

# 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

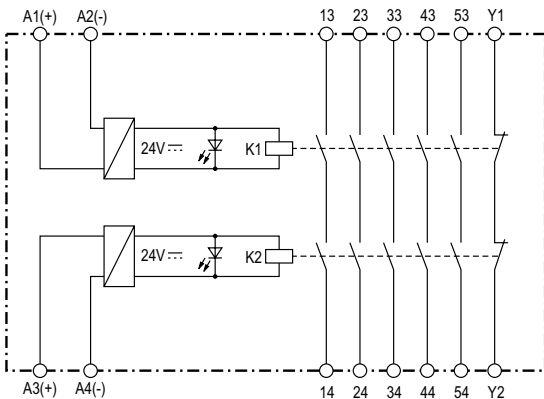
- Output: max. 5 N.O. contacts, 1 N.C. contact for feedback circuit
- 2-channel
- LED Indicator
- Pluggable terminal blocks for easy exchange of devices



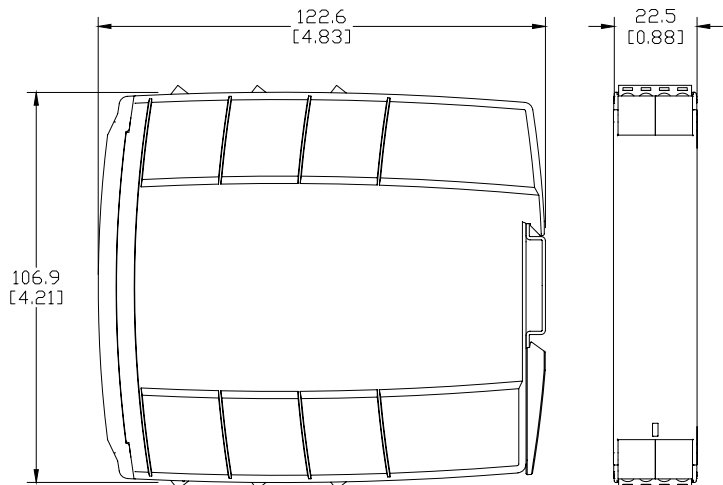
Safety Relays Selection Chart				
Part Number	Price	Marking Type	Voltage	Outputs
<b>UG6929-60PS-100-24</b>	\$108.00	Safety relay extension module	24 VAC/DC	5 N.O. positive guided safety contact(s), 1 N.C. monitoring contact(s)

Safety Data – Values per EN ISO 13849-1	
Category	4
Performance level	PLe
MTTF <sub>d</sub>	144.3 years
DC <sub>avg</sub>	99%
Safety Data – Values per IEC/EN 62061 / IEC/EN 61508	
SIL CL	3
SIL	3
HFT (Hardware Failure Tolerance)	1
DC <sub>avg</sub>	99%
SFF	99.7%
PFHD	3.59E-10 h <sup>-1</sup>

## Block Diagram



## Dimensions mm [in]



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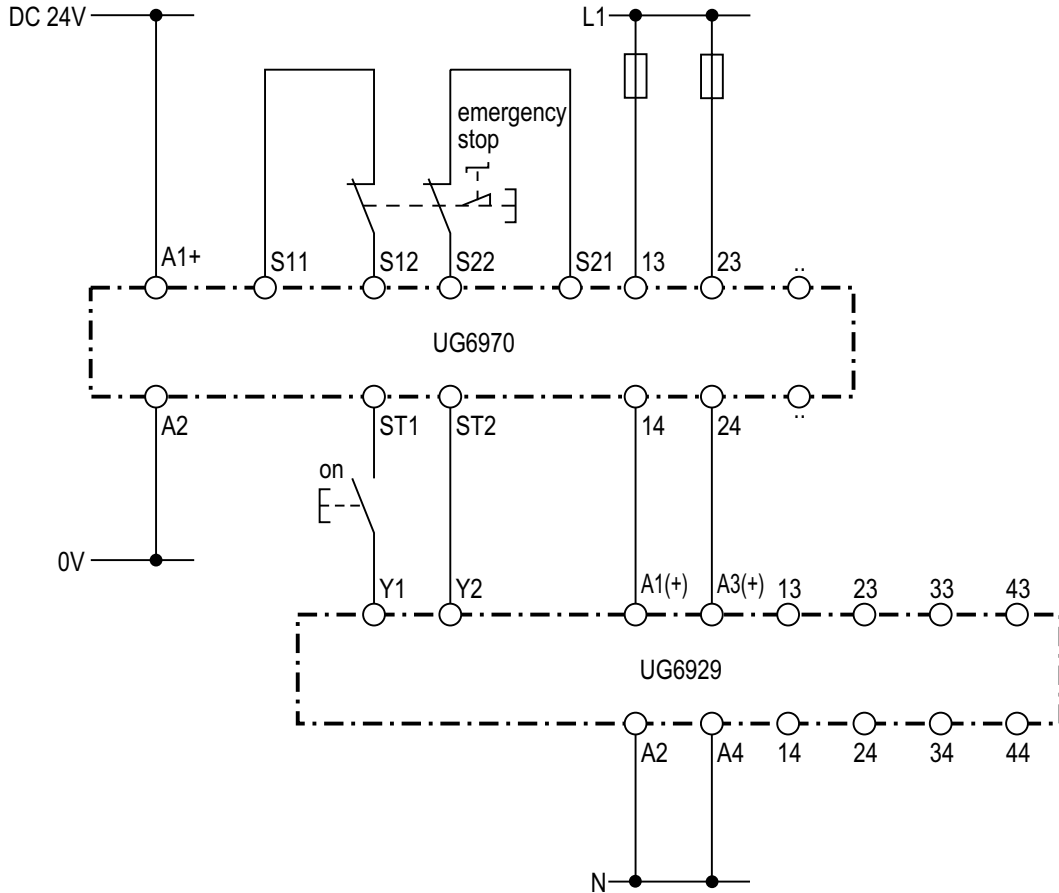
# Dold UG6929 Series Safety Relay Extension Module

<b>Dold UG6929 Series Safety Relay Extension Module Specification Table</b>	
<b>General Specifications</b>	
<b>Temperature</b>	Storage: -25°C to 85°C (-13°F to 185°F) Operating: -15°C to 55°C (5°F to 131°F)
<b>Altitude</b>	< 2,000 meters
<b>Vibration Resistance</b>	Amplitude: 0.35mm, Frequency: 10 to 55 Hz (IEC/EN 60-068-2-6)
<b>Degree of Protection</b>	Per IEC/EN 60 529. Housing: IP40; Terminals IP20
<b>Housing</b>	UL 94V-0 Thermoplastic; Din mount 35 mm x 7.5 mm
<b>Weight</b>	210g (7.41 oz.)
<b>Terminal Designation per EN 50 005 Wire Connections</b>	1x4 mm <sup>2</sup> solid or 1 x 2.5 mm <sup>2</sup> stranded ferruled (isolated) or 2 x 1.5 mm <sup>2</sup> stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm <sup>2</sup> solid per DIN 46 228-1/-2/-3/-4
<b>Wire Fixing</b>	Plus-minus terminal screws M3.5 box terminals with wire protection.
<b>Wire Connection</b>	60degC/75degC Copper conductors only; AWG20-12 Sol/Str Torque 0.5NM
<b>Input Specifications</b>	
<b>Nominal Voltage</b>	24VAC/DC
<b>Voltage Range</b>	AC: 0.85 to 1.1 U <sub>N</sub> At 10% residual ripple: 0.9 to 1.1 U <sub>N</sub> ; At 48% residual ripple: 0.85 to 1.1 U <sub>N</sub>
<b>Maximum Consumption</b>	24VAC/DC: 1.8VA
<b>Nominal Frequency</b>	50 to 60 Hz
<b>Control Current</b>	Control current typ. at 24V over 2 relays: 75 mA
<b>Overvoltage Protection</b>	Internal VDR (Voltage Dependent Resistor)
<b>Output Specifications</b>	
<b>Electrical Contact Life</b>	To AC15 at 2A, 230V: 10 <sup>6</sup> switching cycles IEC/EN 60 947-5-1
<b>Mechanical Life</b>	20 x 10 <sup>6</sup> switching cycles
<b>Contact Type</b>	5 N.O. positive guided and 1 N.C. monitoring contacts
<b>Operate/Release Time</b>	Operate typ at U <sub>N</sub> : 20 ms.; Release typ at U <sub>N</sub> : 35 ms.
<b>Nominal Output Voltage</b>	250VAC
<b>Thermal Current (I<sub>th</sub>)</b>	Max. 5A per contact. See quadratic total current limit curve in installation manual.
<b>Short Circuit Strength</b>	Max fuse rating: 6A gl (IEC/EN 60 9470-5-1); Line circuit breaker: B6A
<b>Switching Capacity IEC/EN 60 947-5-1</b>	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 <sup>3</sup> ON: 0.4s, OFF: 9.6s
<b>Switching Frequency</b>	Max. 1,200 switching cycles/hr
<b>Agency Approvals and Standards</b>	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](http://www.automationdirect.com)

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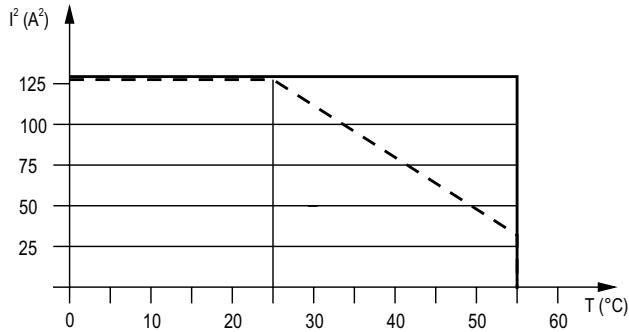
## Application Example



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

# Dold UG6929 Series Safety Relay Extension Module

## Characteristic Curves



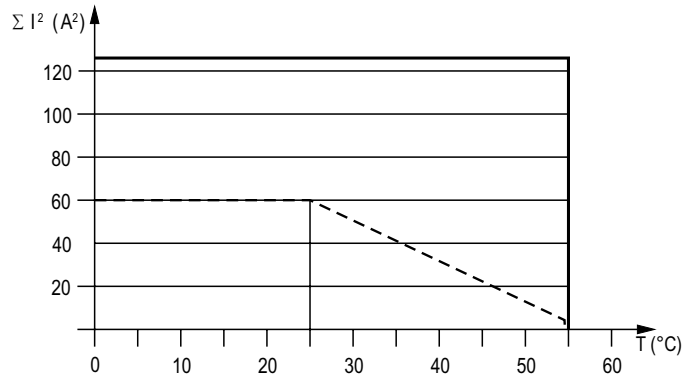
— device free-standing  
max. current at 55°C over  
2 contact path = 8A  $\hat{=}$  2x8²A² = 128A²

- - - device mounted without distance heated by  
devices with same load,  
max. current at 55°C over  
2 contact path = 4A  $\hat{=}$  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  $\hat{=}$  5x5²A² = 125A²

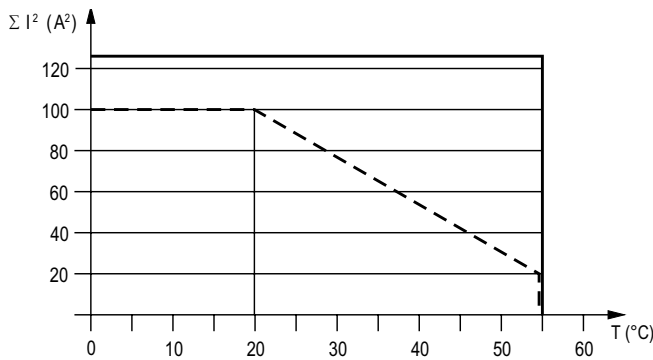
- - - AC 230V device mounted without distance heated by  
devices with same load,  
max. current at 55°C over  
5 contact path = 1A  $\hat{=}$  5x1²A² = 5A²

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  $\hat{=}$  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  $\hat{=}$  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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