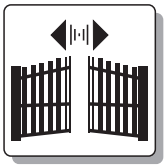
55 Series - Miniature General Purpose relays 5 - 10 - 16 A

A range of miniature general purpose relays, with 1, 2, 3 or 4 CO contacts
Features include:

- P.C.B. version
- AC or DC coils
- B250 insulation group (in accordance with VDE 0110)
- Can be used with supply status indication, coil protection and timer modules
- Approvals (according to type): BBJ, BEAB, CSA, DEMKO, FIMKO, GOST, IMQ, NEMKO, RINA, SEMKO, SEV, cUL, UTE, VDE

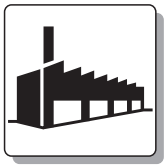
INDUSTRIAL AUTOMATION

AUTOMATIC GATES



TEXTILE MACHINES

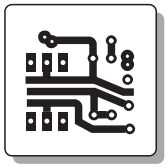
INDUSTRIAL APPLIANCES



MEDICAL EQUIPMENT

PLASTIC MOULDING MACHINES

ELECTRONIC APPLIANCES



WHITE GOODS

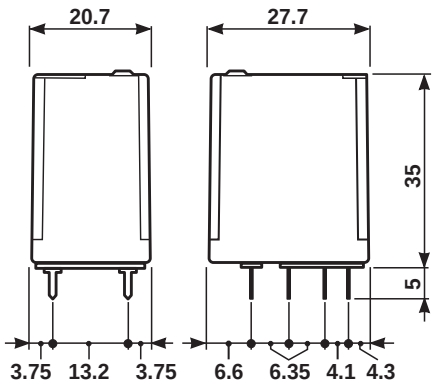
55 Series - Miniature General Purpose relays 5 - 10 - 16 A

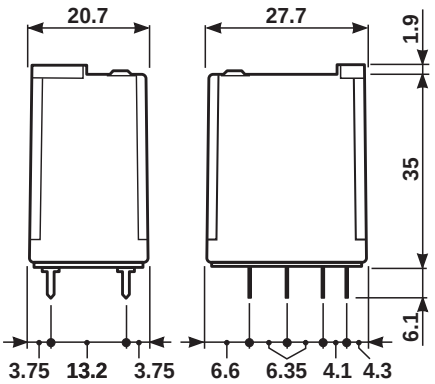
MINIATURE GENERAL PURPOSE RELAYS 1 CO (SPDT) 16 A

TYPE 55.11 P.C.B. mount
- Tin plated brass connections:
  1.2 x 0.5 mm for P.C.B. versions
- Standard contact material: AgCdO (contact option not available)
- Options: see coding table page 49
- Ordering information: see page 49

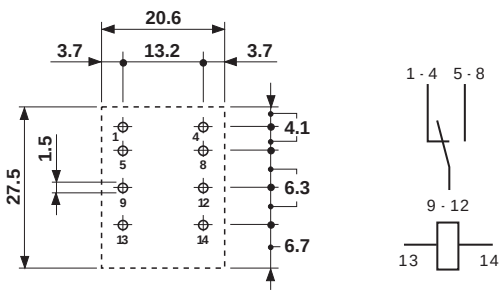
MINIATURE GENERAL PURPOSE RELAYS 2 CO (DPDT) 10 A

TYPE 55.12 P.C.B. mount
- Tin plated brass connections:
  1.2 x 0.5 mm for P.C.B. versions
- Standard contact material: AgNi
- Options: see coding table page 49
- Ordering information: see page 49

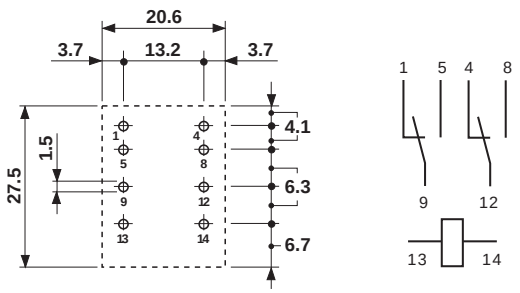




copper side view



copper side view

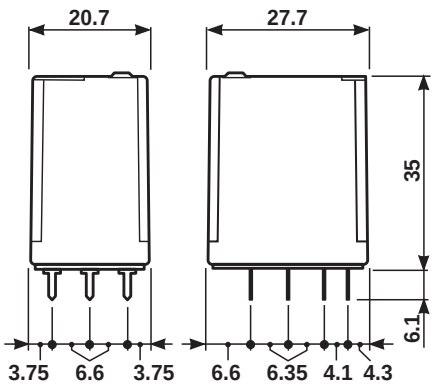


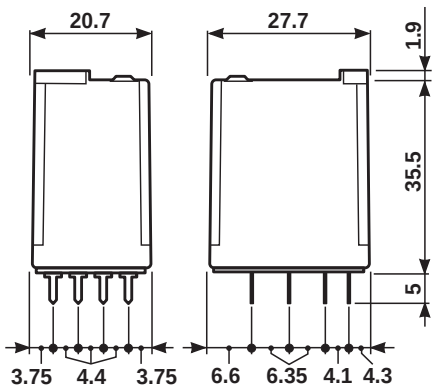
MINIATURE GENERAL PURPOSE RELAYS 3 CO (3PDT) 10 A

TYPE 55.13 P.C.B. mount
- Tin plated brass connections:
  1.2 x 0.5 mm for P.C.B. versions
- Standard contact material: AgNi
- Options see coding table page 49
- Ordering information: see page 49

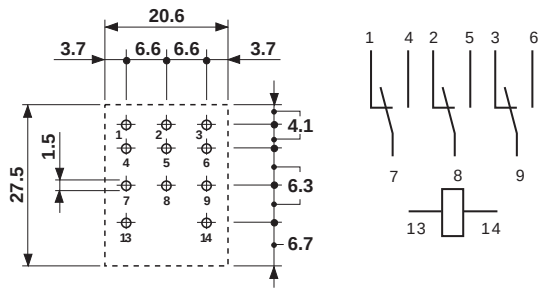
MINIATURE GENERAL PURPOSE RELAYS 4 CO (4PDT) 5 A

TYPE 55.14 P.C.B. mount
- Tin plated brass connections:
  1.2 x 0.5 mm for P.C.B. versions
- Standard contact material: AgNi
- Options: see coding table page 49
- Ordering information: see page 49

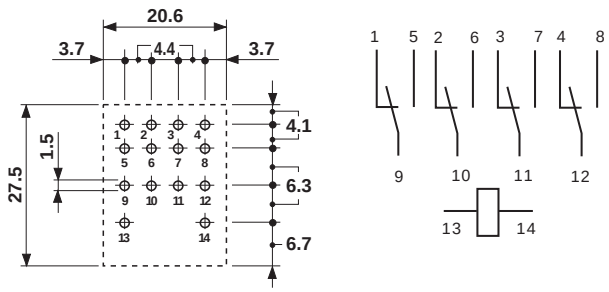




copper side view



copper side view



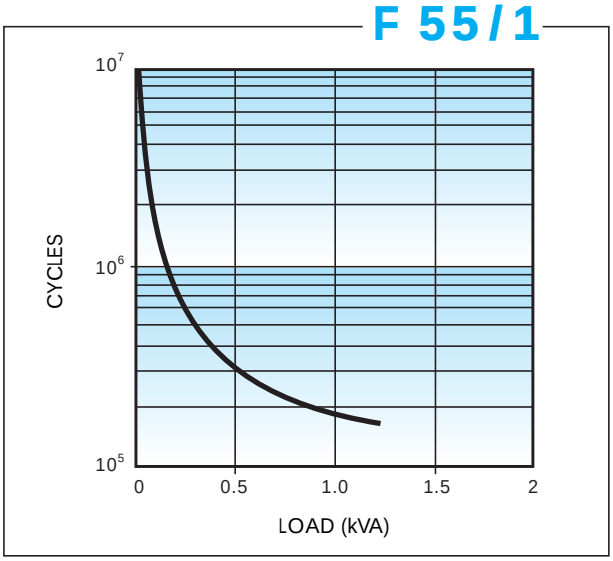
TECHNICAL DATA

DIELECTRIC STRENGTH		1 - 2 - 3 CO	4 CO
tested at leakage current ≤ 10 mA for 1 min at 50 Hz	between coil and contacts	2,000 V	2,000 V
	between open contacts	1,000 V	1,000 V
	between adjacent contacts	2,000 V	2,000 V
	between frame and live parts	1,500 V	1,500 V
SURGE TEST (1.2 / 50 µs) between coil and contacts	2,500 V		
ISOLATION RESISTANCE	≥ $10 \cdot 10^3$ MΩ		
ISOLATION GROUP	B 250		
MAXIMUM SWITCHING FREQUENCY			
- without load	36,000 cycles / h		
- at rated load	1,800 cycles / h (5 · 10 A)		
	600 cycles / h (16 A)		
AMBIENT TEMPERATURE	(–40 ... +70)°C		
MECHANICAL LIFE	$20 \cdot 10^6$ cycles version AC		
	$50 \cdot 10^6$ cycles version DC		
PROTECTION CATEGORY OF ENCLOSURES	IP 40		
OPERATE AND RELEASE TIME			
- pick-up time (0 to U_N)	≤ 10 ms (including contact bounce)		
- drop-out time (U_N to 0)	≤ 15 ms (including contact bounce)		
TYPE OF DUTY	continuous		
DIELECTRIC TEST	2		
TYPE OF RELAY	all-or-nothing		

CONTACT SPECIFICATIONS

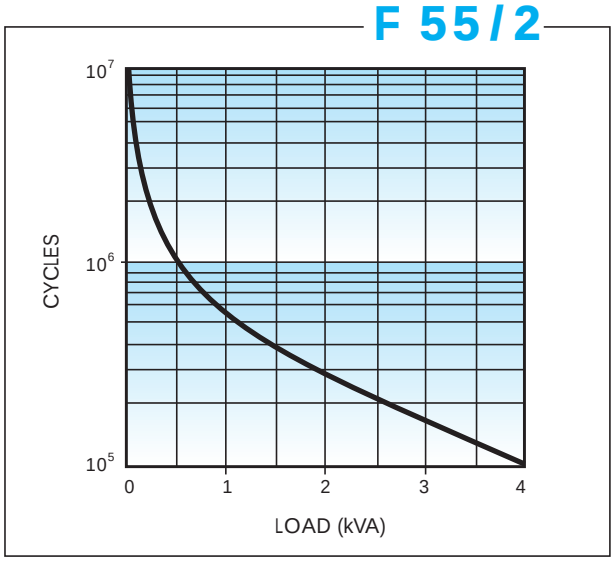
	1 CO (SPDT)	2 CO (SPDT)	3 CO (3PDT)	4 CO (4PDT)
RATED CURRENT	16 A	10 A	10 A	5 A
MAXIMUM PEAK CURRENT	30 A	20 A	20 A	10 A
NOMINAL RATE IN AC1	4,000 V A	2,500 V A	2,500 V A	1,250 V A
NOMINAL RATE IN AC15	750 V A	500 V A	500 V A	250 V A
RATED VOLTAGE	250 V AC	250 V AC	250 V AC	250 V AC
MAXIMUM SWITCHING VOLTAGE	400 V AC	400 V AC	400 V AC	400 V AC
BREAKING CAPACITY IN DC1	see diagram H 55			
SINGLE PHASE HP MOTOR RATING AT 250 V	0.8 kW / 1.2 HP	0.37 kW / 0.6 HP	0.37 kW / 0.6 HP	0.12 kW / 0.2 HP
CONTACT RESISTANCE: - initial	≤ 50 mΩ	≤ 50 mΩ	≤ 50 mΩ	≤ 50 mΩ
MINIMUM SWITCHING LOAD	500 mW (10 V / 5 mA)	300 mW (5 V / 5 mA)	300 mW (5 V / 5 mA)	300 mW (5 V / 5 mA)
STANDARD CONTACT MATERIAL	AgCdO	AgNi	AgNi	AgNi

F 55 / 1



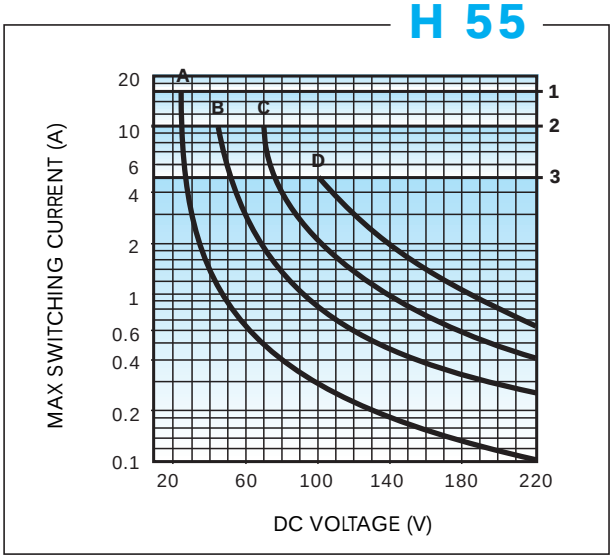
Contact life vs AC1 load.
4 CO relay type (5 A) at 1800 cycles / h.

F 55 / 2



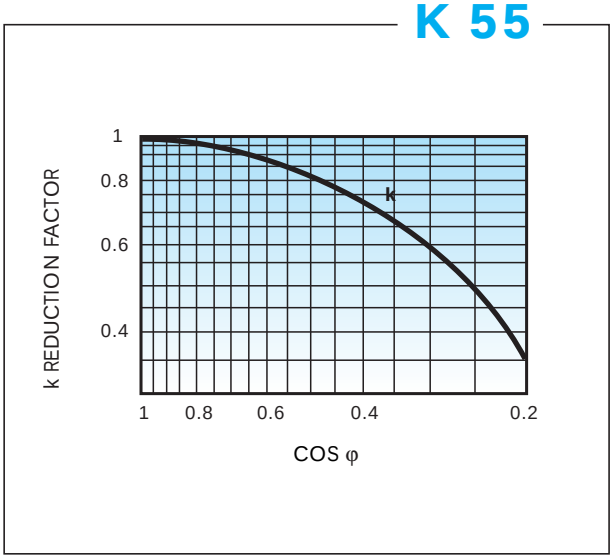
Contact life vs AC1 load.
1 CO relay type (16 A) at 600 cycles / h.
2 - 3 CO relay type (10 A) at 1800 cycles / h.

H 55



Breaking capacity for DC1 load.
1 - 1 CO type (600 cycles / h)
2 - 2 - 3 CO type (1800 cycles / h)
3 - 4 CO type (1800 cycles / h)
A = load applied to 1 contact
B = load applied to 2 contacts in series
C = load applied to 3 contacts in series
D = load applied to 4 contacts in series

K 55



Load reduction factor vs cos φ.

COIL SPECIFICATIONS

VERSIONS:
AC - alternating current 50/60 Hz
DC - direct current
DI - DC coil with a diode in parallel

CONDUCTED DISTURBANCE IMMUNITY	
BURST (acc. to EN 61000 - 4 - 4)	level 4 (4 kV)
SURGE (acc. to EN 61000 - 4 - 5)	level 4 (4 kV)

	AC	DC
RATED POWER	1.5 VA	1 W
OPERATING RANGE	(0.8 ... 1.1) U_N	(0.8 ... 1.1) U_N
HOLDING VOLTAGE	≤ 0.8 U_N	≤ 0.5 U_N
MUST DROP-OUT VOLTAGE	≥ 0.2 U_N	≥ 0.1 U_N
NOMINAL MAGNETOMOTIVE FORCE	150 A	200 A
THERMAL INSULATION CLASS OF WIRE	F (+155°C)	F (+155°C)
THERMAL RESISTANCE	50°C/W	50°C/W

AC VERSION DATA

(R values relate to +20°C. Tolerance of R and I values: ±10 %.)

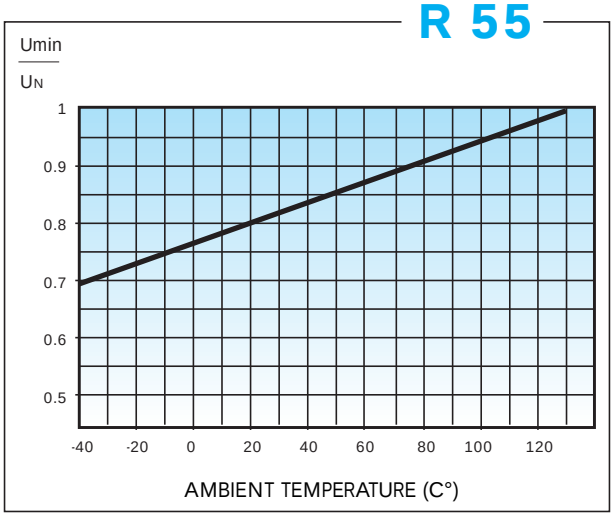
Rated voltage UN (V)	Operating range U min (V)	Operating range U max (V)	Resistance R (Ω)	Nominal absorption I a UN 50 Hz (mA)
6	4.8	6.6	12	234
12	9.6	13.2	50	117
24	19.2	26.4	190	58.3
48	38.4	52.8	770	29.2
60	48	66	1,200	23.3
110	88	121	3,940	12.7
125	100	137.5	4,700	11.2
230	184	253	17,000	6.3
240	192	264	19,100	5.8

DC VERSION DATA

(R values relate to +20°C. Tolerance of R and I values: ±10 %.)

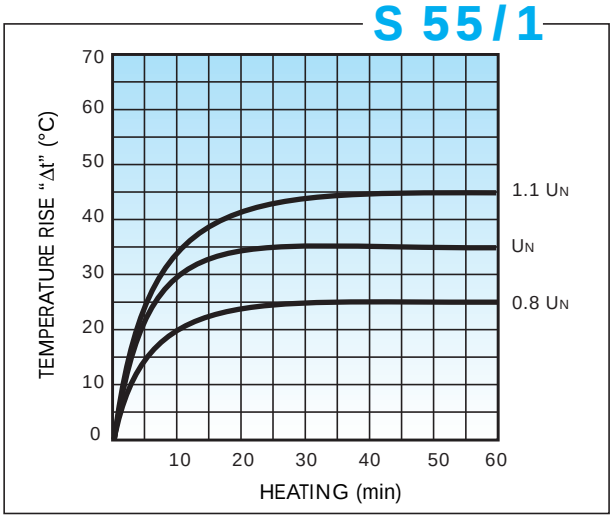
Rated voltage UN (V)	Operating range U min (V)	Operating range U max (V)	Resistance R (Ω)	Nominal absorption I a UN (mA)
6	4.8	6.6	40	150
12	9.6	13.2	140	86
24	19.2	26.4	600	40
48	38.4	52.8	2,400	20
60	48	66	4,000	15
110	88	121	12,500	8.8
125	100	137	17,300	7.2

R 55



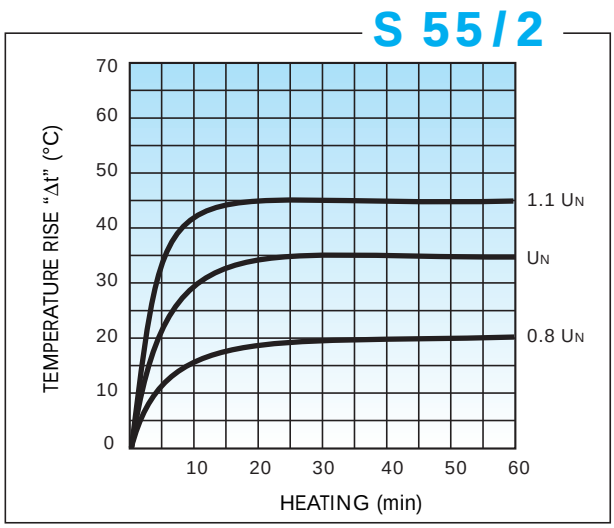
DC coil min pick-up voltage vs ambient temperature.
Umin = pick-up voltage UN = rated voltage

S 55/1



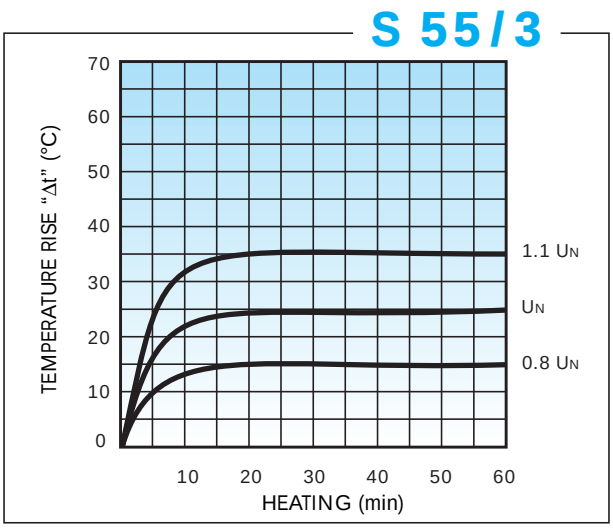
Temperature rise "Δt " vs applied voltage. DC coils.

S 55/2



Temperature rise "Δt " vs applied voltage. AC - 50 Hz coils.

S 55/3



Temperature rise "Δt " vs applied voltage. AC - 60 Hz coils.

ORDERING INFORMATION

Example: a 55 series P.C.B. relay, 4 CO (4PDT) contacts, coil rated 12 V DC.

5 5	1	4	9	0 1 2	0 0	0	0

Series

Type
1 = P.C.B.

No. of poles
1 = 1 CO (SPDT)
2 = 2 CO (DPDT)
3 = 3 CO (3PDT)
4 = 4 CO (4PDT)

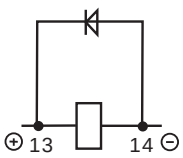
Coil version
3 = DC diode in parallel to the coil (+A1/13) #
8 = AC (50/60 Hz)
9 = DC

Coil voltage
006 = 6 V
012 = 12 V
024 = 24 V
048 = 48 V
060 = 60 V
110 = 110 V
120 = 120 V AC only
230 = 230 V AC only
240 = 240 V AC only

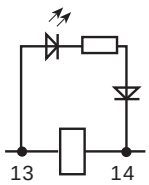
Contact material and contact circuit
00 = Standard
20 = AgCdO
50 = AgNi + 5µm Au #

Options
00 = Standard
01 = Sealed (for 55.12, 55.13 and 55.14 only)

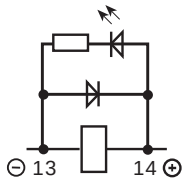
OPTIONS



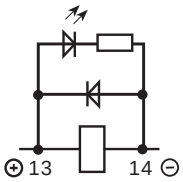
Coil version = 3



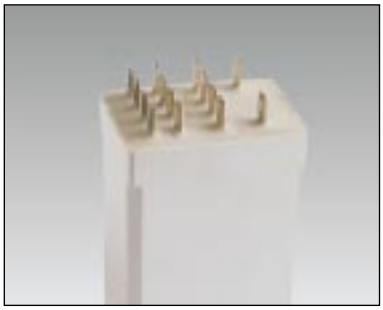
Option = 0030



Options = 0060 - 0070



Options = 0080 - 0090



SEALED VERSION (0001)
Recommended for automatic soldering and cleaning processes.
Not available for 1 CO (SPDT) relay.

REMOVE VENTILATION PIP
The sealed version has a removable pip to avoid ozone accumulation when relay is operating.