

急停按钮、安全门、安全光幕输入安全继电器 E-STOP, Safety gate, Safety light curtain input safety relay



K系列急停按钮、安全门、安全光幕输入安全继电器的输入都为常闭触点信号,常用于紧急制动或对进入危险区域人员的保护,广泛应用于机械、食品等行业。
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结构
- 具有通道间交叉短路诊断功能
- 支持自动复位,手动复位或带监控手动复位
- 元件发生单一故障时,仍能保持安全功能
- 在每一个接通-关闭周期内,安全继电器可以自动检测出是否正确地开启和闭合
- 1oo2 architecture
- With detection of shorts across contacts
- With auto reset and manual reset or 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

产品型号 Model	自动复位 Auto	手动复位 Manual	监控手动复位 Monitored	输出触点 Output
DSR-K11	■	■		3NO+1NC
DSR-K12			■*	3NO+1NC
DSR-K13	■	■		2NO+2NC
DSR-K14			■*	2NO+2NC

备注: * 监控手动复位产品不适用于光幕应用
NOTE: Monitored manual reset products are not suitable for safety light curtain applications

技术参数 Parameters

电源参数 Power supply	环境特性 Environmental
额定电压 Voltage range: 24V AC/DC	电磁兼容 EMC: 符合IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4
电压容差 Voltage tolerance: 0.85 ~ 1.1	额定绝缘电压 Rated insulation voltage: 250V AC
交流频率 AC frequency: 50Hz ~ 60Hz	额定冲击耐受电压 Rated impulse voltage: 6000V(1.2/50μs)
整机功耗 Power dissipation: ≤ 2.2W/24V DC, ≤ 5.4VA/24V AC	绝缘强度 Dielectric strength: 1500V AC, 1min
输入参数 Input	电气间隙和爬电距离 Clearance and creepage: 符合IEC 60947-1
输入电流 Current consumption: ≤ 50mA/24V DC	振动 Vibration: 10Hz ~ 55Hz, 0.35mm
导线电阻 Cable resistance: ≤ 15Ω	过压等级 Overvoltage category: III
输入设备 Input devices: 急停按钮、安全门、PNP安全光幕	污染等级 Pollution degree: 2
输出参数 Output	防护等级 Protection type: IP20
触点数量 Signal type: 3NO + 1NC或2NO + 2NC	工作温度 Ambient temperature: -20°C ~ +60°C
触点类型 Contact type: 强制导向型	储存温度 Storage temperature: -40°C ~ +80°C
触点材料 Contact material: AgSnO ₂ +0.2μmAu	相对湿度 Relative humidity: 10%RH ~ 90%RH(40 °C)
触点容量 Contact loading: AC-15: 5A/230V, DC-13: 5A/24V	大气压力 Atmosphere pressure: 80kPa ~ 106kPa
触点熔丝保护 Contact fuse protection: 10A gL/gG(NO), 6A gL/gG(NC)	海拔高度 Operating altitude: ≤ 2000m
时间参数 Times	机械参数 Mechanical
吸合时间 Switch-on: 自动复位: ≤ 300ms, 手动复位: ≤ 150ms	机械寿命 Mechanical life: 10×10 ⁶ cycles
释放时间 Release: 急停操作: ≤ 30ms, 电源失效: ≤ 100ms	连接类型 Connect type: 螺钉端子
恢复时间 Recovery time: 急停操作: ≤ 30ms, 电源失效: ≤ 100ms	安装类型 Install type: DIN35
电源短时中断 Supply short interruption: 20ms	重量 Weight: 180g

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安全参数 Safety Values

性能等级 Performance level: PL _e ,符合ISO 13849	安全完整性等级 SIL: SIL3,符合IEC 61508
安全类别 Category: Cat.4,符合ISO 13849	声明安全完整性等级 SIL CL: SIL CL3,符合IEC 62061
诊断测试间隔 DTI: 至少1次/天,符合ISO 13849	硬件故障裕度 HFT: 1,符合IEC 62061
任务时间 PT1 (T _M): 20年,符合ISO 13849	安全失效分数 SFF: ≥ 99%,符合IEC 62061
平均诊断覆盖率 DC _{avg} : 99%,符合ISO 13849	要求时危险失效概率 DC _{avg} /PT1 = 20 years: 1.29×10 ⁻⁵ ,符合IEC 62061
平均危险失效时间 MTTF _D : 164年,符合ISO 13849	每小时危险失效概率 PFH: 1.49×10 ⁻¹⁰ 1/h,符合IEC 62061
共因失效 CCF: 68,符合ISO 13849	停止类别 Stop Category: 0,符合IEC 60204



警告!
按照欧洲机械指令使用产品时,必须检查继电器输出的安全触点是否正确断开。再次启动设备或断开安全触点(关闭输出),以便内部诊断安全触点是否正确断开。诊断测试间隔应至少1次/天。

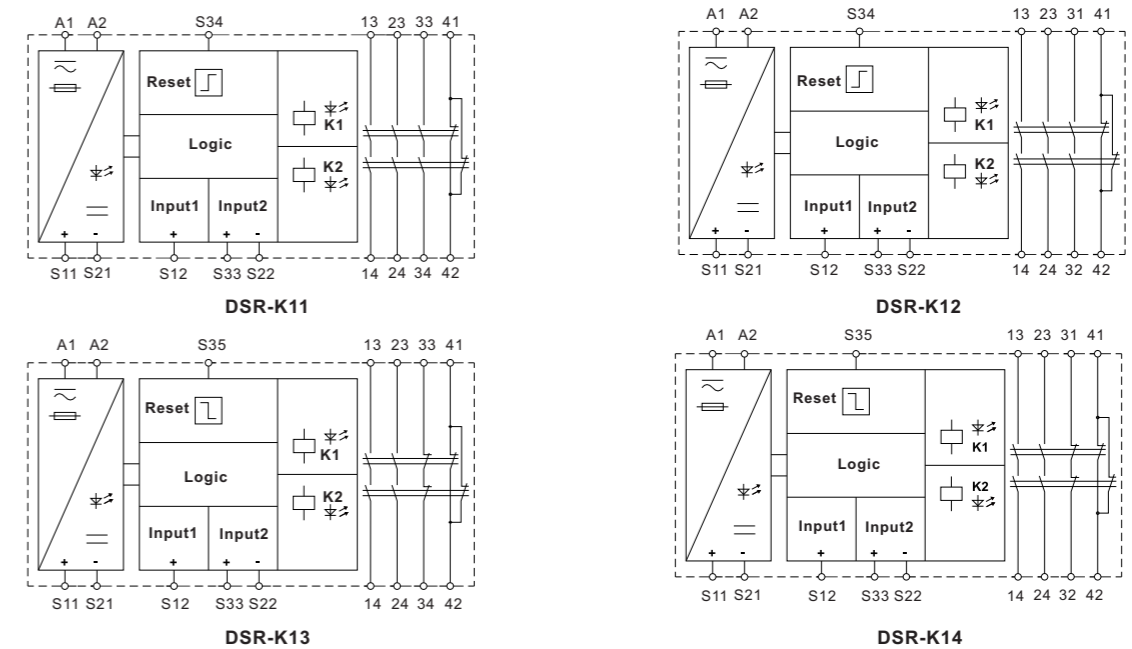
CAUTION!
When using the product in accordance with the European Machinery Directive, it has to be checked whether the safety contacts of the relay outputs open correctly. Start the device again or open the safety contacts (switch off output), so that the internal diagnostics can check the correct opening of the safety contacts. Diagnosis test interval shall be tested at least 1x per day.

B_{10d} 机械安全控制系统:
B_{10d} values for safety-related control system of machinery

AC-15, U _e = 250V	Cycles
le = 5A, 1 NO	200000
le = 3A, 1 NO	230000
le = 1A, 1 NO	380000
DC-13, U _e = 24V	
le = 5A, 1 NO	300000
le = 2A, 1 NO	2000000
le = 1A, 1 NO	7000000

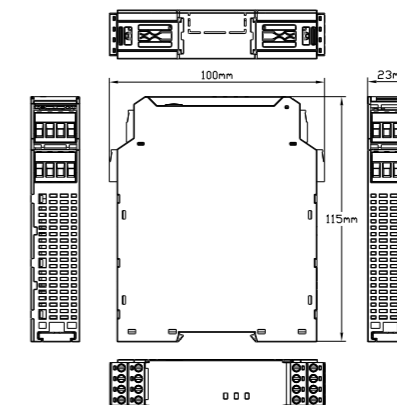
所有B_{10d}的置信度为50%
Confidence level for all B_{10d} values 50%

功能框图 Functional Block Diagram



外形结构 Dimension

宽×高×深: 23mm×100mm×115mm
Width × Height × Depth: 23mm×100mm×115mm



急停按钮、安全门输入(带延时输出)安全继电器 E-STOP, Safety gate input (with delay output) safety relay



急停按钮、安全门安全继电器的输入都为常闭触点信号,常用于紧急制动或对进入危险区域的人员的保护,广泛应用于机械、食品等行业。
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.

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适用型号 Model

产品型号 Model	自动复位 Auto	手动复位 Manual	监控手动复位 Monitored
DSR-K31	■	■	
DSR-K32			■

技术参数 Parameters

电源参数 Power supply		环境特性 Environmental	
额定电压 Voltage range	24V DC	电磁兼容 EMC	符合IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4 According to IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4
电压容差 Voltage tolerance	0.85 ~ 1.1	额定绝缘电压 Rated insulation voltage	250V AC
整机功耗 Power dissipation	≤ 3.8W/24V DC	额定冲击耐受电压 Rated impulse voltage	6000V(1.2/50μs)
输入参数 Input		绝缘强度 Dielectric strength	1500V AC, 1min
输入电流 Current consumption	≤ 50mA/24V DC	电气间隙和爬电距离 Clearance and creepage	符合IEC 60947-1 According to IEC 60947-1
导线电阻 Cable resistance	≤ 15Ω	振动 Vibration	10Hz ~ 55Hz, 0.35mm
输入设备 Input devices	急停按钮、安全门 E-STOP button, Safety gate	过压等级 Overvoltage category	III
输出参数 Output		污染等级 Pollution degree	2
触点数量 Signal type	2NO(瞬时)+2NO(延时) 2NO, non-delay + 2NO, d-delay	防护等级 Protection type	IP20
触点类型 Contact type	强制导向型 Forced guided	工作温度 Ambient temperature	-20°C ~ +60°C
触点材料 Contact material	AgSnO ₂	储存温度 Storage temperature	-40°C ~ +80°C
触点容量 Contact loading	AC-15:3A/230V; DC-13:3A/24V	相对湿度 Relative humidity	10% RH ~ 90% RH(40 °C)
触点熔丝保护 Contact fuse protection	10A gL/gG(NO)	大气压力 Atmosphere pressure	80kPa ~ 106kPa
时间参数 Times		海拔高度 Operating altitude	≤ 2000m
延时时间T _{del} Delay time T _{del}	0.1s ~ 80s(默认10s) 0.1 ~ 80 s, default 10 s	机械参数 Mechanical	
延时精度 Delay time accuracy	± 15 %	机械寿命 Mechanical life	10×10 ⁶ cycles
吸合时间 Switch-on	自动复位: ≤ 300ms, 手动复位或带监控手动复位: ≤ 150ms Auto: ≤ 300ms, Manual: ≤ 150ms	连接类型 Connect type	螺钉端子 Screw terminal
释放时间 Release	急停操作: ≤ 30ms, 电源失效: ≤ 100ms E-stop: ≤ 30ms, Power failure: ≤ 100ms	安装类型 Install type	DIN35
恢复时间 Recovery time	急停操作: ≤ 30ms+T _{del} , 电源失效: ≤ 100ms E-stop: ≤ 30ms+T _{del} , Power failure: ≤ 100ms	重量 Weight	180g
电源短时中断 Supply short interruption	20ms		

急停按钮、安全门输入(带延时输出)安全继电器 E-STOP, Safety gate input (with delay output) safety relay

安全参数 Safety Values

性能等级 Performance level	PLe,符合ISO 13849 ¹⁾ ; PLd,符合ISO 13849 ²⁾ PLe, according to ISO 13849 ¹⁾ ; PLd, according to ISO 13849 ²⁾	安全完整性等级 SIL	SIL3,符合IEC 61508 SIL3, according to IEC 61508
安全类别 Category	Cat.4,符合ISO 13849 ¹⁾ ; Cat.3,符合ISO 13849 ²⁾ Cat.4, according to ISO 13849 ¹⁾ ; Cat.3, according to ISO 13849 ²⁾	声明安全完整性等级 SIL CL	SIL CL3,符合IEC 62061 SIL CL3, according to IEC 62061
诊断测试间隔 DTI	至少1次/天,符合ISO 13849 ¹⁾ 至少1次/3个月,符合ISO 13849 ²⁾ At least 1x per day, according to ISO 13849 ¹⁾ at least 1x per three months, according to ISO 13849 ²⁾	硬件故障裕度 HFT	1,符合IEC 62061 1, according to IEC 62061
任务时间 PTI (T _M)	20年,符合ISO 13849 20 years, according to ISO 13849	安全失效分数 SFF	≥ 99%,符合IEC 62061 ≥ 99%, according to IEC 62061
平均诊断覆盖率 DC _{avg}	99%,符合ISO 13849 ¹⁾ ; 99%,符合ISO 13849 ²⁾ 99%, according to ISO 13849 ¹⁾ ; 90%, according to ISO 13849 ²⁾	要求时危险失效概率 DC _{avg} /PTI = 20 years	1.29×10 ⁻¹¹ /PTI=20年,符合IEC 62061 ¹⁾ 1.53×10 ⁻¹¹ /PTI=20年,符合IEC 62061 ¹⁾ 1.59×10 ⁻¹¹ /PTI=20年,符合IEC 62061 ²⁾ 1.29×10 ⁻¹¹ , according to IEC 62061 ¹⁾ 1.53×10 ⁻¹¹ , according to IEC 62061 ¹⁾ 1.59×10 ⁻¹¹ , according to IEC 62061 ²⁾
平均危险失效时间 MTTF _D	164年,符合ISO 13849 ¹⁾ 161年,符合ISO 13849 ²⁾ 164 years, according to ISO 13849 ¹⁾ 161 years, according to ISO 13849 ²⁾	每小时危险失效概率 PFH	1.49×10 ⁻¹⁵ /h,符合IEC 62061 ¹⁾ 1.77×10 ⁻¹⁵ /h,符合IEC 62061 ¹⁾ 1.85×10 ⁻¹⁵ /h,符合IEC 62061 ²⁾ 1.49×10 ⁻¹⁵ /h, according to IEC 62061 ¹⁾ 1.77×10 ⁻¹⁵ /h, according to IEC 62061 ¹⁾ 1.85×10 ⁻¹⁵ /h, according to IEC 62061 ²⁾
共因失效 CCF	68,符合ISO 13849 68, according to ISO 13849	停止类别 Stop Category	0,符合IEC 60204 ¹⁾ ; 1,符合IEC 60204 ²⁾ 0, according to IEC 60204 ¹⁾ ; 0, according to IEC 60204 ²⁾

注: 1) 对于瞬时触点:13/14, 23/24 2) 对于延时触点:37/38, 47/48
NOTE: 1) For non-delay contacts: 13/14, 23/24 2) For de-delay contacts: 37/38, 47/48



警告!
按照欧洲机械指令使用产品时,必须检查继电器输出的安全触点是否正确断开。再次启动设备或断开安全触点(关闭输出),以便内部诊断安全触点是否正确断开。
诊断测试间隔非延时通道:应至少1次/天,延时通道:至少1次/3个月。

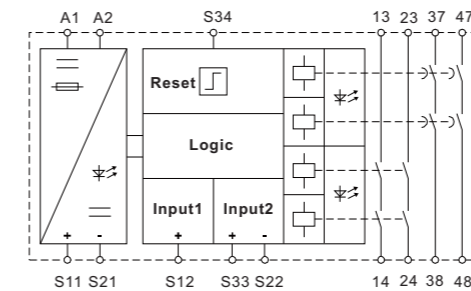
CAUTION!
When using the product in accordance with the European Machinery Directive, it has to be checked whether the safety contacts of the relay outputs open correctly. Start the device again or open the safety contacts (switch off output), so that the internal diagnostics can check the correct opening of the safety contacts.
Diagnosis test interval: Non-delay channel shall be tested at least 1x per day; Delay channel shall be tested at least 1x per three months.

B_{10d}机械安全控制系统:
B_{10d} values for safety-related control system of machinery

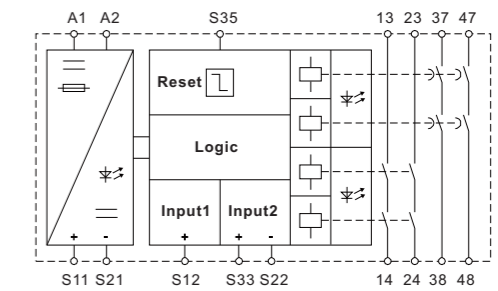
AC-15, U _e = 250V	Cycles
I _e = 3A, 1 NO	400000
I _e = 1A, 1 NO	200000
DC-13, U _e = 24V	
I _e = 3A, 1 NO	450000
I _e = 1A, 1 NO	200000
I _e = 0.75A, 1 NO	200000

所有B_{10d}的置信度为50%
Confidence level for all B_{10d} values 50%

功能框图 Functional Block Diagram



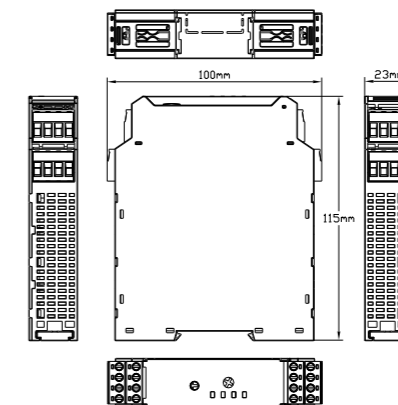
DSR-K31



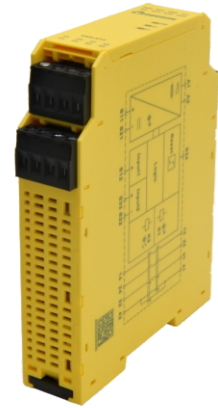
DSR-K32

外形结构 Dimension

宽×高×深: 23mm×100mm×115mm
Width × Height × Depth: 23mm×100mm×115mm



DO信号输入安全继电器 DO signal input safety relay



DO输入安全继电器, 采用符合EN 50205标准的机械联锁触点, 实现多组安全输出, 高通断容量和便利可靠的诊断功能。可用于符合IEC 61508标准的SIL3, SC3的安全相关应用, 常用于SIS中的ESD应用。

K series DO signal input safety relay applies mechanical interlock conforming to EN 50205 standard to realize multiple safety outputs. Up to 5A functional current and reliable diagnosis. It can be used for safety related applications of SIL3 and SC3 in accordance with IEC 61508 standard, and ESD in SIS.

- 1oo2结构
- 输出为失电安全型
- 支持回路检测功能
- 内置测试脉冲滤波功能
- 在每一个接通-关闭周期内, 安全继电器可以自动检测出是否正确地开启和闭合
- 1oo2 architecture
- Relay contact output for de-energized to safe function
- System loop detection support
- Built-in test pulse filter function
- The correct opening and closing of the safety function relays is tested automatically in each on-off cycle

适用型号 Model

产品型号 Model	输入设备 Input	输出触点 Output
DSR-K71	安全开关、DO信号 Safety switch, DO signal	3NO+1NC
DSR-K72	安全开关、DO信号 Safety switch, DO signal	2NO+2NC

技术参数 Parameters

电源参数 Power supply		环境特性 Environmental	
供电类型 Power supply type	回路供电 Loop supply	电磁兼容 EMC	符合IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4 According to IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4
额定电压 Voltage range	20V~32V DC(典型值24V) 20 ~ 30 V DC (Typ. 24 V)	额定绝缘电压 Rated insulation voltage	250V AC
整机功耗 Power dissipation	≤2.2 W/24V DC	额定冲击耐受电压 Rated impulse voltage	6000V(1.2/50μs)
输入参数 Input		绝缘强度 Dielectric strength	1500V AC, 1min
输入电流 Current consumption	≤90mA	电气间隙和爬电距离 Clearance and creepage	符合IEC 60947-1 According to IEC 60947-1
测试脉冲宽度 Test pulse width	≤3ms	振动 Vibration	10Hz ~ 55Hz, 0.35mm
测试脉冲周期 Test pulse period	100ms	过压等级 Overvoltage category	III
导线电阻 Cable resistance	≤15Ω	污染等级 Pollution degree	2
输入设备 Input devices	安全开关、DO信号 Safety switch, DO signal	防护等级 Protection type	IP20
输出参数 Output		工作温度 Ambient temperature	-20°C~+60°C
触点数量 Signal type	3NO + 1NC或2NO + 2NC 3NO + 1NC or 2NO + 2NC	储存温度 Storage temperature	-40°C~+80°C
触点类型 Contact type	强制导向型 Forced guided	相对湿度 Relative humidity	10%RH ~ 90%RH(40 °C)
触点材料 Contact material	AgSnO ₂ +0.2μmAu	大气压力 Atmosphere pressure	80kPa~106kPa
触点容量 Contact loading	AC-15: 5A/230V, DC-13: 5A/24V	海拔高度 Operating altitude	≤2000m
触点熔丝保护 Contact fuse protection	10A gL/gG(NO), 6A gL/gG(NC)	机械参数 Mechanical	
时间参数 Times		机械寿命 Mechanical life	10×10 ⁶ cycles
吸合时间 Switch-on	≤200ms	连接类型 Connect type	螺钉端子 Screw terminal
释放时间 Release	≤50ms	安装类型 Install type	DIN35
开关频率 Switching frequency	≤4Hz	重量 Weight	180g

DO信号输入安全继电器 DO signal input safety relay



安全参数 Safety Values

性能等级 Performance level	PLe,符合ISO 13849 PLe, according to ISO 13849	安全完整性等级 SIL	SIL3,符合IEC 61508 SIL3, according to IEC 61508
安全类别 Category	Cat.4,符合ISO 13849 Cat.4, according to ISO 13849	声明安全完整性等级 SIL CL	SIL CL3,符合IEC 62061 SIL CL3, according to IEC 62061
诊断测试间隔 DTI	至少1次/天,符合ISO 13849;至少1次/年,符合IEC 61508 At least 1x per day, according to ISO 13849; At least 1x per year, according to IEC 61508	硬件故障裕度 HFT	1,符合IEC 62061 1, according to IEC 62061
任务时间 PTI (T _M)	20年,符合ISO 13849 20 years, according to ISO 13849	安全失效分数 SFF	≥99%,符合IEC 62061 ≥99%, according to IEC 62061
平均诊断覆盖率 DC _{avg}	99%,符合ISO 13849 99%, according to ISO 13849	要求时危险失效概率 DC _{avg} /PTI = 20 years	1.29×10 ⁻⁵ /PTI=20年,符合IEC 62061 1.29×10 ⁻⁵ , according to IEC 62061
平均危险失效时间 MTTF _D	164年,符合ISO 13849 164 years, according to ISO 13849	每小时危险失效概率 PFH	1.49×10 ⁻¹⁰ 1/h,符合IEC 62061 1.49×10 ⁻¹⁰ 1/h, according to IEC 62061
共因失效 CCF	68,符合ISO 13849 68, according to ISO 13849	停止类别 Stop Category	0,符合IEC 60204 0, according to IEC 60204



警告!

诊断测试间隔应至少1次/天。

CAUTION!

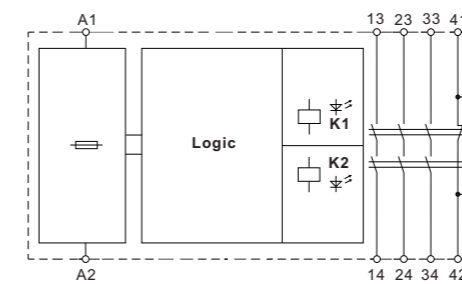
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 B_{10d} 机械安全控制系统:
B_{10d} values for safety-related control system of machinery

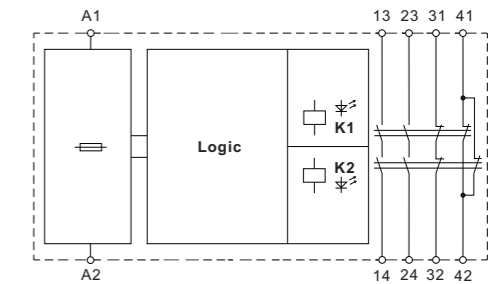
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le = 5A, 1 NO	300000
le = 2A, 1 NO	2000000
le = 1A, 1 NO	7000000

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功能框图 Functional Block Diagram



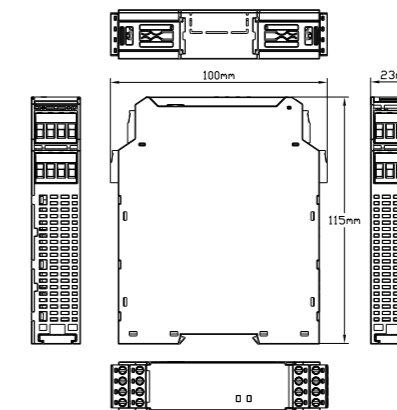
DSR-K71



DSR-K72

外形结构 Dimension

宽×高×深: 23mm×100mm×115mm
Width × Height × Depth: 23mm×100mm×115mm



安全光幕输入安全继电器 Two-hand control safety relay



安全光幕安全继电器的输入都为常闭触点信号,常用于紧急制动或对进入危险区域的人员的保护,广泛应用于机械、食品等行业。

K series two-hand control safety relays are used to ensure that the operator's hands are kept away from the dangerous area and avoid injury during the hazardous movement. Used in mechanical presses or safety circuits with safety requirements.

- 1oo2结构
- 具有通道间交叉短路诊断功能
- 支持自动复位,手动复位
- 元件发生单一故障时,仍能保持安全功能
- 在每一个接通-关闭周期内,安全继电器可以自动检测出是否正确地开启和闭合
- 1oo2 architecture
- With detection of shorts across contacts
- With auto reset and manual reset or 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

适用型号 Model

产品型号 Model	自动复位 Auto	手动复位 Manual	监控手动复位 Monitored
DSR-K73	■	■	3NO+1NC
DSR-K74	■	■	2NO+2NC

技术参数 Parameters

电源参数 Power supply		环境特性 Environmental	
额定电压 Voltage range	24V DC	电磁兼容 EMC	符合IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4 According to IEC/EN 60947, IEC 61326-3-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4
电压容差 Voltage tolerance	0.85 ~ 1.1	额定绝缘电压 Rated insulation voltage	250V AC
整机功耗 Power dissipation	≤ 2.2W/24V DC	额定冲击耐受电压 Rated impulse voltage	6000V(1.2/50μs)
输入参数 Input		绝缘强度 Dielectric strength	1500V AC, 1min
输入电流 Current consumption	≤ 50 mA/24V DC	电气间隙和爬电距离 Clearance and creepage	符合IEC 60947-1 According to IEC 60947-1
导线电阻 Cable resistance	≤ 15Ω	振动 Vibration	10Hz ~ 55Hz, 0.35mm
输入设备 Input devices	NPN安全光幕 Two-hand modules (according to EN574, Type IIIC)	过压等级 Overvoltage category	III
输出参数 Output		污染等级 Pollution degree	2
触点数量 Signal type	3NO + 1NC或2NO + 2NC 3NO + 1NC or 2NO + 2NC	防护等级 Protection type	IP20
触点类型 Contact type	强制导向型 Forced guided	工作温度 Ambient temperature	-20°C ~ +60°C
触点材料 Contact material	AgSnO ₂ +0.2μmAu	储存温度 Storage temperature	-40°C ~ +80°C
触点容量 Contact loading	AC-15: 5A/230V, DC-13: 5A/24V	相对湿度 Relative humidity	10% RH ~ 90% RH(40 °C)
触点熔丝保护 Contact fuse protection	10A gL/gG(NO), 6A gL/gG(NC)	大气压力 Atmosphere pressure	80kPa ~ 106kPa
时间参数 Times		海拔高度 Operating altitude	≤ 2000m
吸合时间 Switch-on	自动复位: ≤ 300ms, 手动复位: ≤ 150ms Auto: ≤ 300ms, Manual: ≤ 150ms	机械参数 Mechanical	
释放时间 Release	急停操作: ≤ 30ms, 电源失效: ≤ 100ms E-stop: ≤ 30ms, Power failure: ≤ 100ms	机械寿命 Mechanical life	10×10 ⁶ cycles
恢复时间 Recovery time	急停操作: ≤ 30ms, 电源失效: ≤ 100ms E-stop: ≤ 30ms, Power failure: ≤ 100ms	连接类型 Connect type	螺钉端子 Screw terminal
电源短时中断 Supply short interruption	20ms	安装类型 Install type	DIN35
		重量 Weight	180g

安全光幕输入安全继电器 Two-hand control safety relay



安全参数 Safety Values

性能等级 Performance level	PLe,符合ISO 13849 PLe, according to ISO 13849	安全完整性等级 SIL	SIL3,符合IEC 61508 SIL3, according to IEC 61508
安全类别 Category	Cat.4,符合ISO 13849 Cat.4, according to ISO 13849	声明安全完整性等级 SIL CL	SIL CL3,符合IEC 62061 SIL CL3, according to IEC 62061
诊断测试间隔 DTI	至少1次/天,符合ISO 13849 At least 1x per day, according to ISO 13849	硬件故障裕度 HFT	1,符合IEC 62061 1, according to IEC 62061
任务时间 PTI (T _M)	20年,符合ISO 13849 20 years, according to ISO 13849	安全失效分数 SFF	≥ 99%,符合IEC 62061 ≥ 99%, according to IEC 62061
平均诊断覆盖率 DC _{avg}	99%,符合ISO 13849 99%, according to ISO 13849	要求时危险失效概率 DC _{avg} /PTI = 20 years	1.29×10 ⁻³ /PTI=20年,符合IEC 62061 1.29×10 ⁻⁵ , according to IEC 62061
平均危险失效时间 MTTF _D	164年,符合ISO 13849 164 years, according to ISO 13849	每小时危险失效概率 PFH	1.49×10 ⁻¹⁰ 1/h,符合IEC 62061 1.49×10 ⁻¹⁰ 1/h, according to IEC 62061
共因失效 CCF	68,符合ISO 13849 68, according to ISO 13849	停止类别 Stop Category	0,符合IEC 60204 0, according to IEC 60204



警告!
按照欧洲机械指令使用产品时,必须检查继电器输出的安全触点是否正确断开。再次启动设备或断开安全触点(关闭输出),以便内部诊断安全触点是否正确断开。诊断测试间隔应至少1次/天。

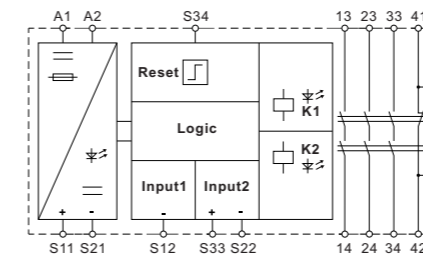
CAUTION!
When using the product in accordance with the European Machinery Directive, it has to be checked whether the safety contacts of the relay outputs open correctly. Start the device again or open the safety contacts (switch off output), so that the internal diagnostics can check the correct opening of the safety contacts. Diagnosis test interval shall be tested at least 1x per day.

B_{10d}机械安全控制系统:
B_{10d} values for safety-related control system of machinery

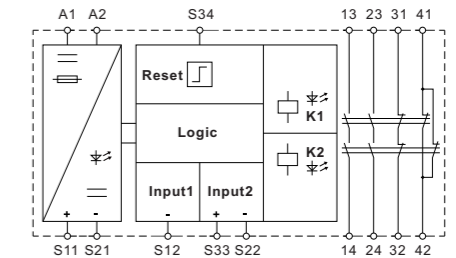
AC-15, U _e = 250V	Cycles
le = 5A, 1 NO	200000
le = 3A, 1 NO	230000
le = 1A, 1 NO	380000
DC-13, U _e = 24V	
le = 5A, 1 NO	300000
le = 2A, 1 NO	2000000
le = 1A, 1 NO	7000000

所有B_{10d}的置信度为50%
Confidence level for all B_{10d} values 50%

功能框图 Functional Block Diagram



DSR-K73



DSR-K74

外形结构 Dimension

宽×高×深: 23mm×100mm×115mm
Width × Height × Depth: 23mm×100mm×115mm

