

E-STOP, Safety gate, Safety light curtain input safety relay

E-STOP, safety gate, safety light curtain

NPFSR-K122AMD

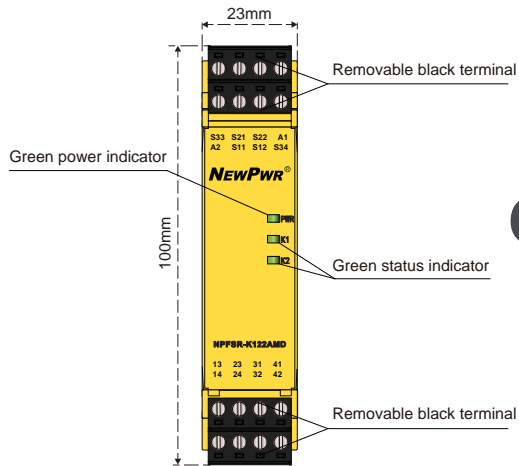
Input: E-STOP, Safety gate, PNP safety light curtain
Output: 2NO+2NC

The inputs of K series E-STOP, safety gate, safety light curtain input safety relays are normally closed contact signals, which are used for emergency braking or the protection of people entering dangerous areas, and widely used in machining and other industries.

- 1oo2 architecture
- With detection of shorts across contacts
- With auto reset and manual reset function
- The safety function remains effective in the case of a component failure
- The correct opening and closing of the safety function relays is tested automatically in each on-off cycle

Parameters

Voltage range	24V AC/DC
Voltage tolerance	0.85 ~ 1.1
AC frequency	50Hz ~ 60Hz
Power dissipation	≤ 2.2W/24V DC, ≤ 5.4VA/24V AC
Current consumption	≤ 50mA/24V DC
Cable resistance	≤ 15Ω
Input devices	E-STOP button, Safety gate, PNP safety light curtain
Signal type	2NO+2NC
Contact type	Forced guided
Contact material	AgSnO ₂ +0.2μmAu
Contact loading	AC-15: 5A/230V, DC-13: 5A/24V
Contact fuse protection	10A gL/gG(NO), 6A gL/gG(NC)
Switch-on	Auto: ≤ 300ms, Manual: ≤ 150ms
Release	E-stop: ≤ 30ms, Power failure: ≤ 100ms
Recovery time	E-stop: ≤ 30ms, Power failure: ≤ 100ms
Supply short interruption	20ms
EMC	According to IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4
Rated insulation voltage	250V AC
Rated impulse voltage	6000V(1.2/50us)
Dielectric strength	1500V AC, 1 min
Clearance and creepage	According to IEC 60947-1
Vibration	10Hz ~ 55Hz, 0.35mm
Overvoltage category	III
Pollution degree	2
Protection type	IP20
Ambient temperature	-20°C ~ +60°C
Storage temperature	-40°C ~ +80°C
Operating altitude	≤2000m
Mechanical life	10×10 ⁶ cycles



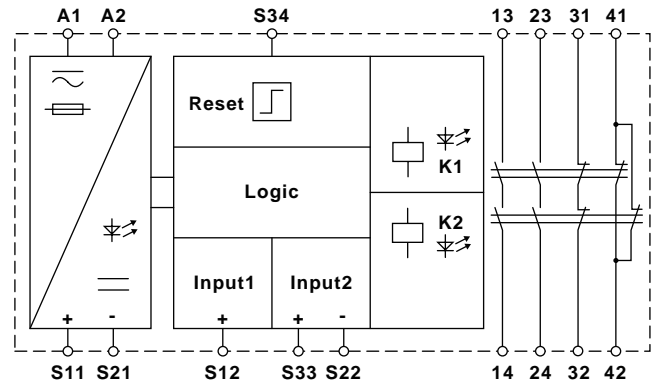
SIL3
IEC 61508

PLe
ISO 13849

Cat.4
ISO 13849



Functional Block Diagram



Safety Values

Performance level	PLe, according to ISO 13849
Category	Cat.4, according to ISO 13849
PTI (T_m)	20 years, according to ISO 13849
DC_{avg}	99%, according to ISO 13849
MTTF_D	164 years, according to ISO 13849
CCF	68, according to ISO 13849
SIL	SIL3, according to IEC 61508
SIL CL	SIL CL3, according to IEC 62061
HFT	1, according to IEC 62061
SFF	≥ 99%, according to IEC 62061
PFD_{avg}/PTI = 20 years	1.29×10 ⁻⁵ , according to IEC 62061
PFH	1.49×10 ⁻¹⁰ 1/h, according to IEC 62061
Stop Category	0, according to IEC 60204