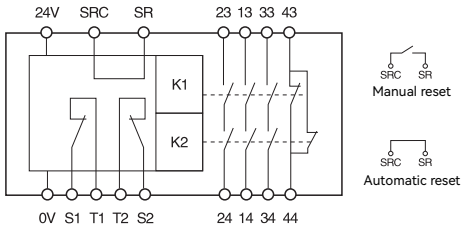
System module diagram



Description of terminal functions

Power supply	Power supply positive (24VDC)	
	Power supply negative (0V)	
T1	Channel 1 signal output	Type I signal source
S1	Channel 1 safety input	Accept type I signal input, open circuit detection and channel 2 mutual detection
T2	Channel 2 signal output	Type II signal source
S2	Channel 2 safety input	Type II signal input is accepted, open circuit detection and channel 1 mutual detection
SR SRC	Reset input (configurable manual reset or automatic reset)	Short-circuited SRS and SRC reset automatically and disconnected SRS and SRC reset manually
13/14 23/24 33/34	NO transient safety contact	To increase the number of contacts
43/ 44	NC transient safety contact	Can be used as external signal light or control other devices

LED Description

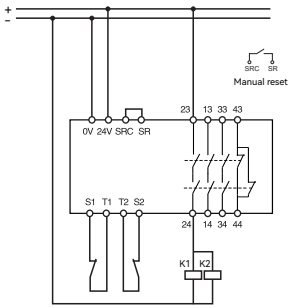
– LED indicator status

■Steady on ★☆Flicker ☐Extinguish

Feature	Status	Power LED	Input LED	Output LED
Emergency stop / Interlock	The input connection is disconnected or abnormal	■	★☆	☐
	The input single channel is abnormal	■	■	★☆
	Emergency stop press/Interlock opens	■	★☆	☐
	Input is correct/not reset	■	■	☐
	Input is correct/reset	■	■	■
	System failure	★☆	☐	☐
Light curtain / PNP switch	Input disconnected/abnormal connection	■	★☆	☐
	Input single channel abnormality	■	■	★☆
	Light curtain interrupted/switch actuated	■	★☆	☐
	Input is correct/not reset	■	■	☐
	Input is correct/reset	■	■	■
	System failure	★☆	☐	☐
Two-handed switch (Valid for automatic reset only)	Input disconnected/abnormal connection	■	★☆	☐
	Two-hand switch pressed	■	■	■
	Two-hand switch released	■	★☆	☐
	System failure	★☆	☐	☐

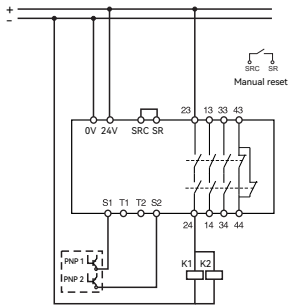
Wiring Example

Emergency stop

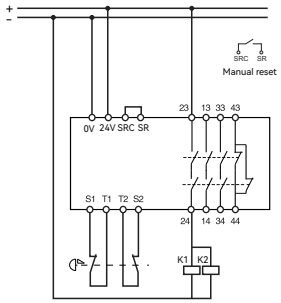


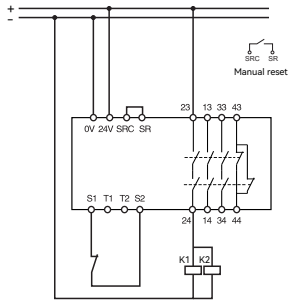
1. Dual-channel emergency stop safety input with manual reset.

Connect to safety light curtain



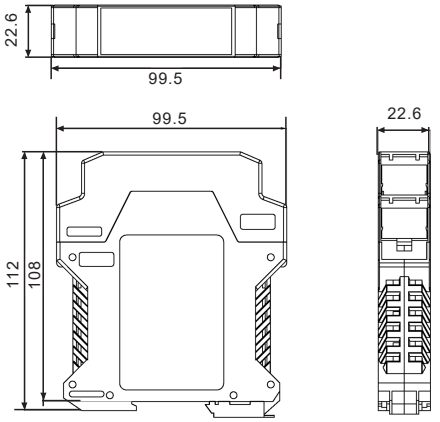
Connect security door lock





3.Single-channel light curtain/PNP switch safety input with automatic reset and PLC signal output.

Product size



DADISICK®

Safety relays DK-LS-A

User Manual

CE

Performance Level: PLE
Safety Level: Cat. 4

EN 60947-1:2007/A2:2014
EN 60947-5-1:2004/A1:2009
EN ISO 13849-1: 2015
EN 62061:2005+A2:2015

Please read this instruction manual carefully before using the product and keep it properly.

⚠ Notice

- Please verify that the model and specifications on the product packaging and label are consistent with the order contract. Please carefully read this instruction manual before installing and using the safety relay. If you have any questions, please contact DADISICK.
- The safety relay should be installed in a control cabinet with a minimum IP54 protection rating.
- The instrument is powered by a 24V AC/DC power supply. Do not use a 220V AC power supply.
- Unauthorized disassembly or installation of the instrument is strictly prohibited to prevent instrument failure or malfunction.

Features

- Complies with up to PLe standards of ISO 13849-1 and SiL3 standards of IEC 62061;
- Proven dual-channel safety monitoring circuit design;
- Input and output LED indicators;
- 22.5mm width for reduced installation space;
- Optional screw terminals or spring terminals for wider compatibility;
- PLC signal output.

Product application range

Suitable for monitoring

Emergency stop button	Safety light curtain	Safety sensor
Safety switch	Safety scanner	Two-hand switch
Safety door lock		

Forced safety output
3NO / 1NC

Forced safety output

Injection molding machines, CNC machine tools, presses/hydraulic presses, glass machinery, filling machinery, packaging machinery, sorting machinery, woodworking machinery, papermaking machinery, intelligent forklifts, AGVs, robots, elevators, wind power, SIS systems, etc.

Technical Parameters

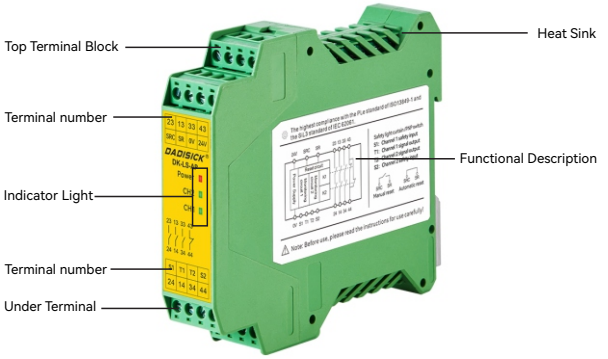
Product model		
Model	DK-LS-AN	DK-LS-AP
Output method	NPN	PNP
Power Supply		
Power Supply	24V DC	
Voltage Tolerance	+10%/-20%	
Power Consumption	2.9 W	
Output		
Relay safety output	3NO+1NC	
	<500mA 24VDC	
Relay contact capacity		
AC -1	6A/250VAC/1500VA	
AC -15	4A/240VAC	
DC -1	6A/24VDC /150W	
DC-13	4A/24VDC	
Maximum switching capacity	12A (distributed on all safety output contacts)	
Contact resistance	<100mΩ	
Minimum load	10mA /5V	
Contact material	AgSnO2 + 0.2μmAu	

General parameters	
Output fuse (external)	5A gL/gG
Release response time	<30ms (from input to output)
Input component end-of-line detection resistor (edge / mat)	1kΩ ~ 10kΩ
General parameters	
Electrical life	80000 times
Pollution level	2
Operating temperature	-25℃ ~ 85℃
Operating humidity	35%-85% (no ice or condensation)
Impact withstand voltage	2.5kV
Protection level	Housing IP30, terminals IP20, recommended installation in cabinet or housing IP54 .
Storage temperature	-40℃ ~ 105℃
Casing material	Flame retardant PA66
Mounting method	Standard 35mm DIN rail/spring clip
Dimensions	112mm×99.5mm×22.6mm
Weight	172g
Connection parameters	
Available cross-sections for rigid conductors	0.5~2.5mm²
Available cross-sections for flexible conductors	0.5~2.5mm²
Minimum conductor cross-section	AWG 24
Maximum conductor cross-section	AWG 12
Stripping length	8mm
Minimum tightening torque	0.5 Nm
Maximum tightening torque	0.6 Nm

Security Certification

Performance level: PLe
Security Category: Cat.4
Task Time: 20 years
Diagnostic coverage: 99%
Safety Integrity Level: SIL3
Dangerous failure rate: 2.10E-09
Comply standards: ENISO 13849
Comply standards: ENISO 13849
Comply standards: ENISO 13849
Comply standards: ENISO 13849
Comply standards: EN62061:2005+A2:2015
Comply standards: EN62061:2005+A2:2015

Product Description



Safety forced-off relay outputs

Three normally open momentary safety contacts (3NO)
One normally closed momentary safety contact (1NC)

LED indicator light

Power Indicator
Input Status Indicator
Output Status Indicator

Automatic reset switch

Configurable automatic/manual reset switch.
It can be configured to accommodate a variety of functional safety features, including emergency stop, light curtain, door lock, and two-hand switch.
Safety functions remain effective even in the event of component failure.