



Conforms to EN60204-1, EN954-1, VDE 0113-1  
UL and C-UL listed, BG approved



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safety monitoring relays

## SR103AM

### Dual Channel Safety Monitoring Relay

- Power requirements—the SR103AM will accept 24 VAC/DC, 115 VAC, or 230 VAC
- Inputs—the SR103AM will accept single or dual N/C inputs or dual inputs from a light curtain (see SR102AM for application wiring for a light curtain)
- Outputs—the SR103AM has 3 N/O outputs to route power to the coils of power contactors, plus 1 N/C auxiliary output for signaling purposes
- External Device Monitoring (EDM) is provided with a N/C loop between S11/S12 and S21 on the SR103AM
- Monitored manual or auto-matic/manual reset modes are available on the SR103AM. Monitored manual reset requires closure of the reset circuit followed by opening of the circuit. Reset occurs when circuit is opened. Auto reset requires only closure of the reset circuit as reset occurs when circuit is closed.



**Go to the Engineering Guide**  
For in-depth information on safety standards and use.



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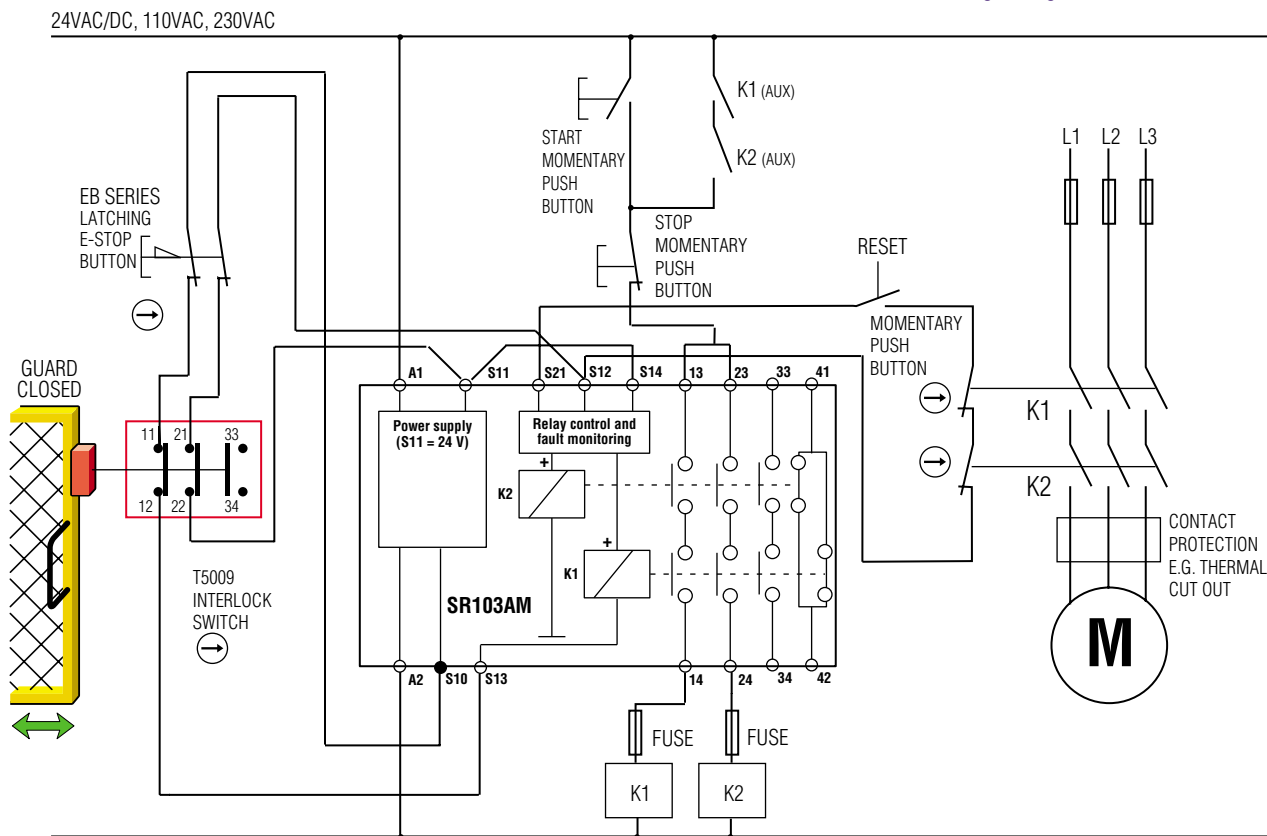
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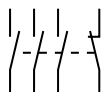
## Application

See the SR102AM for wiring to a light curtain



For a full explanation of the circuit operating principle and fault detection, see "Common Circuit Examples" in the Engineering Section of this catalog.

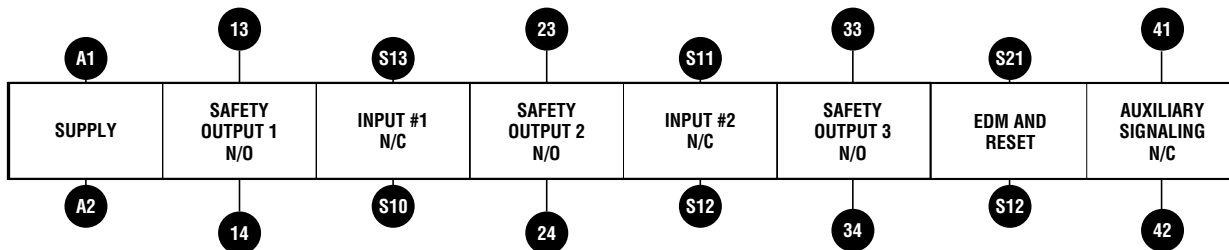
## Output Contact Arrangements



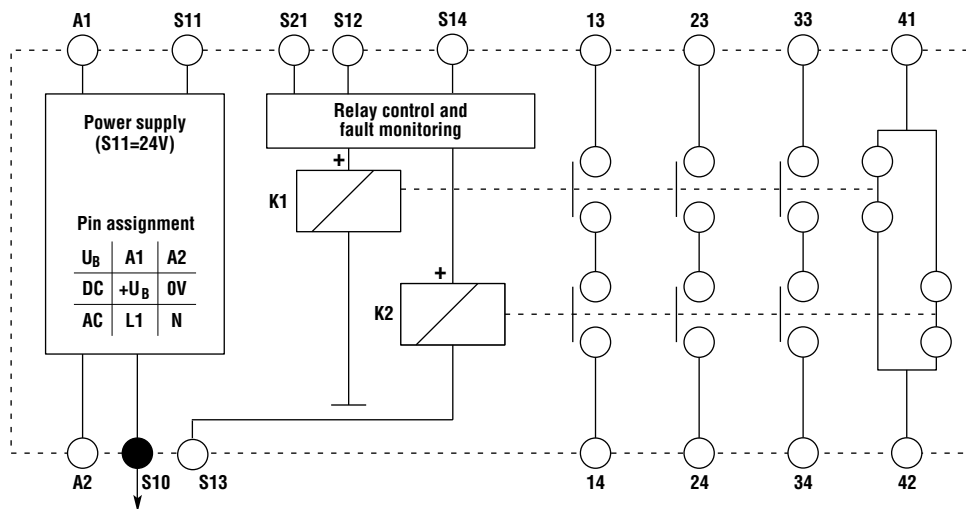
## Terminal Pin Assignments

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 14 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 24 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 34 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 42 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

## Terminal Connections



## ■ Block Diagram

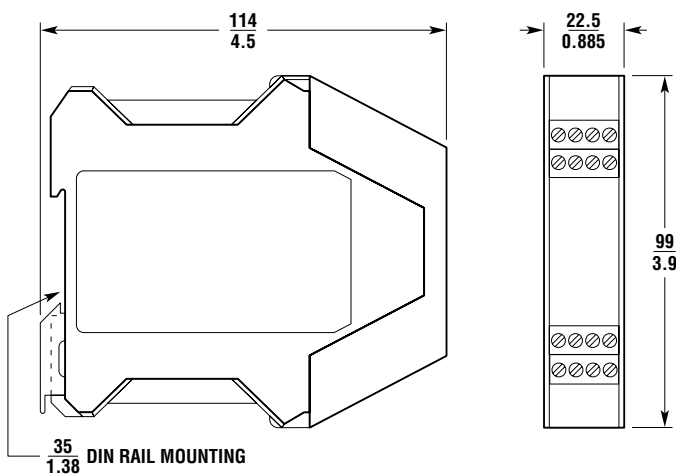


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## ■ Dimensions — mm/in.

SR103AM



**A** Go to the Engineering Guide  
For in-depth information on  
safety standards and use.

## ■ Specifications

| Electrical                           | All Models                                                                   | SR103AM01 | SR103AM02 | SR103AM03 |
|--------------------------------------|------------------------------------------------------------------------------|-----------|-----------|-----------|
| <b>Power Supply:</b>                 | ±10%, 50-60 Hz                                                               | 24 VAC/DC | 115 VAC   | 230 VAC   |
| <b>Power Consumption:</b>            | Approx. 1 VA                                                                 |           |           |           |
| <b>Safety Inputs:</b>                | 1 N/C or 2 N/C or 2 solid state (light curtain)                              |           |           |           |
| <b>Max Input Resistance:</b>         | 800 Ohms per channel                                                         |           |           |           |
| <b>Outputs:</b>                      | 3 N/O + 1 N/C auxiliary                                                      |           |           |           |
| <b>Output Rating AC:</b>             | Inductive AC-15, 3 A/230 VAC                                                 |           |           |           |
| <b>Output Rating DC:</b>             | Inductive DC-13, 2 A/24 V                                                    |           |           |           |
| <b>Min Switched Current/Voltage:</b> | 10 mA/10 V                                                                   |           |           |           |
| <b>Impulse Withstand Voltage:</b>    | 2500 V                                                                       |           |           |           |
| <b>Max Drop-Out Time:</b>            | 12 ms (75 ms by removing supply voltage)                                     |           |           |           |
| <b>Max Output Fuse:</b>              | 6 A quick-acting or 4 A slow-acting                                          |           |           |           |
| <b>Reset Mode:</b>                   | Monitored manual (S11-S21) or automatic/manual (S12-S21)                     |           |           |           |
| <b>Contactors Monitoring:</b>        | N/C loop S11/S12-S21                                                         |           |           |           |
| <b>Mechanical</b>                    |                                                                              |           |           |           |
| <b>Mounting:</b>                     | 35 mm (1.38 in.) DIN rail                                                    |           |           |           |
| <b>Case Material:</b>                | Fiber-filled Polyamide PA6.6                                                 |           |           |           |
| <b>Max Wire Size:</b>                | 1 x 2.5 mm <sup>2</sup> (14 AWG) stranded                                    |           |           |           |
| <b>Weight:</b>                       | 230 g (8.1 oz.)                                                              |           |           |           |
| <b>Color:</b>                        | Red                                                                          |           |           |           |
| <b>External Switches:</b>            | None                                                                         |           |           |           |
| <b>Indication:</b>                   | Green = K1 Closed, Green = K2 Closed                                         |           |           |           |
| <b>Mechanical Life:</b>              | 1 x 10 <sup>7</sup> operations                                               |           |           |           |
| <b>Environmental</b>                 |                                                                              |           |           |           |
| <b>Enclosure Protection:</b>         | IP20 terminals, IP40 (NEMA 1) housing                                        |           |           |           |
| <b>Operating Temperature:</b>        | 24 VAC/DC: -15 to 40°C (5 to 104°F)<br>115/230 VAC: -15 to 40°C (5 to 104°F) |           |           |           |
| <b>Humidity:</b>                     | 93% RH at 104°C (219°F)                                                      |           |           |           |
| <b>Compliance</b>                    |                                                                              |           |           |           |
| <b>Standards:</b>                    | EN 60204-1, EN 954-1, VDE 0113-1                                             |           |           |           |
| <b>Approvals/Listings:</b>           | CE marked for all applicable directives, BG, UL and C-UL                     |           |           |           |
| <b>Safety Category:</b>              | Cat. 4 per EN954-1 (SR103 internal operation)                                |           |           |           |

Specifications are subject to change without notice.

Note: The safety contacts of the STI switches are described as normally closed (N/C)—i.e., with the guard closed, actuator in place, and the machine able to be started.

## ■ Ordering

| Model     | Supply    | Inputs | Outputs | Auxiliary | Part No.   |
|-----------|-----------|--------|---------|-----------|------------|
| SR103AM01 | 24 VAC/DC | 2 N/C  | 3 N/O   | 1 N/C     | 44510-1031 |
| SR103AM02 | 115 VAC   | 2 N/C  | 3 N/O   | 1 N/C     | 44510-1032 |
| SR103AM03 | 230 VAC*  | 2 N/C  | 3 N/O   | 1 N/C     | 44510-1033 |

\*230 VAC units are available on special order. Minimum quantities may apply.

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