

# 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                    |
|-------------------------------------------|----------|-------------------------------|-----------|------------------------------------------------------------------------------|----------------------------|
| <a href="#"><u>UG6929-60PS-100-24</u></a> | \$145.00 | Safety relay extension module | 24V AC/DC | 5 NO positive guided safety contacts, 1 NC monitoring contacts               | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>UG6929-61PS-100-24</u></a> | \$167.00 | Safety relay extension module | 24V AC/DC | 6 NO positive guided safety contacts, 2 NC monitoring contacts and indicator | <a href="#"><u>PDF</u></a> |
| <a href="#"><u>UG6929-62PS-100-24</u></a> | \$167.00 | Safety relay extension module | 24V AC/DC | 7 NO positive guided safety contacts, 1 NC monitoring contact                | <a href="#"><u>PDF</u></a> |

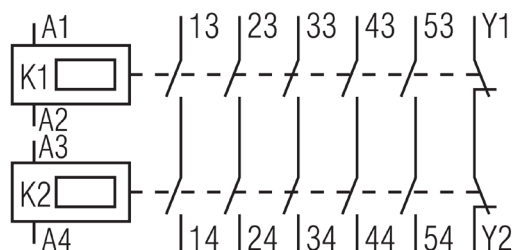
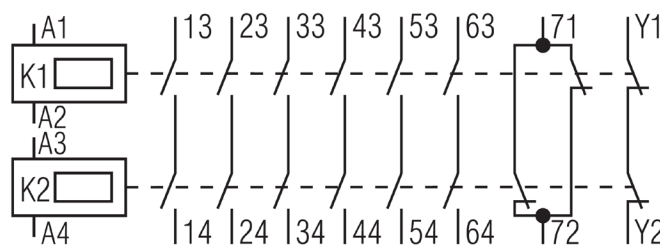
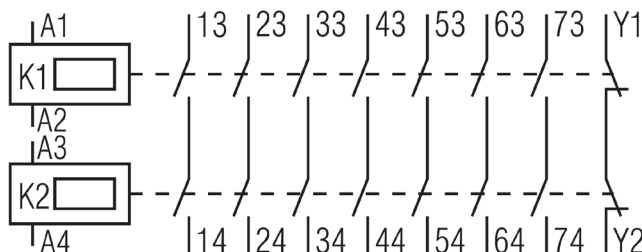
## Safety Data – Values per EN ISO 13849-1

|                   |             |
|-------------------|-------------|
| 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%                  |
| PFH <sub>D</sub>                 | 3.59E <sup>-10</sup> |

## Block Diagrams

**UG6929-60PS-100-24****UG6929-61PS-100-24****UG6929-62PS-100-24**

See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering Drawings.

# Dold UG6929 Series Safety Relay Extension Module



## Dold UG6929 Series Safety Relay Extension Module Specification Table

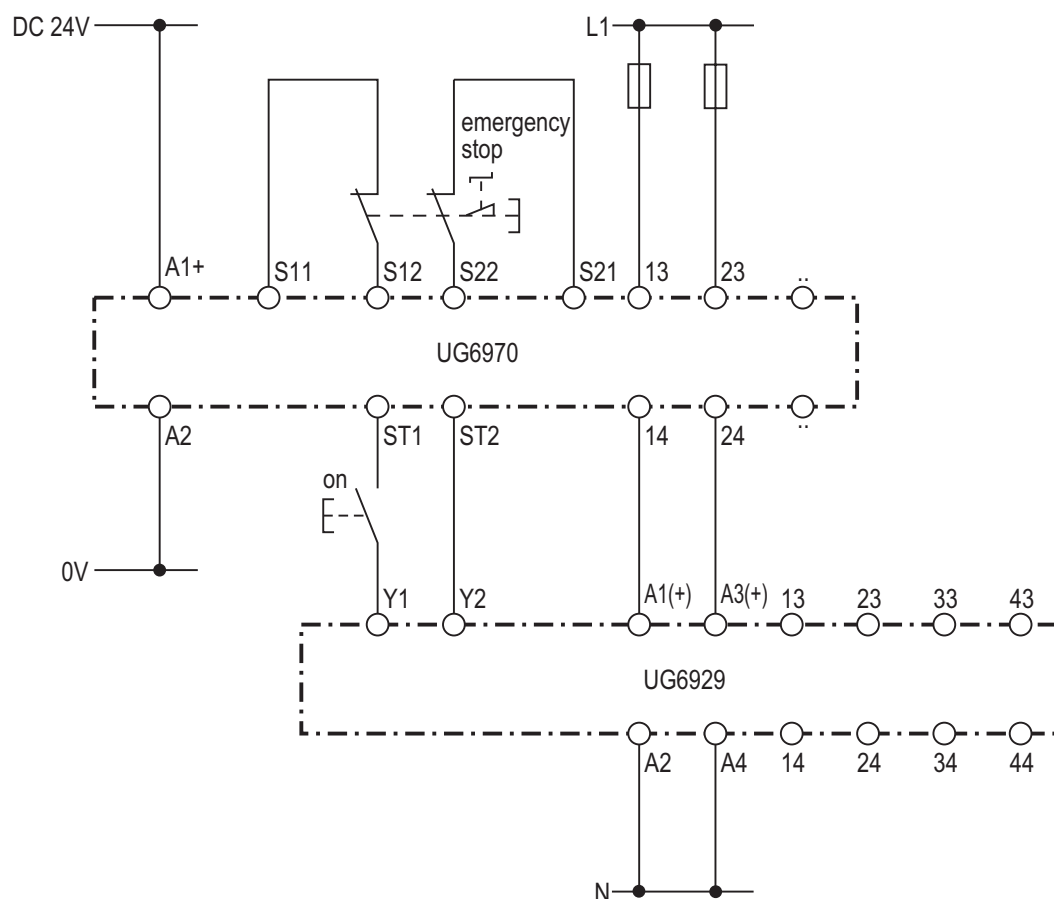
| General Specifications                             |                                                                                                                                                               |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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<br>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<br>DIN rail mount                                                                                                                      |
| Weight                                             | 280g (9.88 oz)                                                                                                                                                |
| Terminal Designation per EN 50005 Wire Connections | 1x AWG 24-12 solid or stranded<br>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<br>AWG20-12 Sol/Str Torque 0.5 N•m                                                                                           |
| Input Specifications                               |                                                                                                                                                               |
| Nominal Voltage                                    | 24V AC/DC                                                                                                                                                     |
| Voltage Range                                      | AC: 0.85 to 1.1 $U_N$<br>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 <sup>5</sup> switching cycles IEC/EN 60947-5-1                                                                                    |
| Mechanical Life                                    | 20 x 10 <sup>6</sup> switching cycles                                                                                                                         |
| Operate/Release Time                               | Operate: typical at $U_N$ 20ms<br>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<br>DC 13: N.O. contacts: 4A/24V; NC contacts: 4A/24VDC; NO contact: 8A/24V >25x103<br>ON: 0.4s, OFF: 9.6s |
| Switching Frequency                                | Max. 1,200 switching cycles/hr                                                                                                                                |
| Agency Approvals and Standards                     | CSA, cULus file E107778, CE, TÜV                                                                                                                              |

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

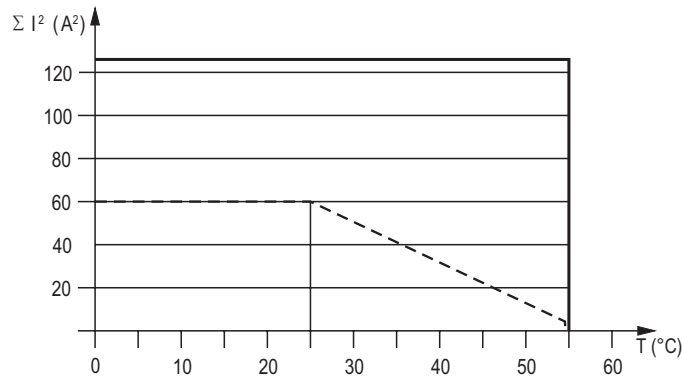


Contact extensions with UG6929/100; suited up to SIL3, Performance Level e, Cat. 4

# 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 =  $5\text{ A} \triangleq 5 \times 5^2 \text{ A}^2 = 125 \text{ A}^2$

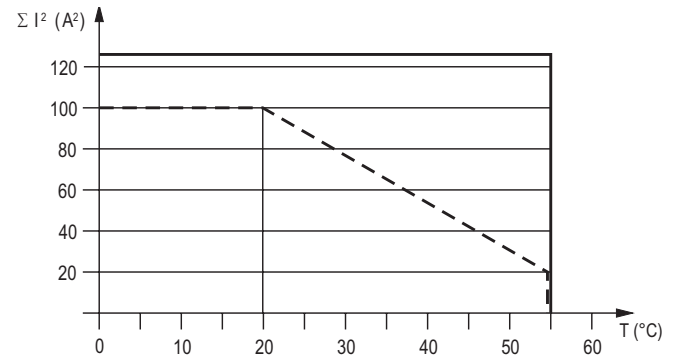
- - - AC 230V device mounted without distance heated by  
devices with same load,  
max. current at 55°C over  
5 contact path =  $1\text{ A} \triangleq 1^2 \text{ A}^2 = 1 \text{ A}^2$

Quadratic total current

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

$I_{th1}, I_{th2}, I_{th3}, I_{th4}, I_{th5}$  : 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 =  $5\text{ A} \triangleq 5 \times 5^2 \text{ A}^2 = 125 \text{ A}^2$

- - - AC / DC 24V device mounted without distance heated by  
devices with same load,  
max. current at 55°C over  
5 contact path =  $2\text{ A} \triangleq 2^2 \text{ A}^2 = 4 \text{ A}^2$

Quadratic total current

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

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

Quadratic total current limit curve AC/DC 24 V

# Safety Products



*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.*

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