Dold UG6929 Series Safety Relay Extension Module

UG6929-60PS-100-24

Additional contacts for emergency-stop modules and safety gate monitors.

- Safety contact multiplication
- According to
  - Performance Level (PL) e and category 4 to EN ISO 13849-1: 2008
  - SIL Claimed Level (SIL CL) 3 to IEC/EN 62061
  - Safety Integrity Level (SIL) 3 to IEC/EN 61508 and IEC/EN 61511 when connected to a suitable safety module
  - EN 50156-1 for furnaces
- Control with safety semiconductor outputs (light curtain, e-stop) possible
- Redundant and forcibly guided contacts
- Output: up to 7 NO contacts, 1 NC contact for feedback circuit
- 2-channel
- LED Indicator
- Pluggable terminal blocks for easy exchange of devices

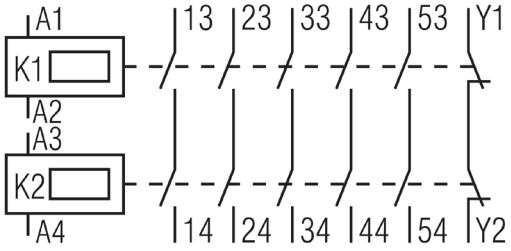
Safety Relays Selection Chart

Part Number	Price	Marking Type	Voltage	Outputs	Drawing
UG6929-60PS-100-24	$145.00	Safety relay extension module	24V AC/DC	5 NO positive guided safety contacts, 1 NC monitoring contacts	PDF
UG6929-61PS-100-24	$167.00	Safety relay extension module	24V AC/DC	6 NO positive guided safety contacts, 2 NC monitoring contacts and indicator	PDF
UG6929-62PS-100-24	$167.00	Safety relay extension module	24V AC/DC	7 NO positive guided safety contacts, 1 NC monitoring contact	PDF

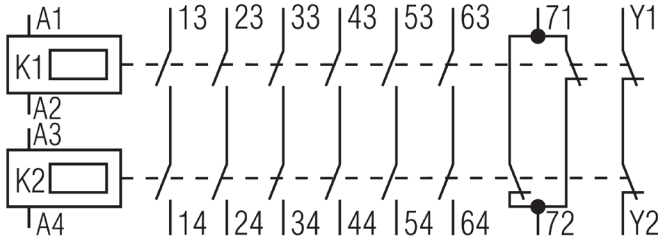
Safety Data – Values per EN ISO 13849-1	
Category	4
Performance level	PLe
$MTTF_d$	144.3 years
DC_{avg}	99%

Safety Data – Values per IEC/EN 62061 /IEC/EN 61508	
SIL CL	3
SIL	3
HFT (Hardware Failure Tolerance)	1
DC_{avg}	99%
PFH_D	$3.59E^{-10}$

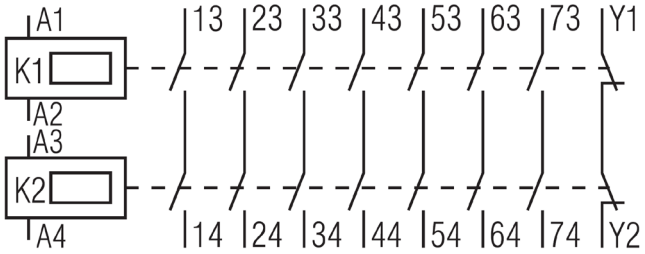
Block Diagrams



UG6929-60PS-100-24



UG6929-61PS-100-24



UG6929-62PS-100-24

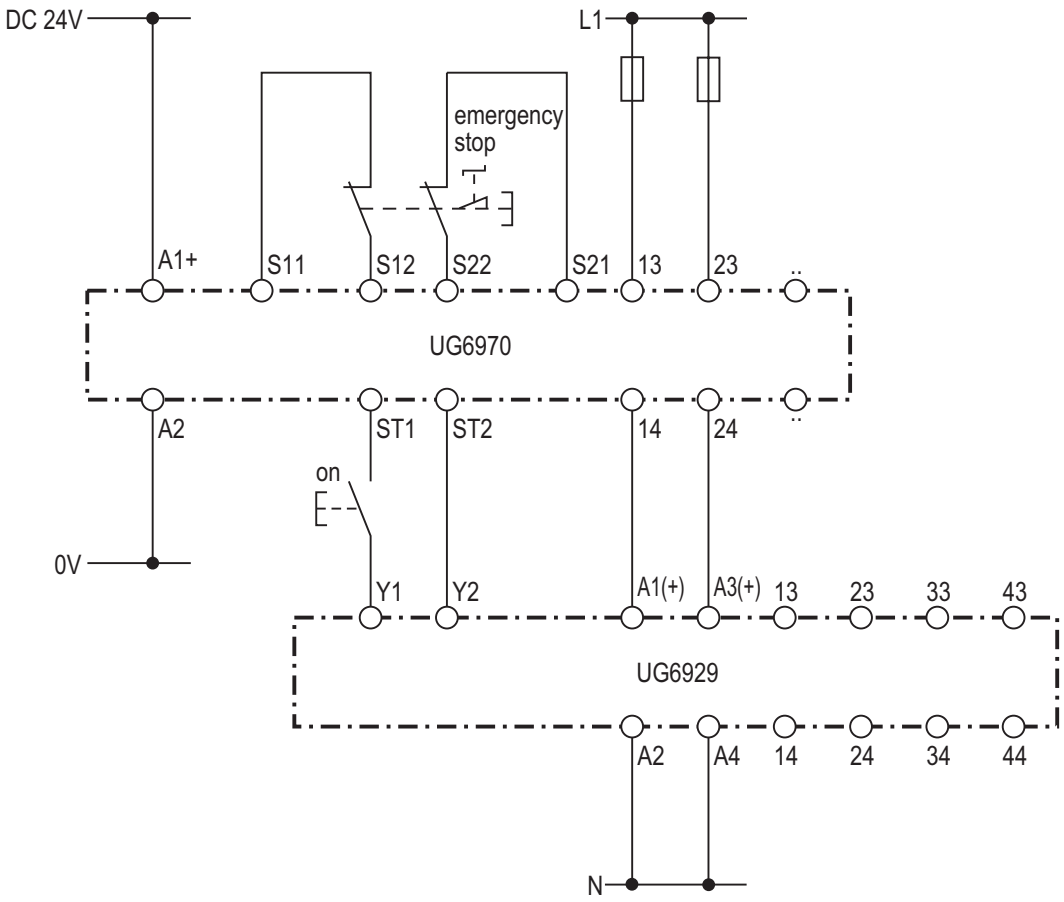
Dold UG6929 Series Safety Relay Extension Module

Dold UG6929 Series Safety Relay Extension Module Specification Table	
General Specifications	
Temperature	Storage: -25°C to 85°C (-13°F to 185°F) Operating: -15°C to 55°C (5°F to 131°F)
Altitude	< 2,000 meters
Vibration Resistance	Amplitude: 0.35mm Frequency: 10 to 55 Hz (IEC/EN 60068-2-6)
Degree of Protection	Per IEC/EN 60 529. Housing: IP40; Terminals IP20
Housing	UL 94V-0 thermoplastic DIN rail mount
Weight	280g (9.88 oz)
Terminal Designation per EN 50005 Wire Connections	1x AWG 24-12 solid or stranded 2x AWG 24-18 solid or stranded
Wire Fixing	Plus-minus terminal screws M3.5 box terminals with wire protection.
Wire Connection	60°C/75°C Copper conductors only AWG20-12 Sol/Str Torque 0.5 N•m
Input Specifications	
Nominal Voltage	24V AC/DC
Voltage Range	AC: 0.85 to 1.1 U_N At 10% residual ripple: 0.9 to 1.1 U_N; At 48% residual ripple: 0.85 to 1.1 U_N
Maximum Consumption	24VAC/DC: 1.8VA
Nominal Frequency	50 to 60 Hz
Control Current	Control current typ. at 24V over 2 relays: 75 mA
Overvoltage Protection	Internal VDR (Voltage Dependent Resistor)
Output Specifications	
Electrical Contact Life	To AC15 at 5A, 230V: $2.2x10^5$ switching cycles IEC/EN 60947-5-1
Mechanical Life	20 x 10^6 switching cycles
Operate/Release Time	Operate: typical at U_N 20ms Release: typical at U_N 35ms
Nominal Output Voltage	250VAC
Thermal Current (I_{th})	Max. 8A per contact. See quadratic total current limit curve in installation manual.
Short Circuit Strength	Max fuse rating: 6A gl (IEC/EN 60 9470-5-1); Line circuit breaker: B6A
Switching Capacity IEC/EN 60 947-5-1	AC 15: NO contacts: 3A/230V; NC contacts: 2A/230VAC DC 13: N.O. contacts: 4A/24V; NC contacts: 4A/24VDC; NO contact: 8A/24V >25x103 ON: 0.4s, OFF: 9.6s
Switching Frequency	Max. 1,200 switching cycles/hr
Agency Approvals and Standards	CSA, cULus file E107778, CE, TUV

To obtain the most current agency approval information, see the Agency Compliance & Certifications Checklist section on the specific part number's web page.

Dold UG6929 Series
Safety Relay Extension Module

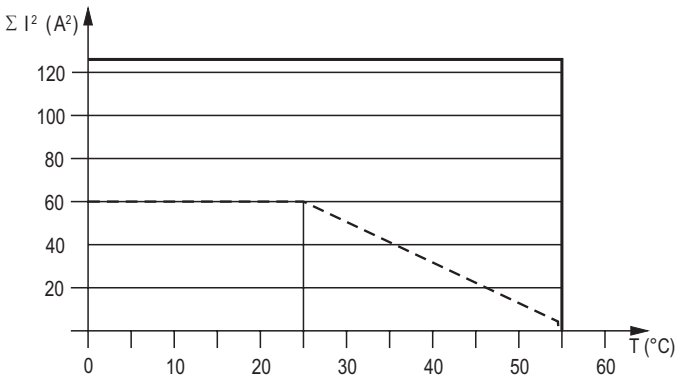
Application Example



Contact extensions with UG6929/100; suited up to SIL3, Performance Level e, Cat. 4

Dold UG6929 Series
Safety Relay Extension Module

Characteristic Curves



AC 230V — device mounted on distance with air circulation.
max. current at 55°C over
5 contact path = 5A ≙ $5x5^2A^2 = 125A^2$

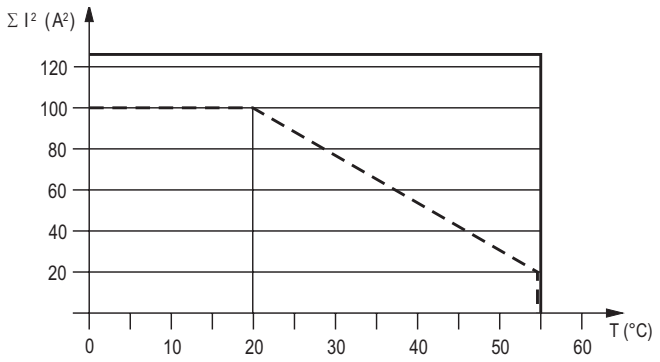
AC 230V - - - - device mounted without distance heated by devices with same load,
max. current at 55°C over
5 contact path = 1A ≙ $5x1^2A^2 = 5A^2$

Quadratic total current

$$\sum I^2_{th} = I^2_{th1} + I^2_{th2} + I^2_{th3} + I^2_{th4} + I^2_{th5}$$

I_{th1} , I_{th2} , I_{th3} , I_{th4} , I_{th5} : current in contact paths

Quadratic total current limit curve AC 230 V



AC / DC 24V — device mounted on distance with air circulation.
max. current at 55°C over
5 contact path = 5A ≙ $5x5^2A^2 = 125A^2$

AC / DC 24V - - - - device mounted without distance heated by devices with same load,
max. current at 55°C over
5 contact path = 2A ≙ $5x2^2A^2 = 20A^2$

Quadratic total current

$$\sum I^2_{th} = I^2_{th1} + I^2_{th2} + I^2_{th3} + I^2_{th4} + I^2_{th5}$$

I_{th1} , I_{th2} , I_{th3} , I_{th4} , I_{th5} : current in contact paths

Quadratic total current limit curve AC/DC 24 V

Safety Products

Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

AutomationDirect does not provide design or consulting services, and cannot advise whether any specific application or use of our products would ensure compliance with the safety requirements for any application.