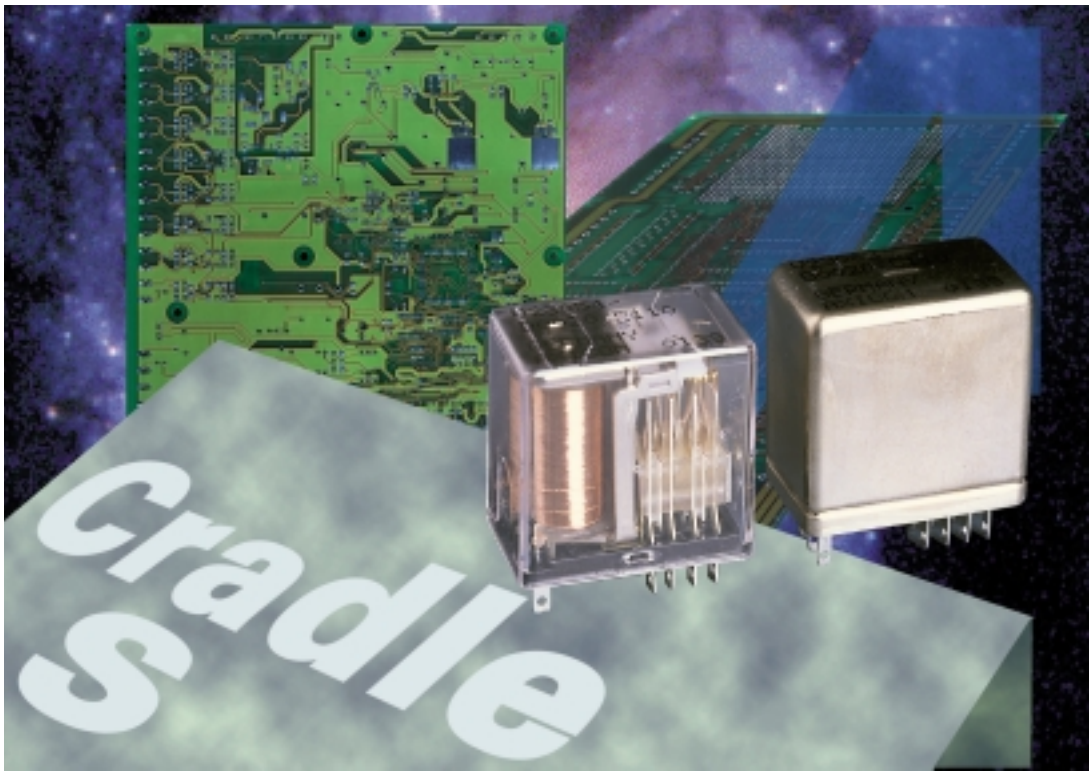
tyco Electronics

AXICOM

The Best Relaytion



Cradle Relay S

Hand solder and plug-in relay,
for DC operation,
non-polarized, non-latching

Features

- Stronger magnet system and thus wider voltage range than cradle relay N
- highly reliable
- Contacts for signal loads and currents up to 5 A
- AC and DC, latching and non-latching, coils operating voltage 6 V ... 220 V
- Multi purpose relay
- great variety of contact arrangements and materials to meet specific applications
- Sockets for easy and quick mounting of relays (see data sheet Accessories)

Typical applications

- Press controls with high safety requirements (forcibly guided springs)
- Traffic and railroad signalling engineering
- Motor vehicle traffic controls

Versions

- Size I, II or III, depending on contact set
- Standard contact sets with max. 6 changeover contacts or 6 make contacts
- Single or bifurcated contacts
- Hand solder terminals also for plug-in connection with screw fixing
- Dust-protected

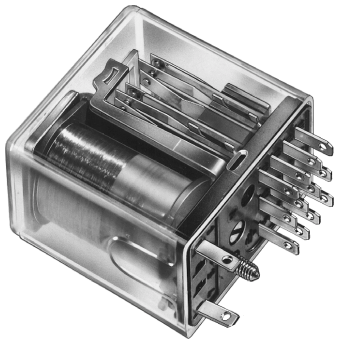
Version V23054-Cxxx Size I and
V23054-Dxxx Size II

Hand solder terminals, silver-plated

Also for plug-and-socket connection
plus screw fixing

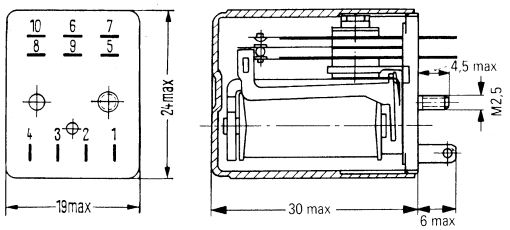
With earth terminal

Dust-protected

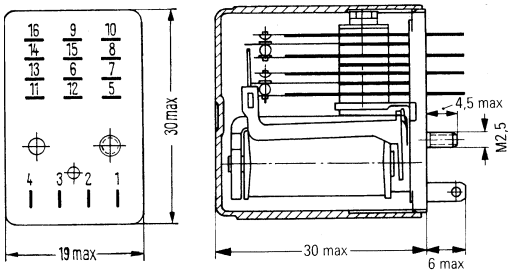


Dimension drawing (in mm)

Size I



Size II



For sockets and hold-down springs see data sheet Accessories

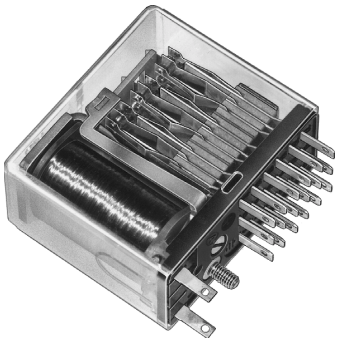
Version V23054-Exxx Size III

Hand solder terminals, silver-plated

Also for plug-in connection
plus screw fixing

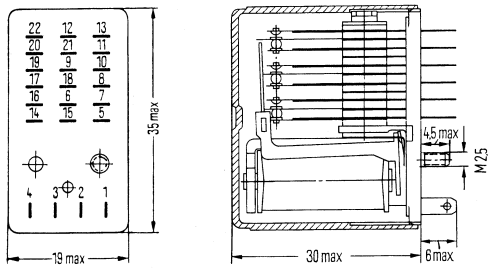
With earth terminal

Dust-protected



Dimension drawing (in mm)

Size III



For sockets and hold-down springs see data sheet Accessories

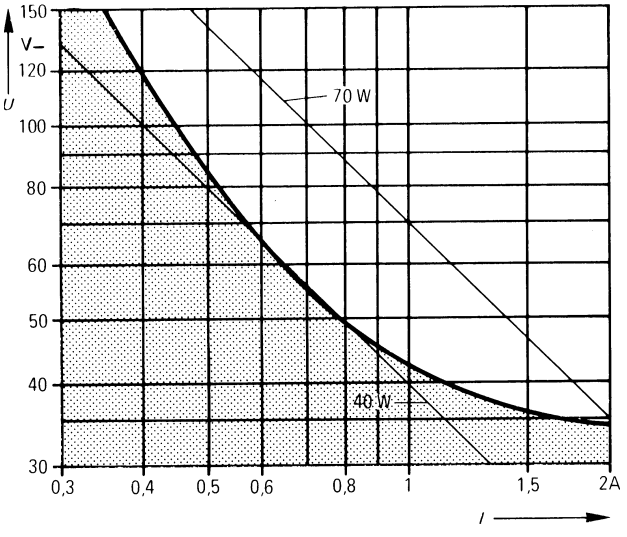
Contact Data

Ordering code block 3	B104/B110/ B112/B 133	B604/B610/ B612/B633	C104/C110/ C112/C133	C404/C410/ C412/C433	F104/F105/ F 110
Type of contact	max. 6 changeover contacts or 6 make contacts				
Contact assembly	single contacts		bifurcated contacts		single contacts
Contact material	silver, gold-flashed	gold F	silver, gold-flashed	gold F	silver, gold-flashed
Max. switching voltage	150 Vdc 125 Vac	36 Vdc 30 Vac	150 Vdc 125 Vac	36 Vdc 30 Vac	250 Vdc 250 Vac
Max. switching current	2 A	0.2 A	2 A	0.2 A	5 A
Max. switching capacity	35 to 70 W see load limit curve 50 VA	5 W 5 VA	35 to 70 W see load limit curve 50 VA	5 W 5 VA	50 to 140 W see load limit curve 500 VA
Max. continuous current at max. ambient temperature	2 A				5 A

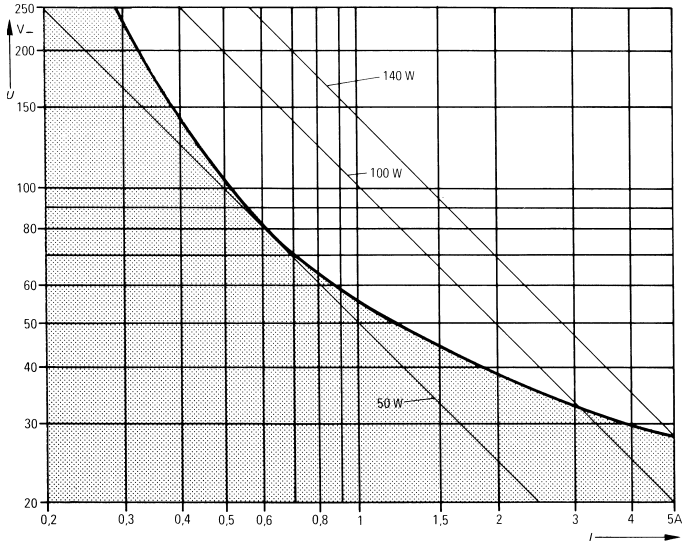
Load limit curve

Safe breaking, no stationary arc
Contact material silver, gold-flashed

Contact sets B1xx and C1xx

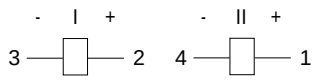
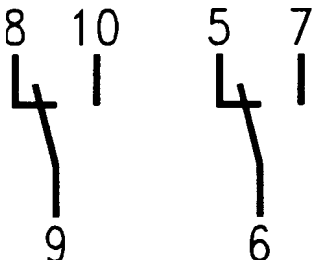
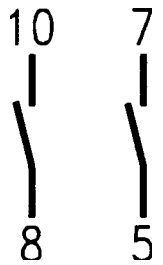


Contact sets F1xx

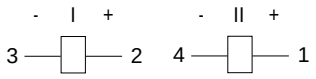
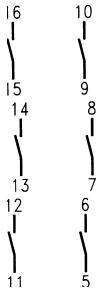
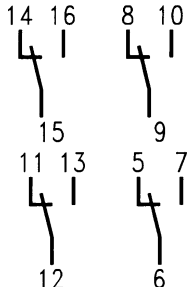
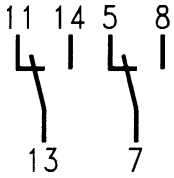


Contact sets

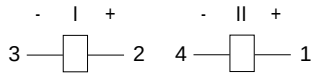
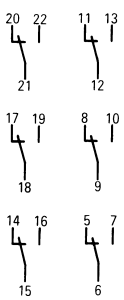
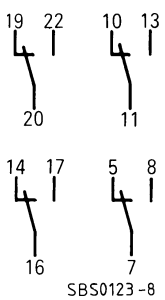
Size I

Number of contacts and type	2 changeover contacts		2 make contacts
Symbols with base conncections  Contacts in release condition, coil polarity to set the relay	 		
Contact assembly	single contacts	bifurcated contacts	single contacts
Contact material silver, gold-flashed Ordering code block 3	B104	C104	F105
Contact material gold F Ordering code block 3	B604	C404	

Size II

Number of contacts and type	6 make contacts		4 changeover contacts		2 changeover contacts
Symbols with base conncections  Contacts in release condition, coil polarity to set the relay	 		 		
Contact assembly	single contacts	single contacts	single contacts	bifurcated contacts	single contacts
Contact material silver, gold-flashed Ordering code block 3	B112	C112	B110	C110	F 104
Contact material gold F Ordering code block 3	B612	C412	B610	C 410	

Size III

Number of contacts and type	6 changeover contacts		4 changeover contacts
Symbols with base conncections  Contacts in release condition, coil polarity to set the relay	 		
Contact assembly	single contacts	bifurcated contacts	single contacts
Contact material silver, gold-flashed Ordering code block 3	B133	C133	F110
Contact material gold F Ordering code block 3	B633	C433	

Coil Data

Nominal voltage	from 6 Vdc to 220 Vdc
Typical nominal power consumption, at 20“C	1 W
Class of the operative range acc to EN 61810-1 / IEC 61810-1 and VDE 0435 Part 201	2
Operating voltage (according to the coil type)	max. 92% of the nominal voltage

Coil version

Nominal voltage U_{nom} Vdc	Operating voltage range at 20° C Minimum voltage U_I Vdc Conctact sets -B104/-B604/ -B110/-B610/ -B612/-F105/	 -B133/-B633/-C104/ -C404/-C112/-C412/ -F104	 C112 C104 F110	 C133 C433	Maximum voltage U_{II} Vdc	Resistance at 20° C Ω	Coil number Ordering code block 2
6	2.4	2.9	3.5	4.5	9	33 ± 3.3	011
12	4.7	5.8	7.0	8.8	18	130 ± 13	015
24	10.5	13	15.5	20	39	630 ± 63	020
60	29	36	43	55	94	3800 ± 570	026
110	44	53.5	66	85	145	9200 ± 1380	004
125	59	73	88	112	190	15500 ± 2320	013
220	79	98	118	151	240	25000 ± 3750	003

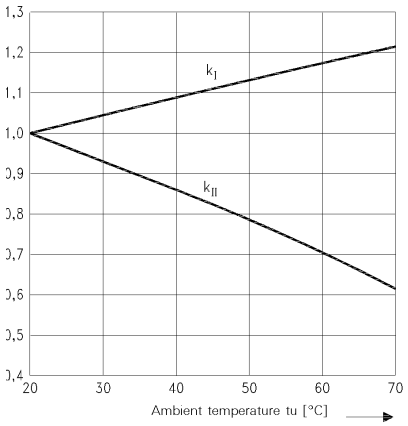
Terminals:
Coil with 1 winding
Start 4 End 1

Coil with 2 windings (upon request)
Start 3 End 2 for winding I
Start 4 End 1 for winding II

The minimum voltage U_I depends on the contact set and the ambient temperature, the maximum voltage U_{II} only depends on the ambient temperature.

Between minimum voltage $U_{I\,tamb}$ and operating voltage U a safety margin of approx. 20% is recommended.

$U_{I\,tamb}$ (1.2) $< U \leq U_{II\,tamb}$
$U_{I\,tamb} = U_{I\,20°C} \cdot k_{I\,tamb}$
$U_{II\,tamb} = U_{II\,20°C} \cdot k_{II\,tamb}$
t_{amb} = Ambient temperature
U = Operating voltage
$U_{I\,tamb}$ = Minimum voltage at ambient temperature, t_{amb}
$U_{II\,tamb}$ = Maximum voltage at ambient temperature, t_{amb}
k_I and k_{II} = Factors



Note: Instructions for impulse operation see data sheet cradle relay N

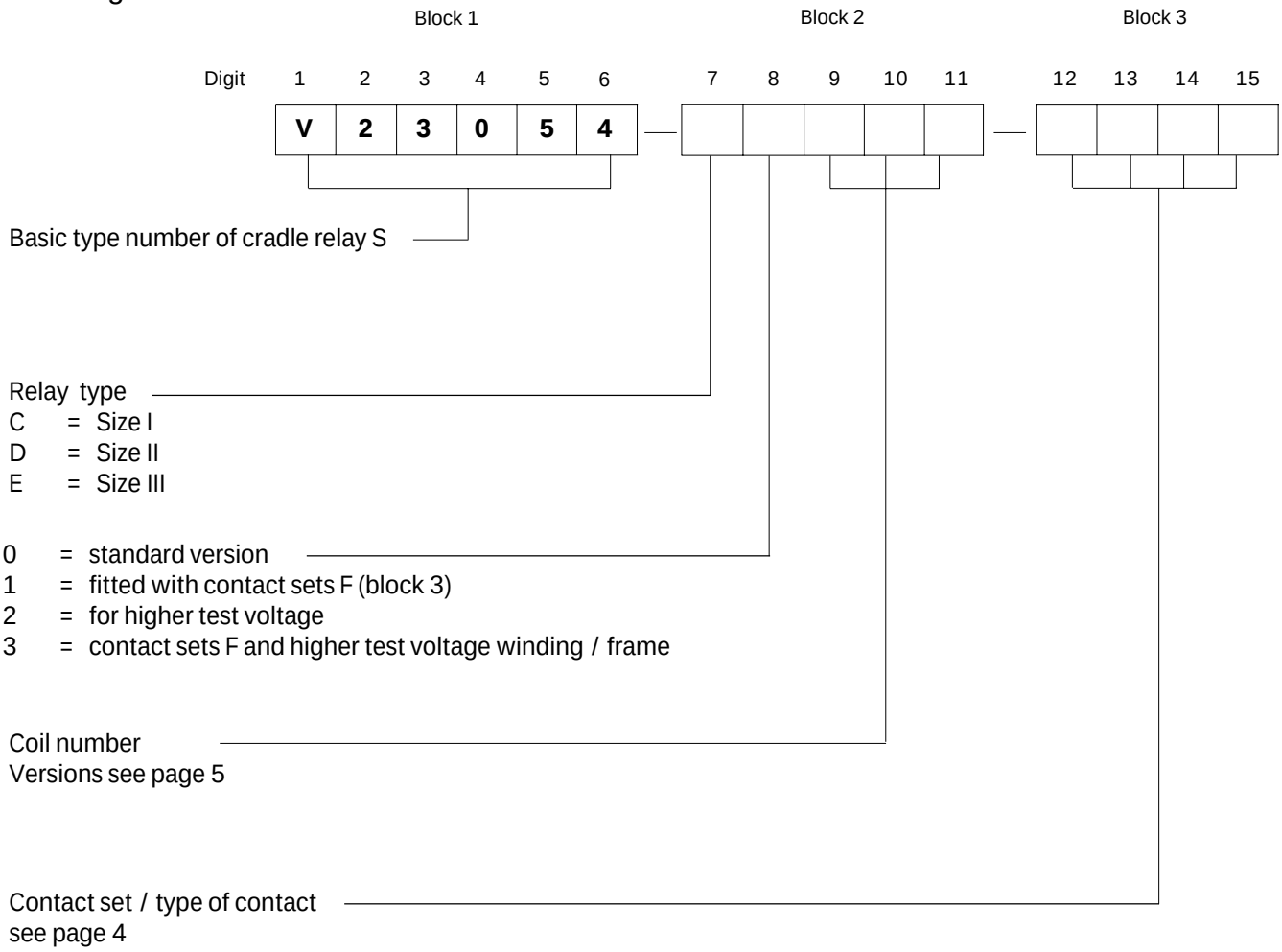
General data

Ordering code block 3	B1xx	B6xx	C1xx	C4xx	F1xx
Operating time at U_{nom} and 20° C, typical	16 ms				
Release time, typical	2 ms				
Maximum switching rate without load	50 operations/s				10 operations/s
Ambient temperature range acc. to EN 61810-1 / IEC 61810-1 and VDE 0435 part 201	-40° C ... +70° C				
Thermal resistance	40 K/W				
Maximum temperature	100° C				
Continious thermal load	2.1 W				
Degree of protection acc. to EN 60529 / IEC 60529 / VDE 0470 part 1	dust-protected IP 30				
Mechanical endurance	approx. 10^8 operations				approx. 10^7 operations
Mounting position	any				
Weight					
Size I	approx. 20 g				
Size II	approx. 25 g				
Size III	approx. 27 g				

Insulation

Ordering code block 3	B1xx	B6xx	C1xx	C4xx	F1xx
Test voltage (1 min)					
winding / frame	500 Vac_{rms}				500 Vac_{rms}
contact / contact	500 Vac_{rms}				1000 Vac_{rms}
contact / frame	500 Vac_{rms}				1000 Vac_{rms}

Ordering Code



Ordering example:
V23054-E0020-C133
Cradle relay S, size III, standard version, coil 24 Vdc, 6 changeover contact set, bifurcated contacts, contact material silver, gold-flashed

Note:
The ordering scheme enables a multitude of variations. However, not all variations are defined as construction specifications (ordering code) and thus in the current delivery program.

Special design can be carried out to customer specifications. Please contact your local representative.

Ordering Information

Relay Code	Tyco Part Number
V23054D 20B110	5-1393812-1
V23054D 20C110	5-1393812-3
V23054D1020F104	9-1393812-3
V23054E 20B133	3-1393813-6
V23054E 22B133	4-1393813-4
V23054E1019F110	7-1393813-2
V23054E1020F110	7-1393813-6