# MINOS SL Application Examples

#### **Application example 1:**

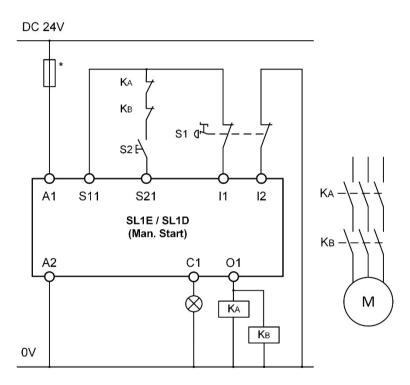
Two-channel emergency-stop monitoring with short circuit monitoring and monitored manual start

- · SL1E: Up to PL e / SILCL 3
- SL1D: Up to PL d / SILCL 2

#### **Application example 2:**

Single-channel emergency stop monitoring with automatic start

- · SL2E: Up to PL c / SILCL 1
- · SL2D: Up to PL c / SILCL 1



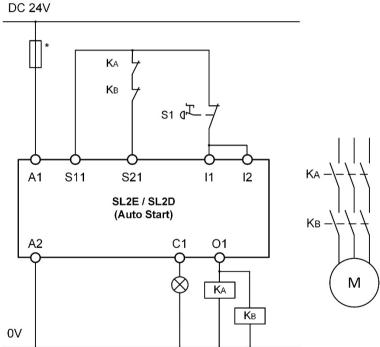


Fig. 1 Application example - Two-channel emergency-stop monitoring with short circuit monitoring and monitored manual start

Fig. 2 Application example - Single-channel emergency stop monitoring



## MINOS SL Application Examples

#### **Application example 3:**

Two-channel monitoring of a non-contact safety device with short circuit monitoring and monitored manual start

· SL1E: Up to PL e / SILCL 3

· SL1D: Up to PL d / SILCL 2

### DC 24V D+24V ጎ ov BWS S2 E S21 11 12 S11 SL1E / SL1D (Man. Start) 01 М KΑ Кв 0V

Fig. 3 Application example - Dual channel safety door monitoring with BWS and monitored manual start

#### Application example 4:

Contact reinforcement and test pulse filtering for safe PLC output with automatic start

· SL2E: Up to PL e / SILCL 3

· SL2D: Up to PL d / SILCL 2

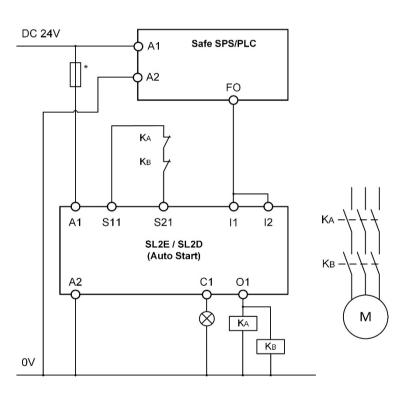


Fig. 4 Application example - Contact reinforcement and test pulse filtering for safe PLC outputs

**Prerequisite:** Safe PLC output meets the required safety level and short circuit between PLC output and SL2E / SL2D can be excluded (e.g. wiring inside an electrical installation space - see EN ISO 13849-2; Tab D4 / D5).



## MINOS SL Application Examples

#### Application example 5:

Dual channel safety door monitoring with automatic start

· SL1E: Up to PL e / SILCL 3 · SL1D: Up to PL d / SILCL 2

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Fig. 5 Application example - Dual channel safety door monitoring

#### Legend for all application examples:

S1: Emergency stop button

S2: Start button

KA/KB: Positively driven contactors; Monitoring via feedback circuit

BWS: Non-contact safety switch, light curtains etc.

PL and SILCL: According to EN ISO 13849-1 and EN 62061. Specified safety level, considering a fault exclusion in the wiring between SLxE/SLxD and the connected contactors KA and KB. See details in "Wiring / applications - safe output" section.

\* Use of an external fuse: See the "Electrical connection" section.

This document is not a replacement for the operating instruction. Please follow the instructions in the operating instructions during installation.

