

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

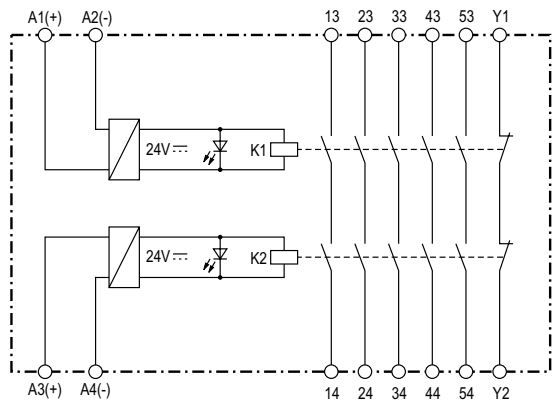
- Output max. 5 N.O. contacts, 1 N.C. contact for feedback circuit
- 2-channel
- LED Indicator
- Pluggable terminal blocks for easy exchange of devices



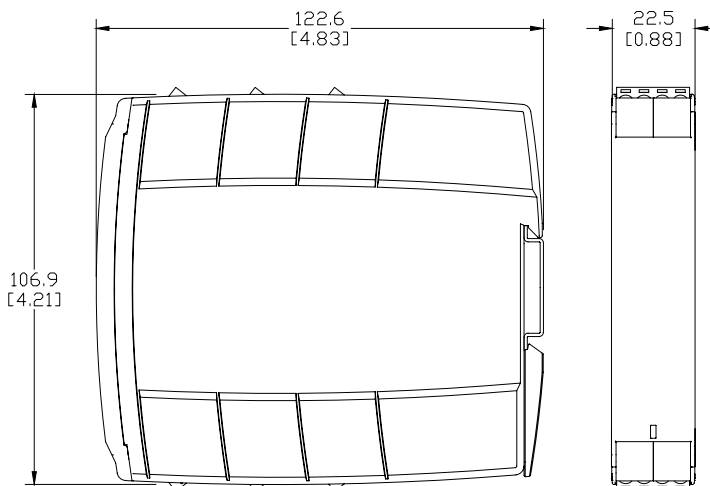
| Safety Relays Selection Chart | | | | |
|-------------------------------|----------|-------------------------------|-----------|--|
| Part Number | Price | Marking Type | Voltage | Outputs |
| UG6929-60PS-100-24 | \$107.00 | Safety relay extension module | 24 VAC/DC | 5 N.O. positive guided safety 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% |
| PFFH _D | 3.59E-10 h ⁻¹ |

Block Diagram



Dimensions mm [in]



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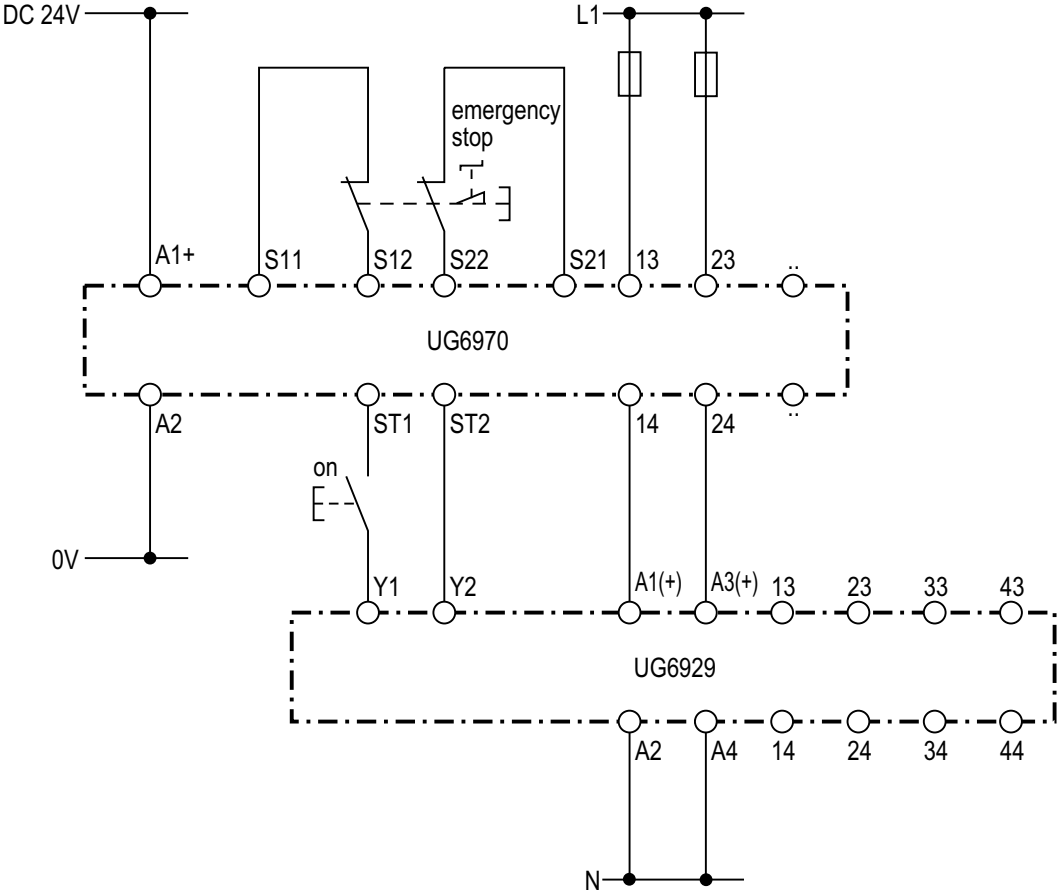
Dold UG6929 Series Safety Relay Extension Module

| 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 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 ms.; 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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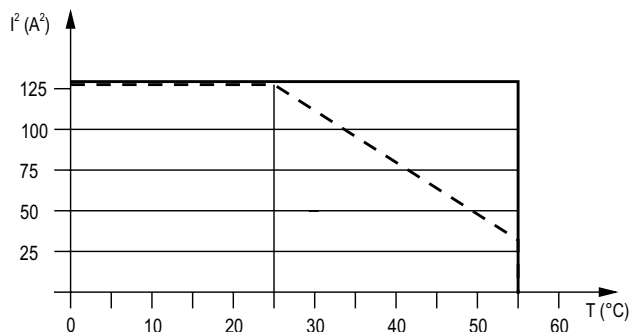
Application Example



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

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Characteristic Curves



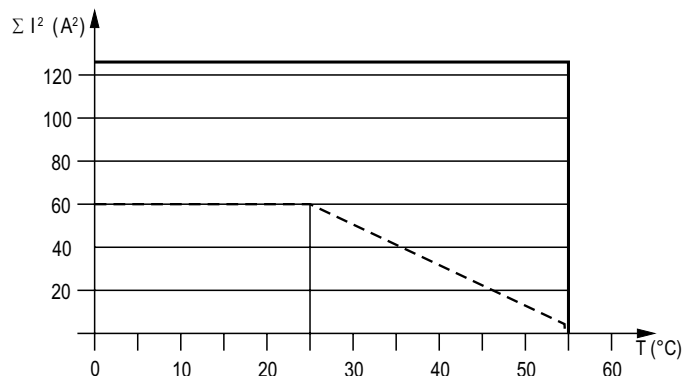
— device free-standing
max. current at 55°C over
2 contact path = $8A \cong 2 \times 8^2 A^2 = 128 A^2$

- - - device mounted without distance heated by
devices with same load,
max. current at 55°C over
2 contact path = $4A \cong 2 \times 4^2 A^2 = 32 A^2$

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

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 = $5A \cong 5 \times 5^2 A^2 = 125 A^2$

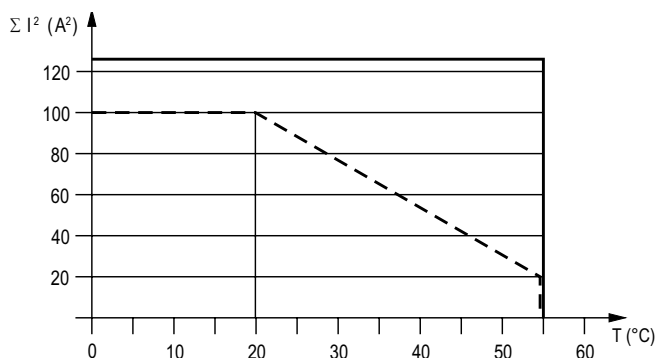
- - - AC 230V device mounted without distance heated by
devices with same load,
max. current at 55°C over
5 contact path = $1A \cong 5 \times 1^2 A^2 = 5 A^2$

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 = $5A \cong 5 \times 5^2 A^2 = 125 A^2$

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

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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