

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

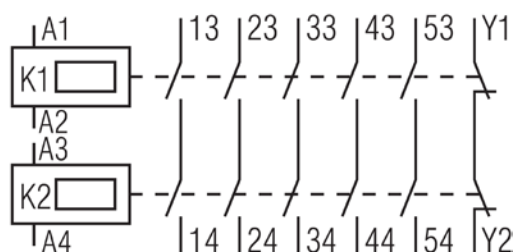
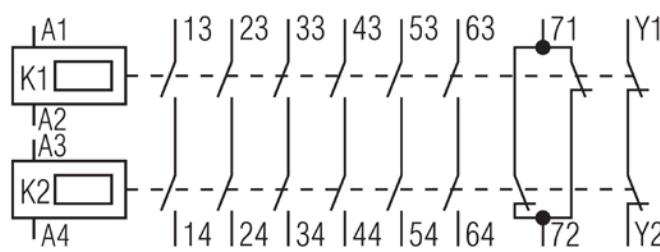
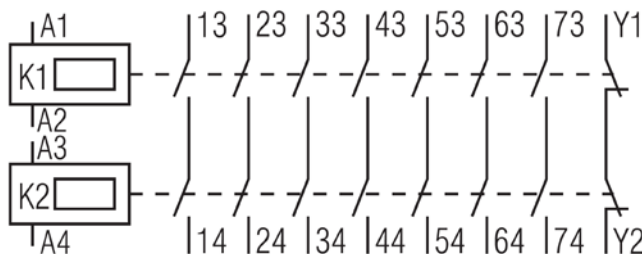
Safety Data – Values per EN ISO 13849-1

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

**UG6929-60PS-100-24****UG6929-61PS-100-24****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°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 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	24V AC/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 5A, 230V: 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	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 DC 13: N.O. contacts: 4A/24V; NC contacts: 4A/24VDC; NO 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.

DOLD

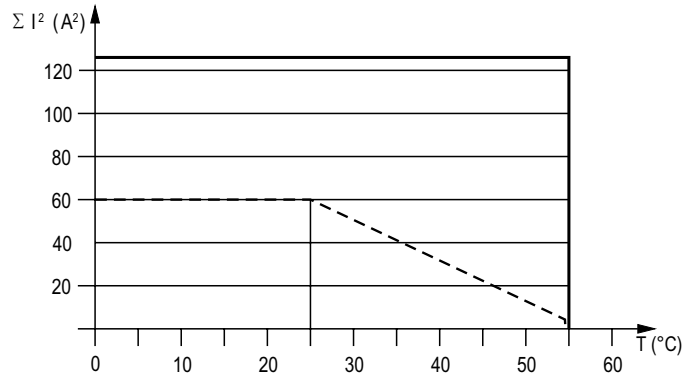
The diagram illustrates a 24VDC control circuit for a motor. The circuit is powered by a DC 24V supply and grounded at 0V. A neutral (N) line is also shown. The circuit includes two main components: UG6970 and UG6929. UG6970 contains a main switch S11, a stop button S12, an emergency stop button S22, and a main switch S21. UG6929 contains a stop button Y1, a stop button Y2, and a main switch A1(+). The circuit is protected by fuses L1 and L2. The motor is connected to the neutral (N) line.

Safety Electrical Components **tESC-407**

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Characteristic Curves



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

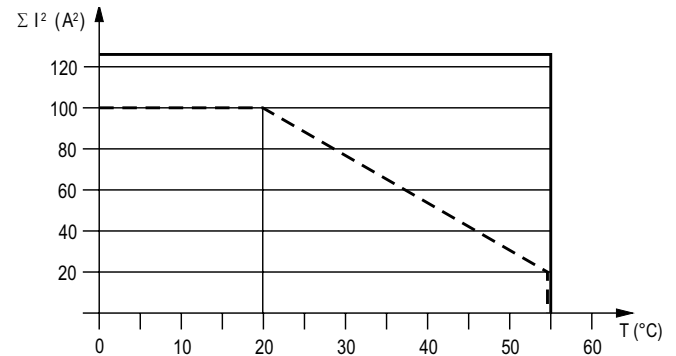
- - - AC 230V device mounted without distance heated by
devices with same load,
max. current at 55°C over
5 contact path = $1A \triangleq 5 \times 1^2 A^2 = 5 A^2$

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

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

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



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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