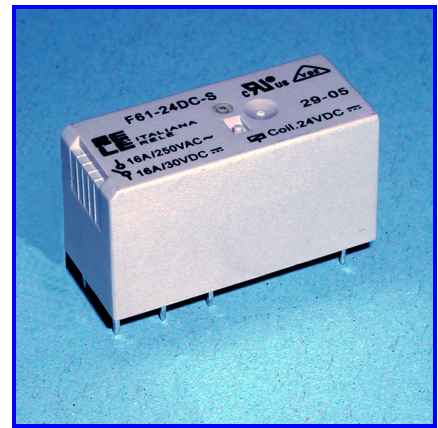


# SERIES F

## Low Profile PCB Relays

All-or-Nothing relays ideally suited for all electronic appliances demanding compact design and reduced power consumption. Design includes a protective dust cover sealed to IP67 and provided with a special device to avoid ozone formation.

Different contact ratings up to 16A are available and a complete range of AC and DC coil voltages. Terminals are for printed circuit board mounting, either directly or by appropriate sockets, for any application requiring "plug-in" serviceability or maintenance.



### DIELECTRIC STRENGTH

Coil / contacts :	<b>5000 V RMS</b>
Between adjacent contacts :	<b>2500 V RMS</b>
Between open contacts :	<b>1000 V RMS</b>
Ground / live parts :	(insulated ground)

### SPECIFICATION

Min. insulation resistance	100 MΩ @ 500 VDC (1 minute)
Pollution class / voltage	3 / 250 VAC (EN 61810-1)
Environmental protection	RT III (EN 61810-1)
Enclosure classification	IP67 sealed (EN 60529)
Type of duty	Continuous
Mechanical life expectancy	10x10 <sup>6</sup> operations (AC / DC)
Max ops./hour @ no load	18000 (AC / DC)
Max ops./hour @ rated load	360 (AC / DC)
Temperature range	-40 to +85° C
Storage temperature	-40 to +85° C
Vibration	10 g (10-55 Hz)
Overvoltage class	III (EN 61810-1)
Impulse voltage class	6 kV (coil / contacts)
Weight	15 grams
Insulation type (EN 61810-1)	reinforced (8mm) between coil & contacts

### OPERATING TIMES (At Rated Voltage)

Operate (excluding bounces) :	<b>max 12</b>	Milliseconds
Release (excluding bounces) :	<b>max 8</b>	Milliseconds
Bounces :	<b>max 5</b>	Milliseconds

### AVAILABLE TYPES

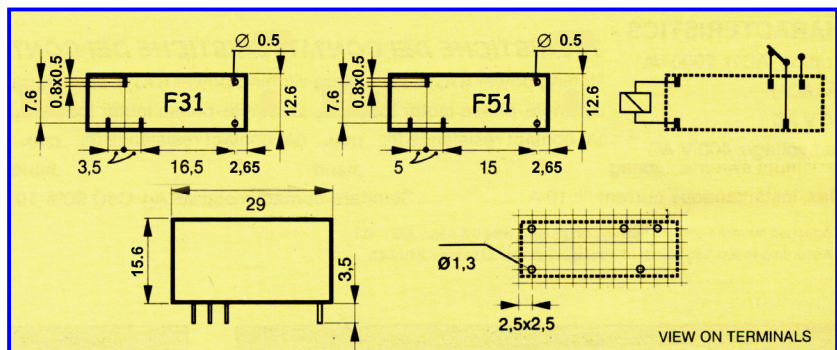
**F31** - 3.5 mm pin-spacing **12A-250V AC**

**F51** - 5 mm pin-spacing **12A-250V AC**

1 pole changeover.

Printed circuit terminations.

Standard contact material Ag-Ni 10%.  
Normally open, alternative material and gold-plated contact versions are available on request for agreed quantities.

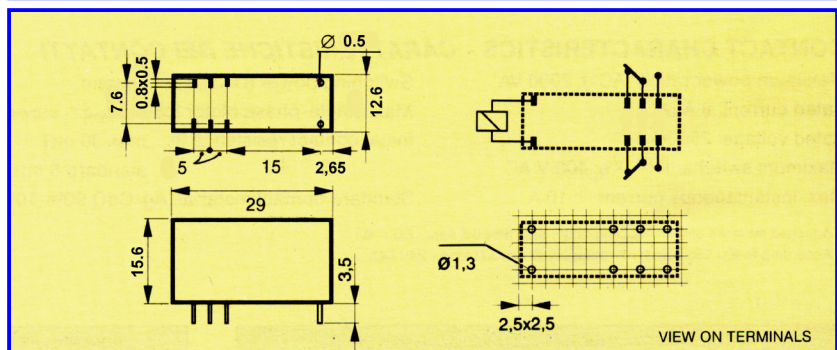


**F52** - 5 mm pin-spacing **8A-250V AC**

2 pole changeover.

Printed circuit terminations.

Standard contact material Ag-Ni 10%.  
Normally open, alternative material and gold-plated contact versions are available on request for agreed quantities.

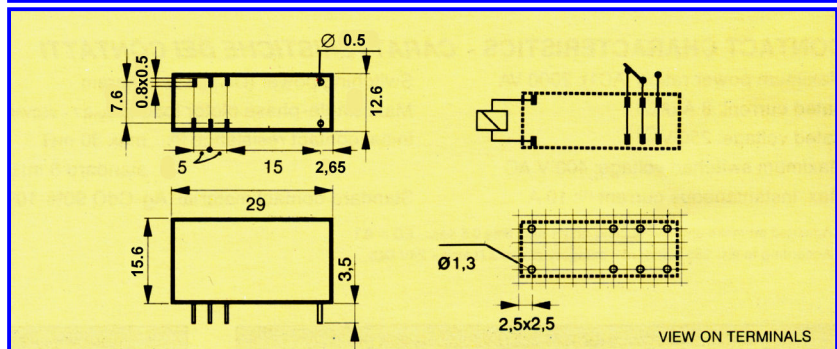


**F61** - 5 mm pin-spacing **16A-250V AC**

1 pole changeover.

Printed circuit terminations.

Standard contact material Ag-Ni 10%.  
Normally open, alternative material and gold-plated contact versions are available on request for agreed quantities.



### APPROVALS



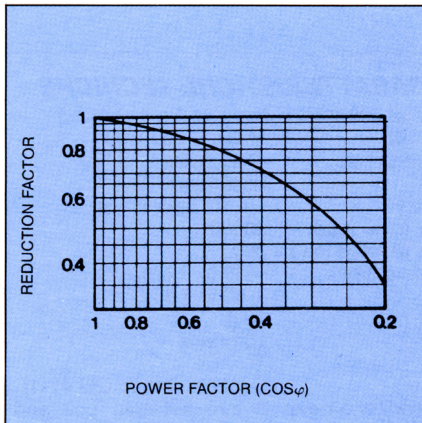
## COIL CHARACTERISTICS

DC			AC		
Rated Voltage V	Rated Current mA	Resistance R $\Omega$	Rated Voltage V	Rated Current mA	Resistance R $\Omega$
12	33	360	-	-	-
24	16.7	1440	24	30	350
48	8.3	5520	-	-	-
110	4.1	26530	115	7.7	8100
230	-	-	230	3.4	32500

Resistance values at 20°C ambient temp.

Tolerance on Resistance:  $\pm 10\%$

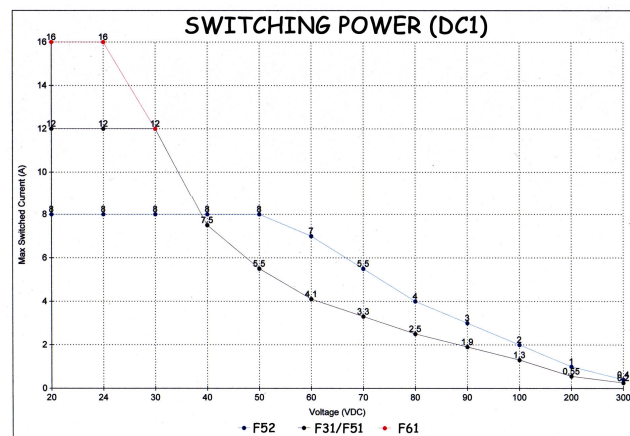
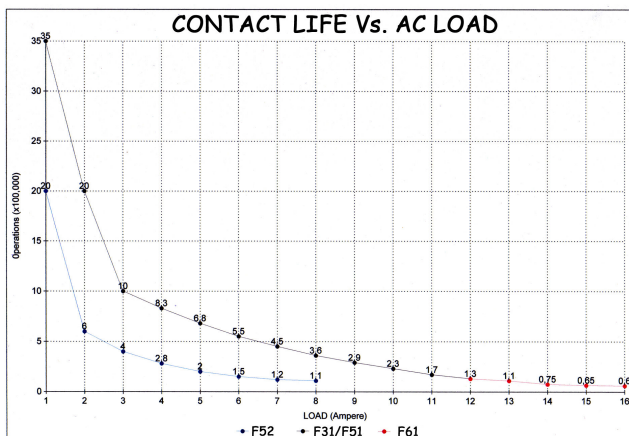
Power supply voltages:  
 12-24-48-110 VDC  
 24-115-230 VAC  
 Rated power: 400 to 500 mW (DC);  
 0.6 to 0.9 VA (AC)  
 Operating range:  
 -20% to +85% of nominal (DC)  
 -20% to +30% of nominal (AC)  
 Minimum hold voltage:  
 60% of nominal (DC)  
 80% of nominal (AC)  
 Must release voltage:  
 5% of nominal (DC)  
 10% of nominal (AC)  
 Thermic insulation class of winding  
 (IEC 317): F (155°C)



## CONTACT CHARACTERISTICS

	F31	F52	F61	
Maximum power rating (AC1) :	3000	2000	4000	VA
Rated current :	12	8	16	A
Rated voltage (AC / DC) :	250 / 30	250 / 30	250 / 30	V
Maximum switched voltage (AC / DC) :	250 / 110	250 / 110	250 / 110	V
Maximum instantaneous current <sup>(1)</sup> :	15	10	20	A
Maximum contact resistance (new contact) : (@ 6VDC - 1A)	50	50	50	m $\Omega$
Minimum switched load : (V / mA min.)	300 (5/5)	300 (5/5)	300 (5/5)	mW
Standard material	Ag-Ni	Ag-Ni	Ag-Ni	90%-10%

(1) Make & maintaining only - max 0.5 sec.



## ORDERING INFORMATION

**F31 - 24 DC - S - 5**

1 2 3 4

- Relay type: F31 - F51 - F52 - F61
- Coil supply voltage: AC or DC
- Contact configuration:  
 S = changeover (standard)  
 L = normally open (on request)

- Alternative contact material:  
 None = standard Silver/ Nickel (Ag-Ni)  
 4 = Silver/ Tin Oxide (Ag-SnO)  
 5 = Gold plated silver (Ag-Ni + 3 $\mu$  Au)

Group 3 and 4 of code can be normally omitted, concerning special types available only on request for agreed min. quantities.