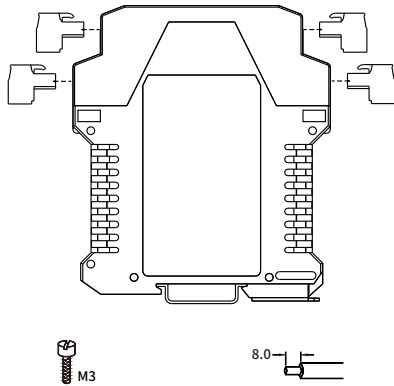


■ Connections

1. The module adopts knock-down connector with screw terminals.
2. The minimum cross section area of the flexible copper wire on the input side should be 0.5mm^2 , and 1mm^2 on the output side.
3. A length of 8mm bared wire is locked by the M3 bolt.
4. Sufficient fuse protection must be provided to the output contacts.
5. The copper wire must tolerate ambient temperature at least 75°C .
6. Wrong use of the terminal screws may cause malfunction, heat, etc., so please tighten the screws with the torque of 0.5Nm .



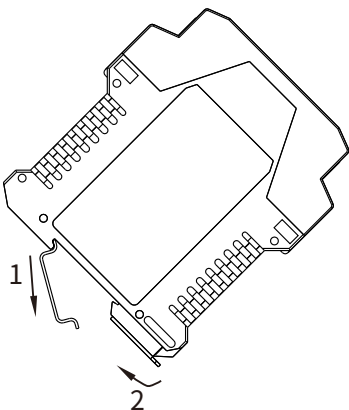
■ Installation

The safety relay should be installed in a housing at least IP54 (IEC60529) degree of protection, and the installation and using should fulfill the related requirements of IEC 60204-1.

DK-LS-2A4S series safety relays are designed for mounting on guide rail.

Installation according to the following steps:

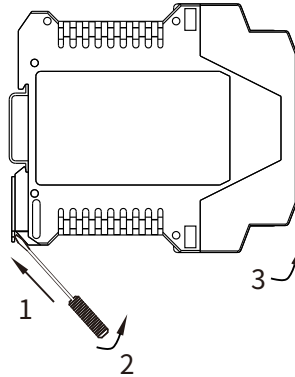
1. Make the upside of the device locked into the guide rail;
2. Push the downside of the device in the rail.



4

■ Disassembly

1. Insert a screwdriver (its edge length $\leq 6\text{mm}$) into the downside metal lock of the device;
2. Push the screwdriver upwards, then prize the metal lock downwards;
3. Take the device out of the guide rail.



5

■ Maintenance

1. Please check the safety function of safety relay periodically, make sure the safety function executes properly, and there is no sign of any components or circuit changed or bypassed.
2. Please observe relevant safety regulations, and operate according to this user manual. Disregarding these safety regulations may cause fatal accident, serious personal injury or property loss.
3. Every product has been test strictly before leaving factory. If users find any abnormality in the module, please contact the nearest agent or our technic support hot-line.
4. In 5 years from the delivery date, if the product works improperly during normal operation, we will repair or replace it without payment.

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We reserve the right to make technical changes

DADISICK®

Configurable Safety Control Unit User Manual

DK-LS-2A4S



Performance Level: **PL e**
Category: **Cat.4**



SIL3
IEC61508



Read this instruction sheet to make sure of correct operation.
Make sure that the instruction sheet is kept by the end user.

⚠ CAUTION

- Please check whether the product type on the package accords to the ordering contract;
- Read this manual carefully before installation or using. If anything unclear, please technical dadisick;
- Safety relay should be located in IP54 control cabinet;
- Supply voltage is 24V DC, 220V AC is forbidden;
- Users are not allowed to dismantle or repair the product, otherwise it will induce malfunction.

Summarize

DK-LS-2A4S is a configurable safety control unit, suitable for the application of multi switch-type safety devices (e.g. E-Stop buttons, safety gates, two-hand buttons and etc.). It can support Max. 6 safety devices input and 2 relay contacts (N/O) and 4 semi-conductors output. It can be configured with different control logics to meet various field applications.

Specification

POWER

Supply voltage: 24V DC
Voltage range: 20~30V DC
Current consumption: ≤110mA(24V DC)

INPUT

Input current: ≤10mA(24V DC)
Cable resistance: ≤15Ω
Input devices: E-Stop buttons, safety gates, light beams, safety mats, two-hand control buttons, magnetic switches
Input channel: 6

OUTPUT (RELAY)

Number of contacts: 2NO (safety output)
Contact material: AgSnO₂
External contact fuse protection: 10A fast, 6A slow
Switching capacity: 5A/230V AC; 5A/24V DC

Semiconductor Output Characteristics

Number of contacts: 4SO (safety output)
External contact fuse protection: 5A fast, 3A slow
Switching capacity: 2A/24V DC

TIMES

Switch-on delay: ≤100ms
Delay-on de-energisation: ≤30ms

Recovery time:

Trigger operation: ≤30ms
Power failure: ≤1000ms
Supply interruption before de-energisation: 20ms

Safety

PL: PLe
Cat. : Cat.4
TM: 20 years
DC/DCavg: 99%
SIL: SIL3
HFT: 1
SFF: 99%
PFHD: 1.86E-9/h
Stop category: 0/1
B10d:

in accordance with ISO 13849
in accordance with ISO 13849
in accordance with ISO 13849
in accordance with IEC 62061
in accordance with IEC 61508, IEC 62061
in accordance with IEC 61508, IEC 62061
in accordance with IEC 61508, IEC 62061
in accordance with EN 60204-1

| Ue=24V DC: Relay output | | Ue=24V DC: Semi. output | |
|-------------------------|---------|-------------------------|---------|
| le | 5A | le | 2A |
| Cycles | 550,000 | Cycles | 550,000 |

| Ue=230V AC: | |
|-------------|---------|
| le | 5A |
| Cycles | 550,000 |

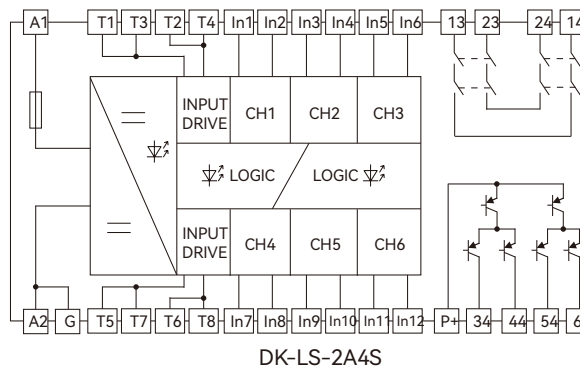
Environmental Characteristics

EMC: In accordance with EN60947, EN61000-6-2, EN61000-6-4
Vibration frequency: 10Hz ~ 55Hz
Vibration amplitude: 0.35mm
Ambient temperature: -20°C ~ +60°C
Storage temperature: -40°C ~ +85°C
Relative humidity: 10% ~ 90%

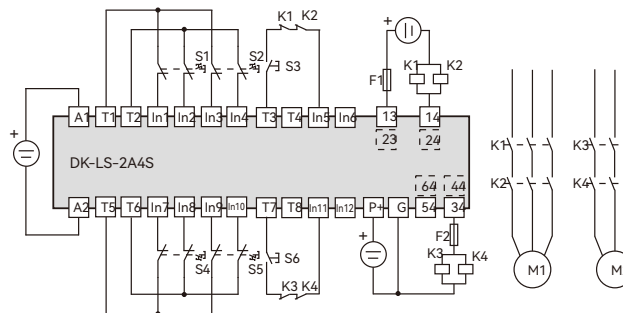
Insulation Characteristic

Clearance and creepage: In accordance with EN60947-1
Overvoltage category: III
Pollution degree: 2
Protection type: IP20
Elevation: ≤2000m
Rated insulation voltage: 250V AC
Rated impulse voltage: 6000V (1.2/50μs)
Dielectric strength: 1500V AC, 1min

Block Diagram

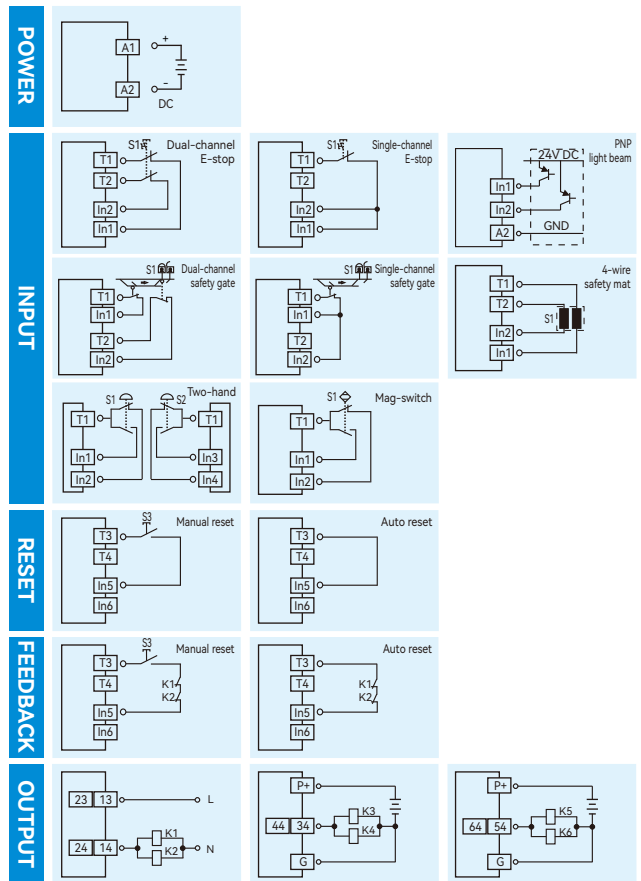


Typical Application



Input elements:
CH1 (emergency stop button); CH2 (emergency stop button); CH3 (reset button)
Input elements:
CH4 (emergency stop button); CH5 (emergency stop button); CH6 (reset button)
Control logic: CH1&CH2 CH4&CH5 Reset method: manual reset Output delay: 0s
Safety level: Cat.4 Performance level: PLe Safety integrity level: SIL3

Wiring Diagrams



Dimensions

Dimensions(L×H×W): 114.5mm×99.0mm×45.0mm
Weight: 300g

