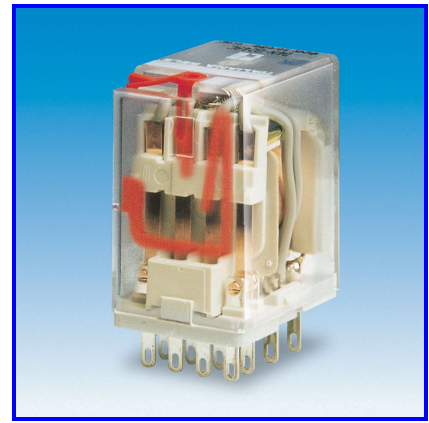


# SERIES D

## Auxiliary Miniature Relays

All-or-Nothing relays offering very high performance and compact size. Design includes a clear protective dust cover. Ratings range from 12 to 6 A, depending upon contact configuration (up to four pole, changeover).

Variations available include a printed circuit and a plug-in type, with AC or DC rated coils. A complete range of sockets is available for the plug-in types (see exclusive literature)



### DIELECTRIC STRENGTH

Coil / contacts :	<b>2500 V RMS</b>
Adjacent poles : (two pole)	<b>2500 V RMS</b>
Adjacent poles : (four pole)	<b>2000 V RMS</b>
Between open contacts :	<b>1500 V RMS</b>
Ground / live parts :	<b>2000 V RMS</b>

### OPERATING TIMES (At Rated Voltage)

Operate (excluding bounces) :	<b>max 13</b>	milliseconds
Release (excluding bounces) :	<b>max 8</b>	milliseconds
Bounces :	<b>max 7</b>	milliseconds

### SPECIFICATION

Min. insulation resistance	10 <sup>4</sup> MΩ @ 500 VDC (all circuits)
Insulation group (VDE 110)	1° Gr. B 250 VAC (2 pole: C 250)
Enclosure classification	IP 40 (IEC 144)
Type of duty	Continuous
Max leakage current	10 mA
Mechanical life expectancy	20x10 <sup>6</sup> operations (AC / DC)
Max ops./hour @ no load	18000 (AC / DC)
Max ops./hour @ rated load	1200 (AC / DC)
Temperature range	-40 to +55°C (AC) / -40 to +70°C (DC)
Storage temperature	-40 to +85°C
Vibration	5g (10 to 150 Hz)
Overvoltage category	II (2 pole: III) IEC 61810-5
Weight	35 grams

### AVAILABLE TYPES

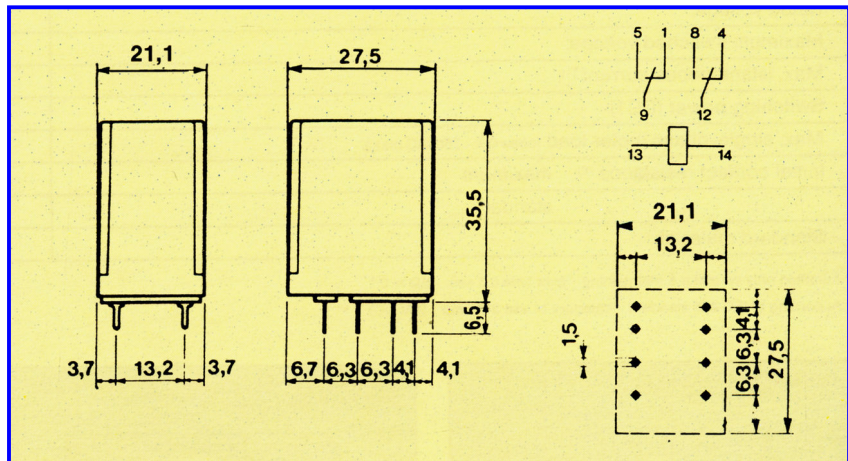
**D2N** - 2 pole changeover **12A-250V AC**

- plug-in / solder terminals (2.2x0.5mm)

**D2P** - 2 pole changeover **10A-250V AC**

- printed circuit terminals (1x0.5mm)

Double action button (Push-to-test/turn-to-lock) and flag indicator fitted as standard. Cadmium-free contact material (Ag-Ni). Gold-plated contacts and special versions fitted with LED indicator, ground bolt or fixing tabs available on request for agreed minimum quantities.



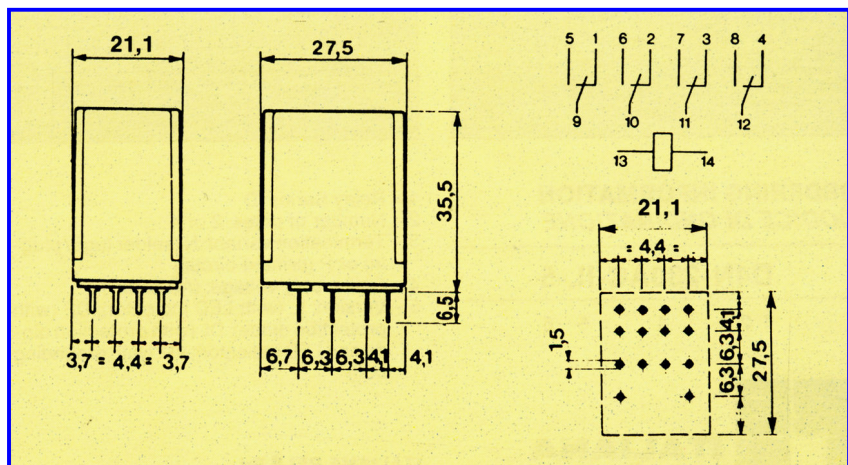
**D4N** - 4 pole changeover **6A-250V AC**

- plug-in / solder terminals (2.2x0.5mm)

**D4P** - 4 pole changeover **6A-250V AC**

- printed circuit terminals (1x0.5mm)

Double action button (Push-to-test/turn-to-lock) and flag indicator fitted as standard. Cadmium-free contact material (Ag-Ni). Gold-plated contacts and special versions fitted with LED indicator, ground bolt or fixing tabs available on request for agreed minimum quantities.



### APPROVALS



All dimensions in mm

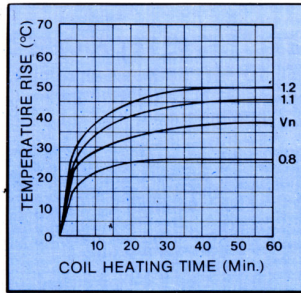
## COIL CHARACTERISTICS

Rated Voltage V	DC			AC		
	Rated Current mA	Resistance R Ω	Rated Current mA	Resistance R Ω	Reactance X Ω	Impedance Z Ω
6	150	40	260	10	21	23
12	75	160	130	38	84	92
24	38	640	65	150	338	370
48	18	2600	33	650	1300	1450
60	15	4000	-	-	-	-
110	8.1	13600	14	3400	7020	7800
230	-	-	7	16100	28800	33000

Resistance values at 20°C ambient temp. Tolerance on R, X and Z: ± 10%

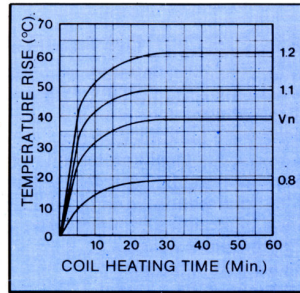
Power supply voltages:  
6-12-24-48-110-230 VAC  
6-12-24-48-60-110 VDC  
Rated power:  
0.9W (DC) ; 1.6 VA (AC)  
Operating range:  
- 20% to + 10% of nominal  
Minimum hold voltage:  
80% of nominal (AC)  
Must release voltage:  
20% of nominal (AC)  
10% of nominal (DC)  
Thermic insulation class of winding  
(IEC 317): F (155°C)

TEMPERATURE RISE VERSUS DC OPERATING VOLTAGE



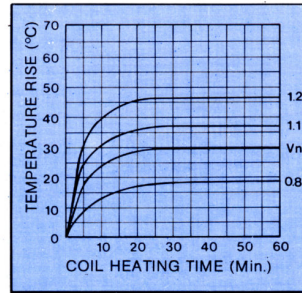
VN = rated voltage

TEMPERATURE RISE VERSUS AC OPERATING VOLTAGE (50 Hz)



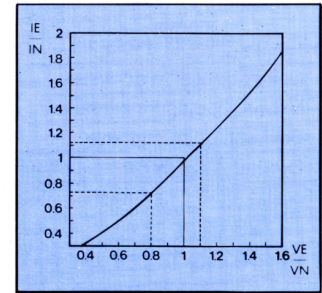
VN = rated voltage

TEMPERATURE RISE VERSUS AC OPERATING VOLTAGE (60 Hz)



VN = rated voltage

VARIATIONS OF POWER CONSUMPTION VERSUS AC OPERATING VOLTAGE (50-60 Hz)



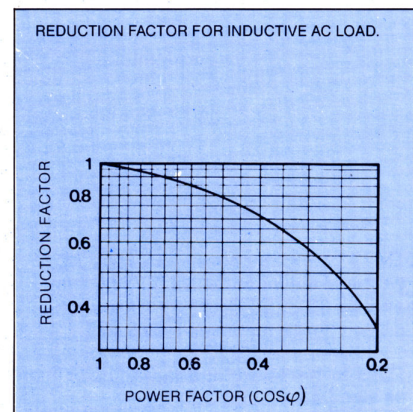
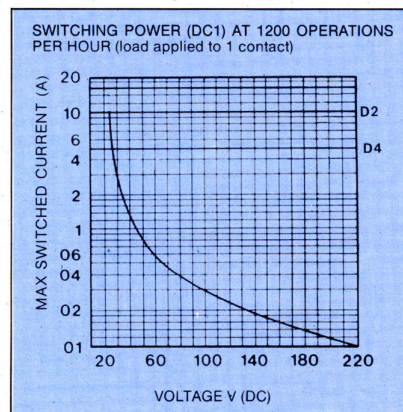
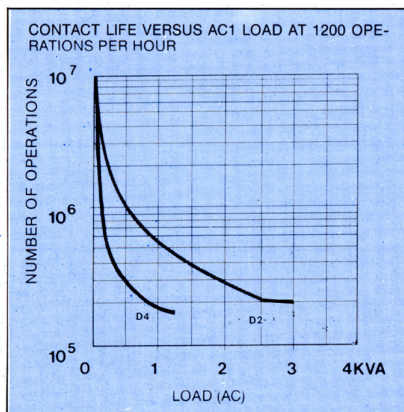
IE = Operating current  
IN = Rated current  
VE = Operating voltage  
VN = rated voltage

## CONTACT CHARACTERISTICS

	2 pole	4 pole	
Maximum power rating (AC1) : (Plug-in / PCB version)	3000 / 2500	1500 / 1500	VA
Rated current : (Plug-in / PCB version)	12 / 10	6 / 6	A
Rated voltage :	250	250	VAC
Maximum switched voltage :	250	250	V
Minimum switched voltage :	5	5	V
Switching power (DC1) :	see diagram		
Maximum instantaneous current <sup>(1)</sup> : (Plug-in / PCB version)	24 / 20	12 / 12	A
Maximum single-phase motor load (cosφ 0.7 - 250VAC max.) :	1/3	1/10	HP
Initial contact resistance <sup>(2)</sup> :	≤ 100	≤ 100	mΩ
Standard material	Ag - Ni	Ag - Ni	90-10%

<sup>(1)</sup> Make & maintaining only - max. 0.5 sec.

<sup>(2)</sup> Category of application (EN 60255) : 3



## ORDERING INFORMATION

**D4N - 230 AC - IL - 5**

1 2 3 4 5 6

- Relay Series: D
- Number of poles: 2 or 4
- Termination variant:  
N = solder lugs / plug-in  
P = printed circuit
- Coil supply voltage: AC or DC
- Optional equipment: IL (LED indicator);  
DP (protection diode); DL (LED + diode);

- VM (grounding bolt); AS-AP (fixing tabs).
- Alternative contact materials:  
None = standard (Ag-Ni 10%)  
5 = Gold plated silver (Ag-Ni + 5μ Au)

Groups 5 & 6 of code are normally omitted, concerning special types available only on request for agreed minimum quantities.