Dold UG6929 Series Safety Relay Extension Module

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

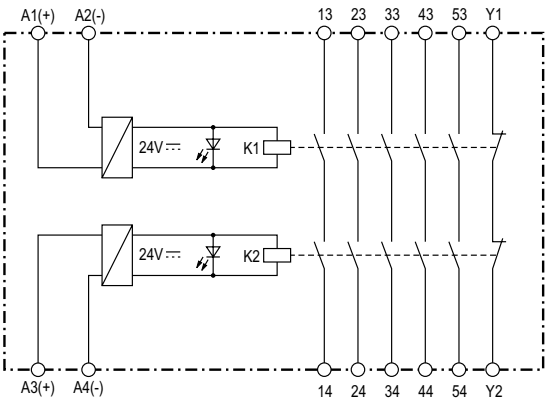
- Safety contact multiplication
- According to
  - Performance Level (PL) e and category 4 to EN ISO 13849-1: 2008
  - SIL Claimed Level (SIL CL) 3 to IEC/EN 62061
  - Safety Integrity Level (SIL) 3 to IEC/EN 61508 and IEC/EN 61511 when connected to a suitable safety module
  - EN 50156-1 for furnaces
- Control with safety semiconductor outputs (light curtain, e-stop) possible
- Redundant and forcibly guided contacts

- Output: max. 5 N.O. contacts, 1 N.C. contact for feedback circuit
- 2-channel
- LED Indicator
- Pluggable terminal blocks for easy exchange of devices

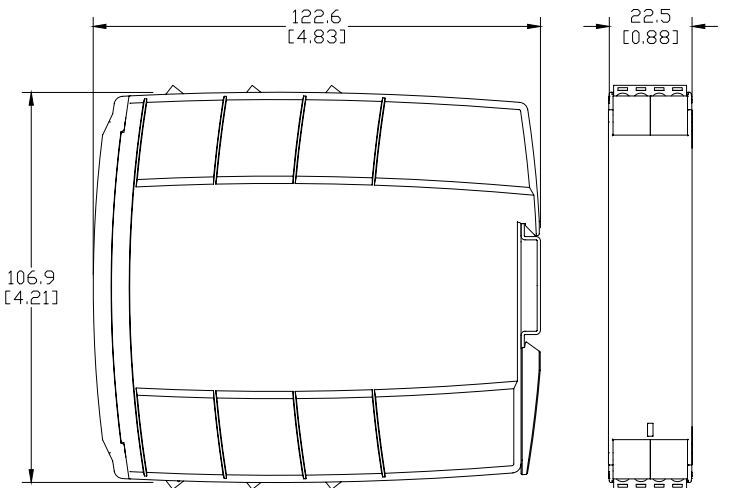
Safety Relays Selection Chart				
Part Number	**Price**	**Marking Type**	**Voltage**	**Outputs**
UG6929-60PS-100-24	$105.00	Safety relay extension module	24 VAC/DC	5 N.O. positive guided safety contact(s), 1 N.C. monitoring contact(s)

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%
SFF	99.7%
PFH_D	3.59E-10 h^{-1}

Block Diagram



Dimensions mm [in]



See our website: www.AutomationDirect.com for complete Engineering Drawings.

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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 60-068-2-6)
Degree of Protection	Per IEC/EN 60 529. Housing: IP40; Terminals IP20
Housing	UL 94V-0 Thermoplastic; Din mount 35 mm x 7.5 mm
Weight	210g (7.41 oz.)
Terminal Designation per EN 50 005 Wire Connections	1x4 mm^2 solid or 1 x 2.5 mm^2 stranded ferruled (isolated) or 2 x 1.5 mm^2 stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm^2 solid per DIN 46 228-1/-2/-3 /-4
Wire Fixing	Plus-minus terminal screws M3.5 box terminals with wire protection.
Wire Connection	60degC/75degC Copper conductors only; AWG20-12 Sol/Str Torque 0.5NM
Input Specifications	
Nominal Voltage	24VAC/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 2A, 230V: 10^5 switching cycles IEC/EN 60 947-5-1
Mechanical Life	20 x 10^6 switching cycles
Contact Type	5 N.O. positive guided and 1 N.C. monitoring contacts
Operate/Release Time	Operate typ at U_N: 20 m.; Release typ at U_N: 35 ms.
Nominal Output Voltage	250VAC
Thermal Current (I_{th})	Max. 5A 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/230V; N.C. contacts: 2A/230VAC DC 13: N.O. contacts: 4A/24V; N.C. contacts: 4A/24VDC; N.O. contact: 8A/24V >25x10^3 ON: 0.4s, OFF: 9.6s
Switching Frequency	Max. 1,200 switching cycles/hr
Agency Approvals and Standards	CSA, cULus file E107778, CE, RoHS, TUV

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.automationdirect.com

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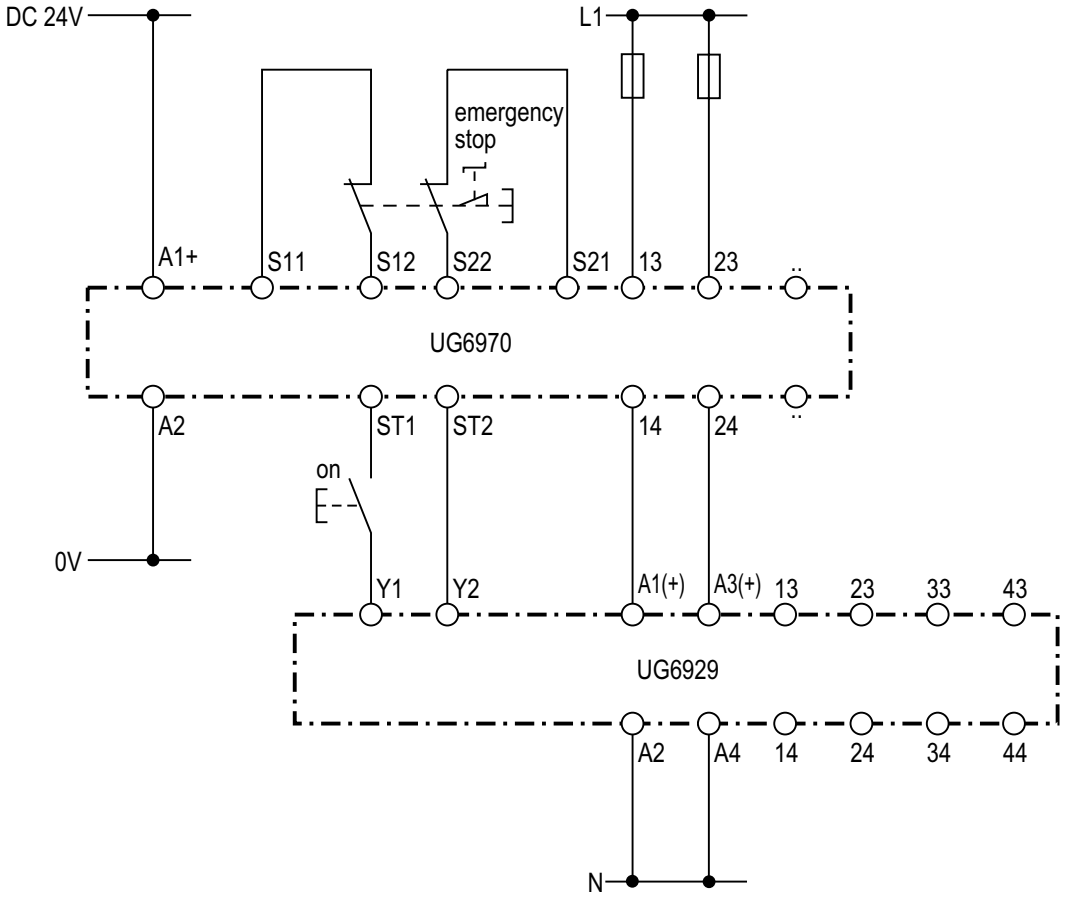
Application Example



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

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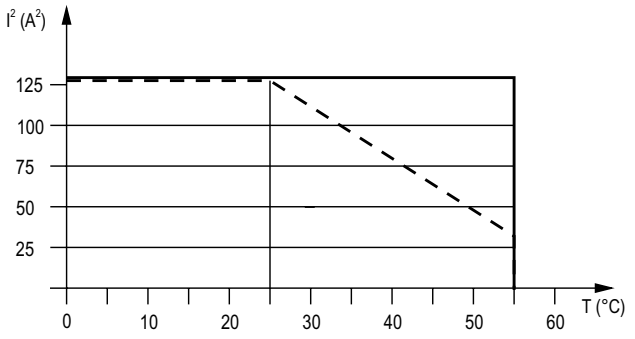
Characteristic Curves



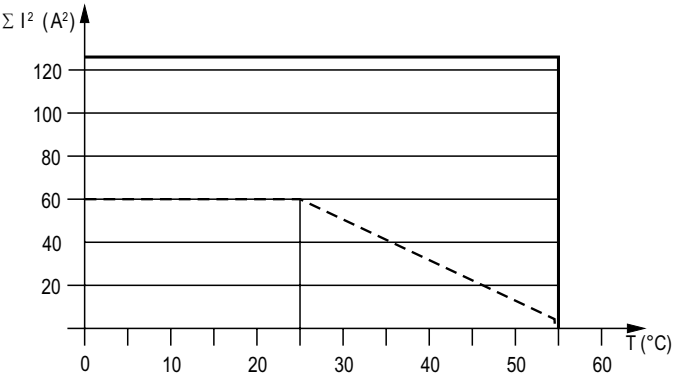
device free-standing
max. current at 55°C over
2 contact path = 8A ≙ 2x8²A² = 128A²

device mounted without distance heated by devices with same load,
max. current at 55°C over
2 contact path = 4A ≙ 2x4²A² = 32A²

$\sum I^2 = I_1^2 + I_2^2$

I_1, I_2 - current in contact paths

Quadratic total current limit curve



AC 230V — device mounted on distance with air circulation.
max. current at 55°C over
5 contact path = 5A ≙ 5x5²A² = 125A²

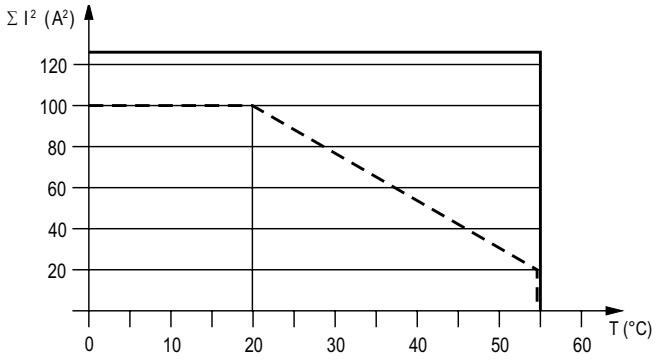
AC 230V — device mounted without distance heated by devices with same load,
max. current at 55°C over
5 contact path = 1A ≙ 5x1²A² = 5A²

Quadratic total current

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

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 ≙ 5x5²A² = 125A²

AC / DC 24V — device mounted without distance heated by devices with same load,
max. current at 55°C over
5 contact path = 2A ≙ 5x2²A² = 20A²

Quadratic total current

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

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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