



- Features**
- Sensor-free detection of standstill by measuring the EMF of the motor
  - Motor voltage range: 0 – 690 V
  - No adjustment work necessary
  - Connection to frequency inverters possible
  - Speed frequency: 0 – 1000 Hz
  - 3 enabling outputs; Stop Category 0
  - 1 signalling output (NC)
  - No set point necessary
  - Wire break monitoring of the measuring inputs
  - Self testing with fault memory
  - Cyclic self monitoring
  - 5 LEDs to display operating conditions
  - PL<sub>d</sub> per EN ISO 13849-1, Control Category 4 to EN954-1

**Dimensions**     45 x 100 x 121 mm

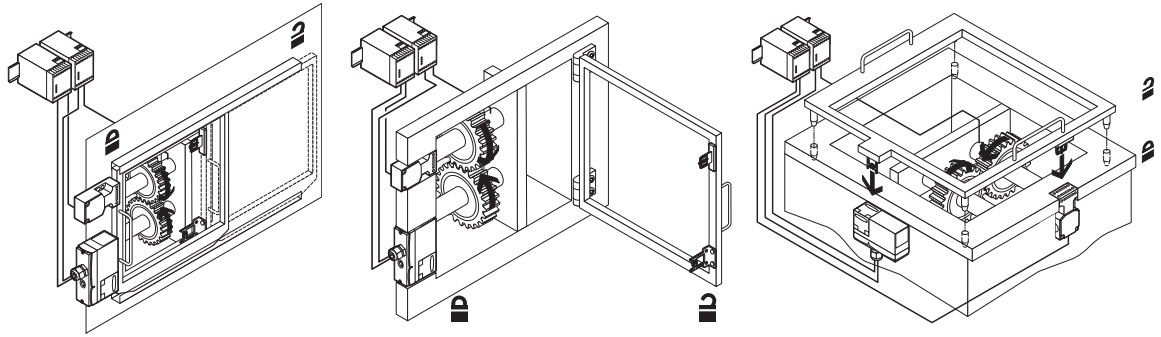
- LED Functions**
- U<sub>B</sub>: Status operating voltage (LED on when power is on)
  - A: Channel A (on when frequency at channel A)
  - B: Channel B (on when frequency at channel B)
  - OUT: Enabling signal (on when 13-14, 23-24, 33-34 closed)
  - ERR: Error (on in case of fault)

Model Designation	AZR31S1 - 24VDC	AZR31S1 - 115VAC
	AZR31S1 - 24VAC	AZR31S1 - 230VAC

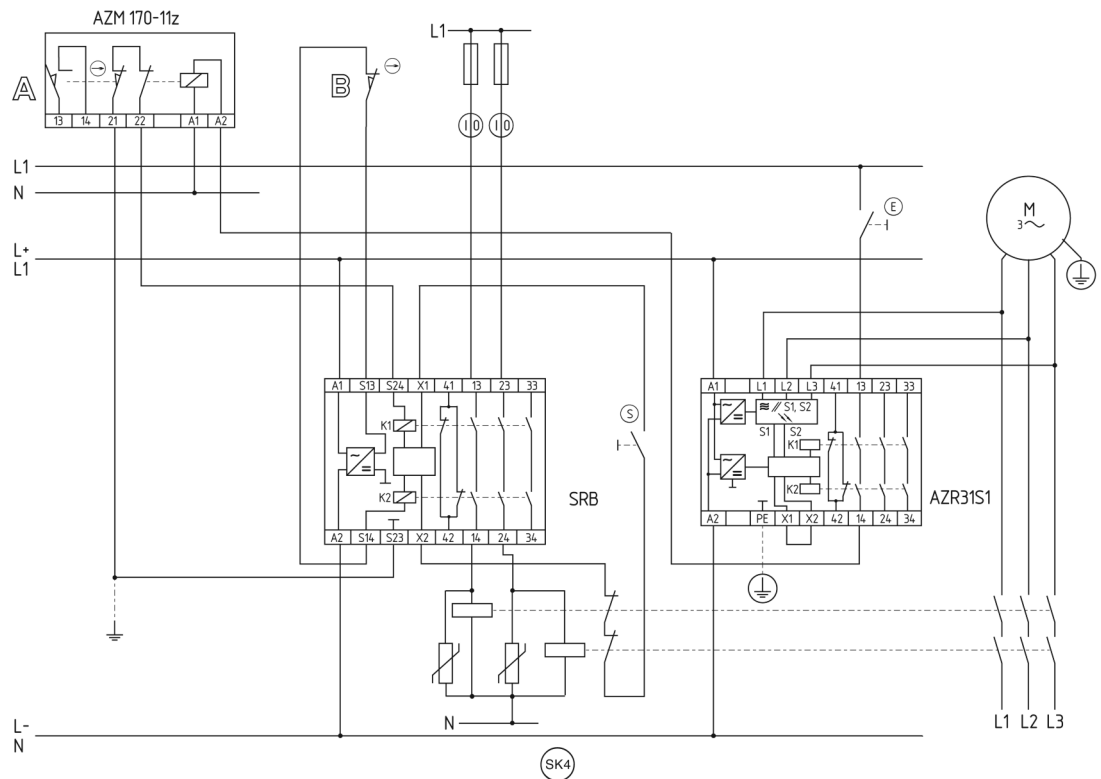
Description of the terminals	<b>Voltages:</b>	A1	115 VAC/230 VAC	+24V DC	24V AC
		A2	N	0V DC	24V AC
	<b>Outputs:</b>	13-14	First safety enabling circuit		
		23-24	Second safety enabling circuit		
		33-34	Third safety enabling circuit		
	<b>Start:</b>	X1-X2	Feedback circuit		
		41-42	Auxillary contact		

**Approvals**     BG   UL   CSA

## Typical Applications



## Typical Wiring Diagram



Wiring diagram above show with guard doors closed and in de-energized condition

### Operating Principle

The safety monitoring module checks the correct position of all internal relay contacts. During startup, every motor generates an induced voltage caused by residual magnetism, which is evaluated by the safety monitoring module. Any interruption of the motor cable is detected and recognized as well. To activate the AZR31S1, the connected motor must be standing still and the feedback input X1-X2 must be closed.

- When the SSW301HV is connected to cable lengths >10 m, failures can occur. The following is recommended: Short and shielded connecting cables between the safety monitoring module and the motor; lay cables to other high capacity consumers (motor, etc) or strong interference sources (frequency converters) at sufficient distance and if possible not parallel to the signal input lines (L1, L2, L3) of the safety monitoring module.
- When using frequency converters, please observe that: the terminal stage of the frequency converter is switched off when the motor is at standstill; there is no position control when the motor is at standstill

- In order to avoid any inadvertent switch off or malfunction (ERR-LED) of the safety monitoring module please ensure that: external influences do not trigger any movement of the motor; no rotary movement of the motor can occur as soon as the self test is started (i.e. motor at standstill, LEDs A and B simultaneously flashing).