

## NPFSR-K131MD

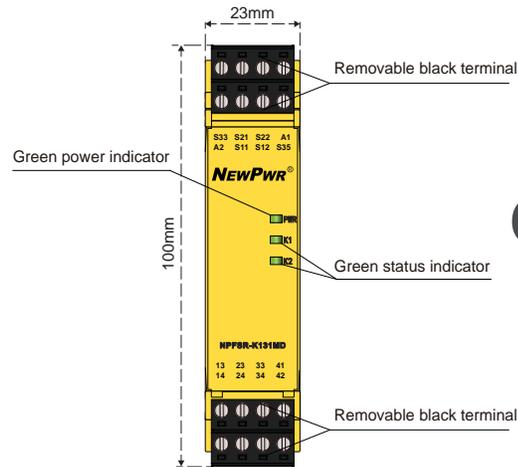
Input: E-STOP, Safety gate  
Output: 3NO+1NC

The inputs of K series E-STOP, safety gate 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 monitored 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
Signal type	3NO+1NC
Contact type	Forced guided
Contact material	AgSnO <sub>2</sub> +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	≤ 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 <sup>6</sup> cycles



**SIL3**  
IEC 61508

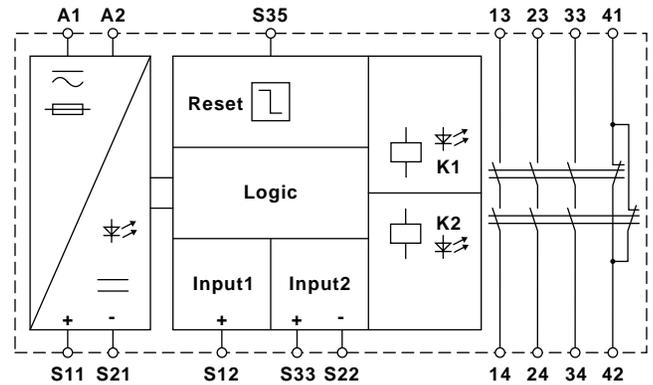
**PLe**  
ISO 13849

**Cat.4**  
ISO 13849



E-STOP, safety gate,  
safety light curtain

### Functional Block Diagram



### Safety Values

Performance level	PLe, according to ISO 13849
Category	Cat.4, according to ISO 13849
PTI (T <sub>m</sub> )	20 years, according to ISO 13849
DC <sub>avg</sub>	99%, according to ISO 13849
MTTF <sub>D</sub>	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 <sub>avg</sub> /PTI = 20 years	1.29×10 <sup>-5</sup> , according to IEC 62061
PFH	1.49×10 <sup>-10</sup> 1/h, according to IEC 62061
Stop Category	0, according to IEC 60204