

Environment			
<b>Conforming to standards</b>			IEC 60255-6, EN 60255-6
<b>Product certifications</b>			CSA, GL, UL, pending
<b>CE marking</b> LVD 73/23/EEC and EMC 89/336/EEC			Zelio Control measurement relays conform to European regulations relating to CE marking
<b>Ambient air temperature</b> around the device	Storage	°C	- 40...+ 85
	Operation	°C	- 20...+ 65
<b>Permissible relative humidity range</b>	Conforming to IEC 60721-3-3		15...85 % Environmental class 3K3
<b>Vibration resistance</b>	Conforming to IEC 60068-2-6, 10 to 55 Hz		a = 0.35 ms
<b>Shock resistance</b>	Conforming to IEC 60068-2-27		15 gn - 11 ms
<b>Degree of protection</b> Conforming to IEC 60529	Casing		IP 50
	Terminals		IP 20
<b>Degree of pollution</b>	Conforming to IEC 60664-1		3
<b>Overvoltage category</b>	Conforming to IEC 60664-1		III
<b>Rated insulation voltage</b>	Conforming to IEC	V	500
	Conforming to CSA	V	(1)
<b>Test voltage for insulation tests</b>	Dielectric test	kV	2,5
	Shock wave	kV	4,8
<b>Voltage limits</b>	Power supply circuit		0.85...1.1 U <sub>c</sub> (2)
<b>Frequency limits</b>	Power supply circuit		50/60 ± 5 %
<b>Disconnection value</b>	Power supply circuit		> 0.1 U <sub>c</sub> (2)
<b>Mounting position</b> without derating	In relation to normal vertical mounting plane		Any position
<b>Cabling</b> Maximum c.s.a. Conforming to IEC 60947-1	Flexible cable without cable end	mm <sup>2</sup>	2 x 2.5
	Flexible cable with cable end	mm <sup>2</sup>	2 x 1.5
<b>Tightening torque</b>	Conforming to IEC 60947-1	N.m	0.6...1.1
Immunity to electromagnetic interference (EMC) (Application class 2 conforming to EN 61812-1)			
<b>Electrostatic discharge</b>	Conforming to IEC 61000-4-2		Level 3 (6 kV contact, 8 kV air)
<b>Electromagnetic fields</b>	Conforming to IEC 61000-4-3		Level 3 (10 V/m)
<b>Fast transients</b>	Conforming to IEC 61000-4-4		Level 3 (2 kV)
<b>Shock waves</b>	Conforming to IEC 61000-4-5		Level 3 (2 kV)
<b>Radiated and conducted emissions</b>	CISPR11		Group 1 class A
	CISPR22		Class A

(1) Value not communicated

(2) Except RM4-T, see page 28473/5.

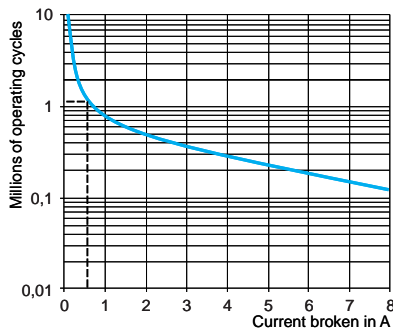
### Output circuit characteristics

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

#### a.c. load

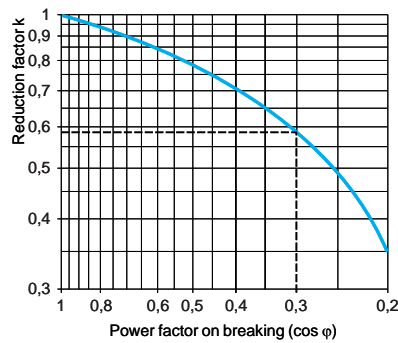
##### Curve 1

Electrical durability of contacts on resistive load in millions of operating cycles



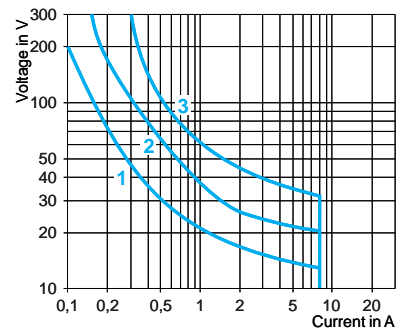
##### Curve 2

Reduction factor k for inductive loads (applies to values taken from durability Curve 1)



#### 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 0.5 A and  $\cos \varphi = 0.3$ .

For 0.5 A, curve 1 indicates a 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  $\cos \varphi = 0.3$ :  $k = 0.6$

The electrical durability therefore becomes:

$1.5 \cdot 10^6 \text{ operating cycles} \times 0.6 = 900\,000 \text{ operating cycles.}$

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

