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 N.O. contacts, 1 N.C. contact for feedback circuit
- 2-channel
- LED Indicator
- Pluggable terminal blocks for easy exchange of devices

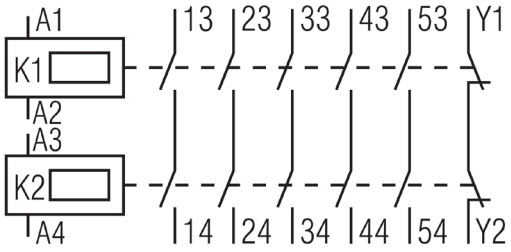
Safety Relays Selection Chart

Part Number	Price	Marking Type	Voltage	Outputs	Drawing
UG6929-60PS-100-24	$161.00	Safety relay extension module	24 VAC/VDC	5 N.O. positive guided safety contacts, 1 N.C. monitoring contacts	PDF
UG6929-61PS-100-24	$187.00	Safety relay extension module	24 VAC/VDC	6 N.O. positive guided safety contacts, 2 N.C. monitoring contacts and indicator	PDF
UG6929-62PS-100-24	$187.00	Safety relay extension module	24 VAC/VDC	7 N.O. positive guided safety contacts, 1 N.C. 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



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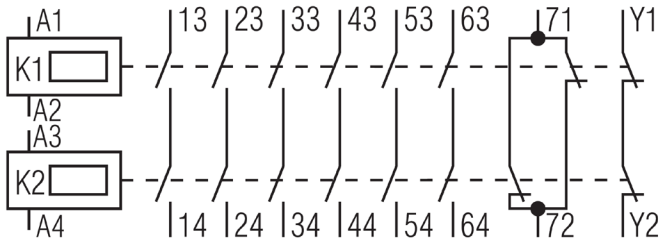

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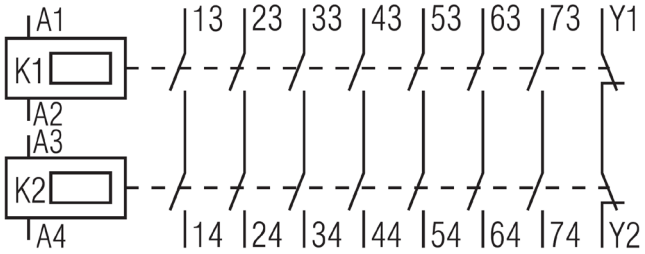

UG6929-62PS-100-24

Dold UG6929 Series
Safety Relay Extension Module

Dold UG6929 Series Safety Relay Extension Module Specification Table	
General Specifications	
Temperature	Storage: -25 to +85 °C [-13 to +185 °F] – Operating: -15 to +55 °C [+5 to +131 °F]
Altitude	< 2000m [6562ft]
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	24 VAC/VDC
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	24 VAC/VDC: 1.8 VA
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, 230 V: $2.2x10^5$ 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	250 VAC
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: N.O. contacts: 3A / 230 V; N.C. contacts: 2A / 230 VAC DC 13: N.O. contacts: 4A / 24 V; N.C. contacts: 4A / 24 VDC; N.O. 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.

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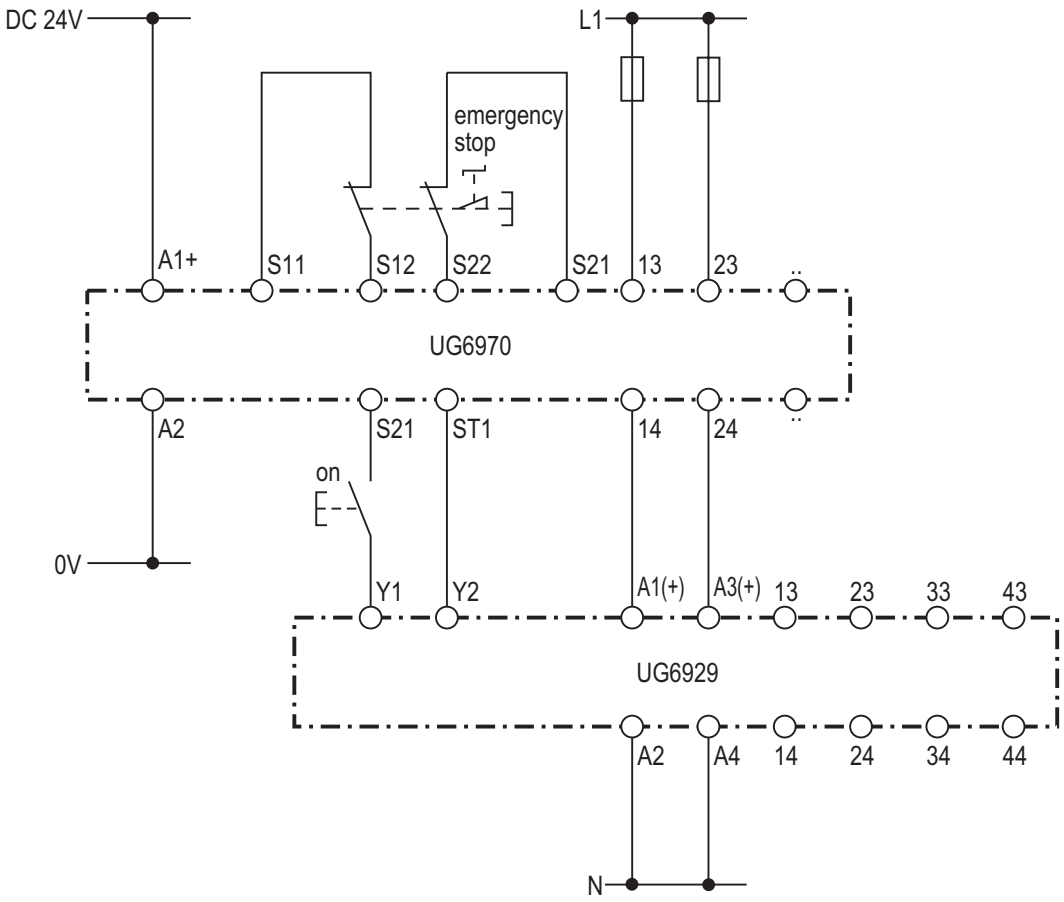
Safety Relay Extension Module

Application Example



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

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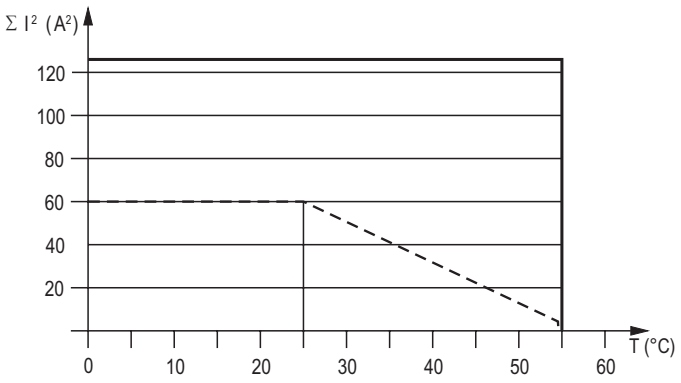
Safety Relay Extension Module

Characteristic Curves



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

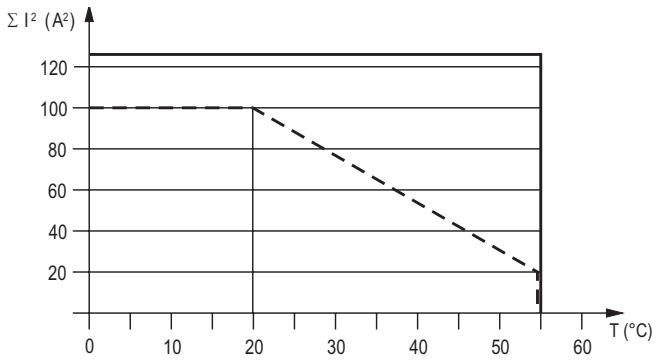
AC 230V - - - - device mounted without distance heated by devices with same load,
max. current at 55°C over
5 contact path = 1A ≙ $5x1^2A^2 = 5A^2$

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

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