Zelio Control measurement and control relays

Relays model RM4

Environment

Conforming to standards			IEC 60255-6, EN 60255-6
Product approvals			CSA, GL, UL, pending
CE marking			Zelio Control measurement relays conform to European regulations relating to CE marking
Ambient air temperature around the device	Storage	**°C**	- 40…+ 85
	Operation	**°C**	- 20…+ 65
Permissible relative humidity range	Conforming to IEC 60721-3-3		15…85 % Environmental class 3K3
Vibration resistance	Conforming to IEC 6068-2-6, 10 to 55 Hz		a = 0.35 ms
Shock resistance	Conforming to IEC 6068-2-27		15 gn - 11 ms
Degree of protection	Casing		IP 50
	Terminals		IP 20
Degree of pollution	Conforming to IEC 60664-1		3
Overvoltage category	Conforming to IEC 60664-1		III
Rated insulation voltage	Conforming to IEC	**V**	500
	Conforming to CSA	**V**	(1)
Test voltage for insulation tests	Dielectric test	**kV**	2.5
	Shock wave	**kV**	4.8
Voltage limits	Power supply circuit		0.85...1.1 Uc (2)
Frequency limits	Power supply circuit		50/60 ± 5 %
Disconnection value	Power supply circuit		> 0.1 Uc (2)
Mounting position without derating	In relation to normal vertical mounting plane		Any position
Connection Maximum c.s.a.	Flexible cable without cable end	**mm²**	2 x 2.5
	Flexible cable with cable end	**mm²**	2 x 1.5
Tightening torque		**N.m**	0.6…1.1

Immunity to electromagnetic interference (EMC) (Application class 2 conforming to EN 61812-1)

Electrostatic discharge	Conforming to IEC 61000-4-2		Level 3 (6 kV contact, 8 kV air)
Electromagnetic fields	Conforming to IEC 61000-4-3		Level 3 (10 V/m)
Fast transients	Conforming to IEC 61000-4-4		Level 3 (2 kV)
Shock waves	Conforming to IEC 61000-4-5		Level 3 (2 kV)
Radiated and conducted emissions	CISPR11		Group 1 class A
	CISPR22		Class A

(1) Value not communicated.
(2) Except RM4-T, see page 28473/5.

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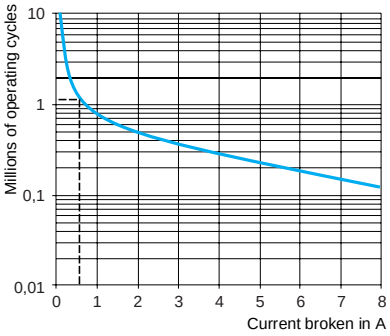
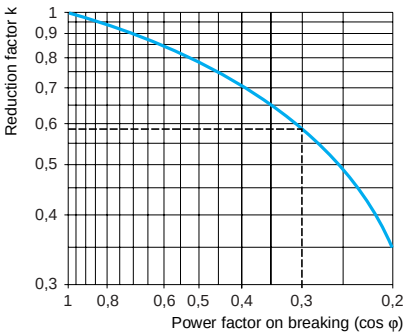
Output circuit characteristics

Mechanical durability	In millions of operating cycles		30		
Current limit Ith		**A**	8		
Rated operational limits at 70 °C Conforming to IEC 60947-5-1/1991 and VDE 0660			24 V	115 V	250 V
	AC-15	**A**	3	3	3
	DC-13	**A**	2	0.3	0.1
Minimum switching capacity			12 V/10 mA		
Switching voltage	Rated	**V**	∿ 250		
	Max	**V**	∿ 440		
Contact material			Nickel Silver 90/10		

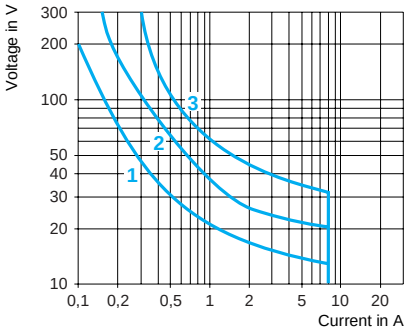
a.c. load
Curve 1
Electrical durability of the contacts on a resistive load in millions of operating cycles



Curve 2
Reduction factor k for inductive loads (applies to values taken from the durability curve opposite)



d.c. load
Load limit curve



Example:

An LC1-F185 contactor supplied with 115 V/50 Hz for a consumption of 55 VA or a current consumption equal to 0.1 A and cos φ = 0.3.
For 0.1 A, curve 1 indicates durability of approximately 1.5 million operating cycles.
As the load is inductive, it is necessary to apply a reduction coefficient k to this number of cycles, as indicated by curve 2.

For cos φ = 0.3 : k = 0.6
The electrical durability therefore becomes:
1.5 106 operating cycles x 0.6 = 900 000 operating cycles.

1 L/R = 20 ms
2 L/R with load protection diode
3 Resistive load