

Control and signalling units Ø 16

Harmony® style 6

Pushbuttons, switches and pilot lights, with double insulated bezel

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Characteristics

Environment

Conforming to standards			IEC 947-1, IEC 947-5-1, IEC 947-5-4, EN 60947-5-1, JIS C 4520 and 852, UL 508, CSA C22-2 n° 14
Product certifications			UL, CSA ASE, BV, JIS, RINA, LROS, DNV, GL : pending
Protective treatment Standard version			"TC"
Ambient air temperature around the device	Storage	°C	- 40...+ 70
	Operation	°C	- 25...+ 70
Vibration resistance	Conforming to IEC 68-2-6		(2...500 Hz) 3 mm peak to peak or 5 gn
Shock resistance	Conforming to IEC 68-2-27		Half sine wave 18 ms, 30 gn
			Half sine wave 11 ms, 50 gn
Electric shock protection	Conforming to IEC 536 & NF C 20-030		Class II
Degree of protection	Conforming to IEC 529 & NF C 20-010 Conforming to UL 50 & CSA C22-2		IP 65 Type 4, 4X and 13 (except key switches)
Mechanical life (in operating cycles)	Spring return pushbuttons		2 million
	Latching pushbuttons		300,000
	Key switches		200,000
	Selector switches		500,000
	Emergency Stop mushroom head pushbuttons		100 000
Mounting positions			All

Electrical characteristics of LED pilot lights

Voltage limits			≈ 6...30 V
Power consumption	I (24 V)	mA	15
Surge withstand	Conforming to IEC 1000-4-5	kV	2/1
Resistance to fast transients	Conforming to IEC 1000-4-4	kV	2
Resistance to electromagnetic fields	Conforming to IEC 1000-4-3	V/m	10
Resistance to electrostatic discharges	Conforming to IEC 1000-4-2	kV	8/6
Electromagnetic emission	Conforming to EN 55011		Class B

Electrical characteristics of contacts

Rated operational characteristics	~ AC-15		B300 or Ue = 240 V and Ie = 1.5 A or Ue 120 V and Ie = 3 A
	== DC-13		R300 or Ue = 250 V and Ie = 0.1 A or Ue = 125 V and Ie = 0.22 A
Rated insulation voltage	Conforming to IEC 947-1	V	Ui = 250 degree of pollution 3 (Except pilot lights with incandescent or neon bulb : degree of pollution 2)

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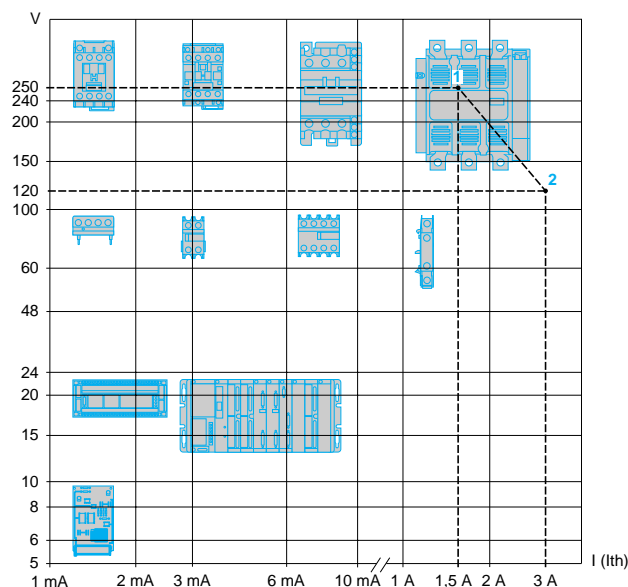
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Characteristics (continued)

Electrical characteristics of contacts (continued)

Rated impulse withstand voltage	Conforming to IEC 947-1	kV	U _{imp} = 4
Contact material	Normal environment and usage		Silver alloy
	Chemically corrosive environment or infrequent operation		Gold flashed
Contact operation	N/C or N/O		Slow break, with indication of change of state by tactile feedback on push and audibility
Differential travel of contacts	With pushbutton head	mm mm mm	Changing N/C state : 1 Changing N/O state : 2 Total travel : 3.5
Operating force	N/C contact	N	2.5
	N/O contact	N	1.6
	Pushbutton head + N/O contact	N	3.5
	Pushbutton head + N/C contact	N	4.5
Positive operation	Conforming to IEC 947-5-2	N	N/C contact with positive opening operation Positive opening force : 20
Terminal identification	Conforming to EN 50005 et EN 50013		
Short-circuit protection	Cartridge fuse mounted upstream		6 A gG
Electrical reliability	Failure rate According to IEC 947-5-4		With confidence level of 90 % : $\lambda_{90} = 10^{-8}$ 5 V - 1 mA, defect contact voltage drop = 0.5 V
Cabling		mm mm	By Faston connectors 2.8 x 0.5 By pins for printed circuit board connection 1 x 0.5
Electrical durability	Conforming to IEC 947-5-1 Appendix C Utilisation category AC-15 and DC-13 Operating rate 3600 operating cycles/hour. Load factor 0.5		1 million operating cycles - 200 VA-230 V



1 Switching capacity conforming to IEC 947-5-1, utilisation category AC-15, DC-13
B300 240 V 1.5 A
R300 250 V 0.1 A

2 Switching capacity conforming to IEC 947-5-1, utilisation category AC-15, DC-13
B300 120 V 3 A
R300 125 V 0.22 A