hinged or removable guard device, each using a safety coded magnet A.		• The wiring diagram is with guard devices closed and shows the de-energized condition.
	• If the load is directly switched by the AES, the complete system can be classified in Control Category 3 to EN 954-1.		

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Circuit Options	**• Modification for 2 NC Contacts** The controller can be modified to monitor two normally closed contacts by jumping between the terminals X1 and X2. The short circuit monitoring between connections then becomes inoperative.	**• Extension of Enable Delay Time** The enable delay time can be increased from 0.1 s to 1 s by jumping between the terminals X5 and X6.

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