

AUXILIARY RELAY

Voltage Operated Auxiliary Relay

CV2_ Product Guide



Voltage operated auxiliary relay for contact multiplication and visual operation indication with high reliability capable of tripping applications

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Introduction

Features

- Compact size
- Mechanical operation indication
- Heavy duty contacts with double interruption
- Wide range of auxiliary supply range
- Low power consumption

Applications

The auxiliary relay type CV2 is intended for use in control and protective systems in industrial plants and power stations, where it is mainly used in conjunction with control systems, particularly where a contact multiplication and visual indication of a given function is required. The relay supports functions as indicated in Table 2.

Table 1. Application and supported functions

Functionality	Relay type	ANSI	IEC
DC operated auxiliary relay with single element, Flush mounting	CV2DJ	30x, 63x	Aux. relay
DC operated auxiliary relay with two element, Flush mounting	CV2D2J	30x, 63x	Aux. relay
AC operated auxiliary relay with single element, Flush mounting	CV2AJ	30x, 63x	Aux. relay
AC operated auxiliary relay with two element, Flush mounting	CV2A2J	30x, 63x	Aux. relay
DC operated auxiliary relay with three element, Flush mounting	CV2D3Z	30x, 63x	Aux. relay
DC operated auxiliary relay with six element, Flush mounting	CV2D6Z	30x, 63x	Aux. relay
AC operated auxiliary relay with three element, Flush mounting	CV2A3Z	30x, 63x	Aux. relay
AC operated auxiliary relay with six element, Flush mounting	CV2A6Z	30x, 63x	Aux. relay

Design and principle of operation

The indicating relay type CV2 is an instantaneous hinged-armature relay with two contacts. These may be either two normally open contacts, or one normally open and one normally closed.

The magnetic system comprises the fixed core and the hinged-armature which actuates the contacts. When the coil is de-energised, the armature is reset to its original position by a spring.

The operation knob pops out when relay picks up. When the relay is in its normal state i.e. prior to pick up the knob is black, when relay picks up there appears an orange ring. The indicator can be reset by pressing knob back in.

The terminals on 1/2'S' flush mounting case have an opening of diameter 3.8 mm for external connections. These can accommodate two wires with a cross section of 2.5mm².

Technical data

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Table 2. Dimensions

Description	Value	Single, two element relay	Three, six element relay
Width	frame	108.0 mm	270.0 mm
	case	088.0 mm	160.0 mm
Height	frame	164.0 mm	164.0 mm
	case	112.0 mm	112.0 mm
Depth	case	152.0 mm (127 mm + 25 mm)	152.0 mm (127 mm + 25 mm)
Weight	relay	1.00 kg	3.00 kg

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Table 3. Auxiliary Power supply

Description	Value
Uaux nominal	24, 30, 48, 110, 220, 250 V DC 110, 240 V AC, 50 Hz with rectifier
Uaux variation	80...110% of Uaux
Pick-up voltage (%Uaux)	< 75%
Drop-off voltage (%Uaux)	> 15%
Operation time at Uaux	20-35 ms
Maximum power consumption	3.0 W DC and 2.5 VA for AC for single, two element relay 9.0 W DC and 7.5 VA for AC for three, six element relay
Application with AC auxiliary voltage	In case relay is supplied through UPS step-wave or square wave, interposing transformer / surge suppressor is needed to limit aux. supply peak voltage below the upper limit of the relay

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Table 4. Output contact details

Description	Value
Rated voltage	250 V AC/DC
Continuous contact carry	10 A
Make and carry for 0.5 sec	30 A
Breaking capacity	As below

Technical data

Table 5. Output contact details

Voltage	24V, 30V		48V		110V		250V	
	1	2 in series	1	2 in series	1	2 in series	1	2 in series
Contacts								
DC resistive load	16A	20A	16A	20A	8A	15A	1.1A	6A
DC inductive. L/R =15ms	7.5A	10A	7.5A	10A	3A	10A	0.8A	3.5A
AC resistive	20A	-	20A	-	20A	-	20A	-
AC inductive, CosΦ =0.3	20A	-	20A	-	20A	-	20A	-

Table 6. Environmental conditions

Description	Value
Operating temperature range	-10...+55°C
Short-time service temperature range	-25...+70°C (<16 h)
Transport and storage temperature range	-25...+70°C
Relative humidity	< 93%, non-condensing
Atmospheric pressure	86...106 kPa
Altitude	up to 2000 m

Table 7. Environmental tests

Description	Type test value	Reference
Dry heat test (humidity < 50%) • Working • Storing	16 h at +55°C, 4 h at +70°C	IEC 60068-2-2
Dry cold test • Working • Storing	16 h at -10°C 4 h at -25°C	IEC 60068-2-1
Damp heat test, cyclic	6 cycles (12 h + 12 h) at +25°C...+55°C Rh > 93%	IEC 60068-2-30
Change of temperature test	72 hours at -25°C 72 hours at +70°C	IEC 60068-2-1, IEC 60068-2-2

Table 8. Insulation tests

Description	Type test value	Reference
Dielectric test • Test voltage	2 kV, 50 Hz, 1 min	IEC 60255-27
Impulse voltage test • Test voltage	5 kV, 1.2/50 μs, 0.5 J	IEC 60255-27
Insulation resistance test • Isolation resistance	> 100 M Ω at 500 V DC	IEC 60255-27

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Table 9. Mechanical tests

Description	Type test value	Reference
Vibration tests • Response • Endurance / Withstand	10...150 Hz, 0.075 mm / 0.5g, 1 sweep / axis 10...150 Hz, 1.0 g, 20 sweeps / axis	IEC 60255-21-1, class I
Shock tests • Response • Endurance / Withstand	5 g, 3 pulses in each direction 15 g, 3 pulses in each direction	IEC 60255-21-2, class I
Bump tests	10 g, 1000 bumps in each direction	IEC 60255-21-2, class I

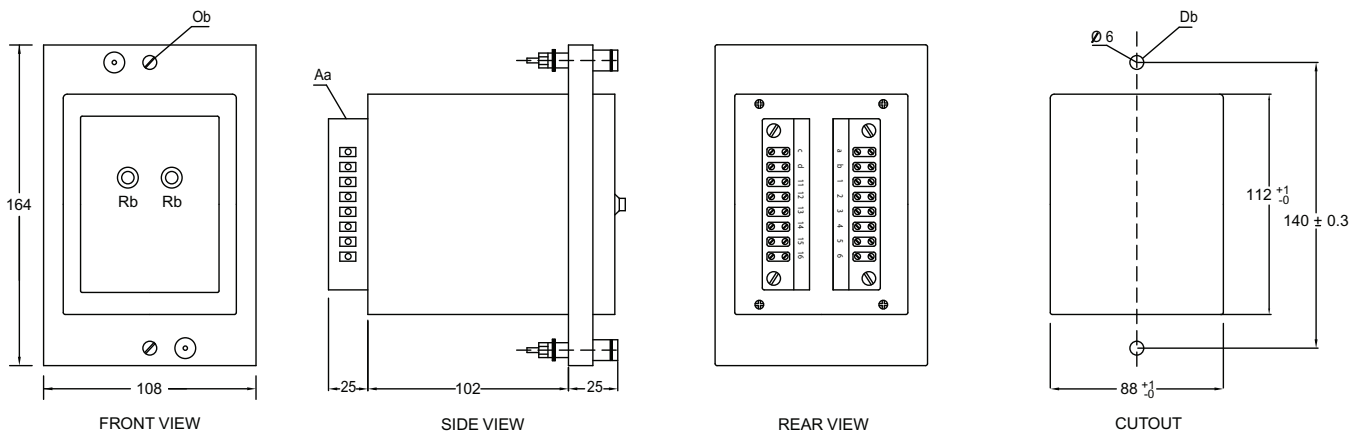
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Table 10. Mechanical life

Description	Type test value	Reference
Mechanical life	1 x 10 ⁶ switching operations	IEC 60255-6

Dimensions and Mounting

The panel cut-out for flush mounting:

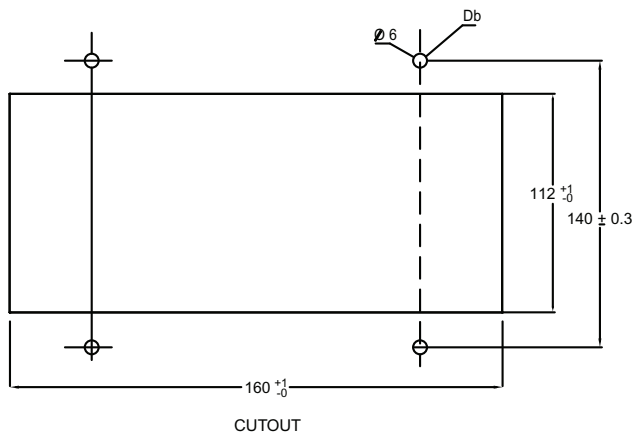
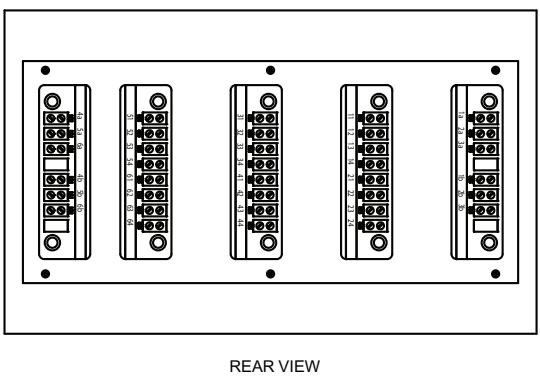
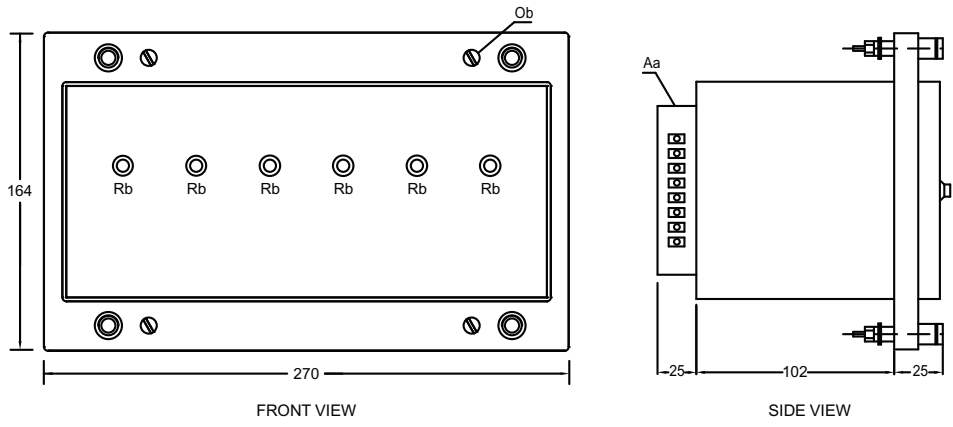
- a) Single, two element relay
 - Height: 112.0 ± 1.0 mm (140.0 ± 0.3 mm between center of mounting holes)
 - Width: 88.0 ± 1.0 mm
- b) Three, six element relay
 - Height: 112.0 ± 1.0 mm (140.0 ± 0.3 mm between center of mounting holes)
 - Width: 88.0 ± 1.0 mm
- b) Three, six element relay
 - Height: 112.0 ± 1.0 mm (140.0 ± 0.3 mm between center of mounting holes)
 - Width: 160.0 ± 1.0 mm



Legend

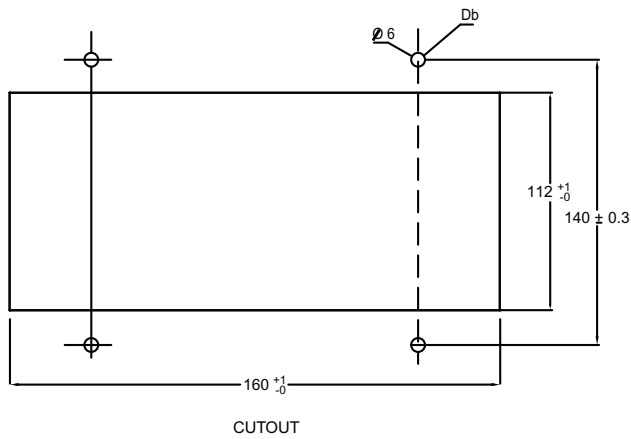
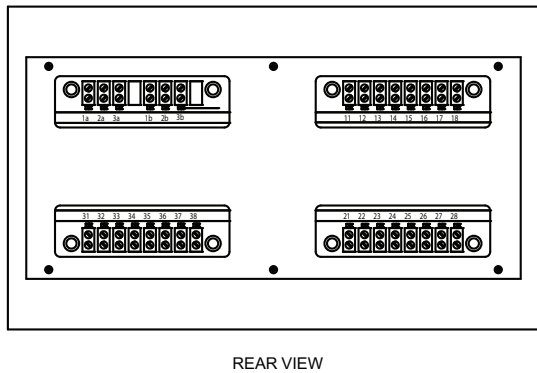
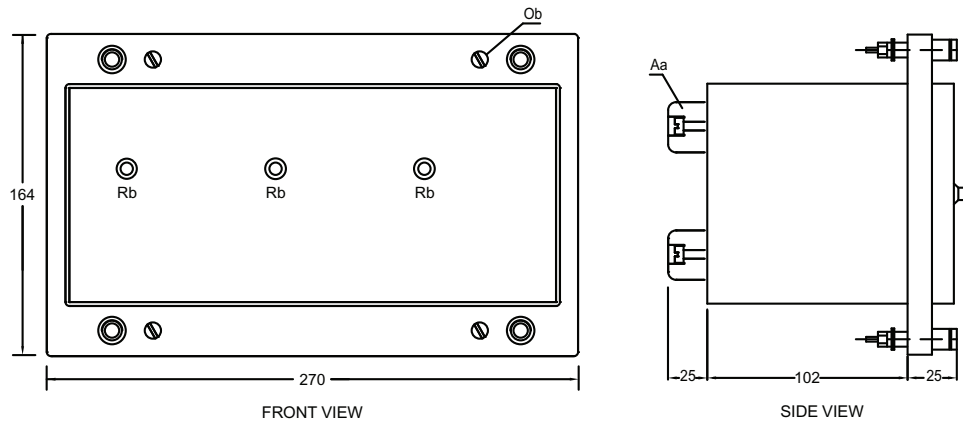
Aa : Terminal Socket
 Db : Mounting hole
 Ob : Mounting screw

Figure 5. Dimension of relay mounting in 1/25 case mounting



- Legend**
- Aa : Terminal Socket
 - Db : Mounting hole
 - Ob : Mounting screw
 - Rb : Reset Button

Figure 6. Dimension of relay mounting in 1/23S case mounting (CV2D6Z)



Legend

- Aa : Terminal Socket
- Db : Mounting hole
- Ob : Mounting screw
- Rb : Reset Button

Figure 7. Dimension of relay mounting in 1/23S case mounting (CV2D3Z)

Selection and Ordering Data

Selection and ordering data

The relay type and serial number label identifies the relay. An order number label is placed on the side of the relay. The order number consists of a string of codes generated from auxiliary supply of the relay.

Use the ordering key information in Fig. 6 to generate the order number when ordering complete protection relay.

a. Ordering code of CV2D2J

#	Description	
Example code		
Product type		
1-7	Electromechanical	1MYN563
Relay type		
8-10	CV2D2J	627
Vacant digit		
11	Vacant	-
Auxiliary supply		
	24V DC	A
	30V DC	B
12	48V DC	C
	110V DC	D
	220V DC	E
	250V DC	F
Contact configuration		
13-14	4 NO + 0 NC	BB
	3 NO + 1 NC	BF
	2 NO + 2 NC	BC

1MYN563 627 - D BC



b. Ordering code of CV2DJ

1MYN563 630 - D BE

—
Example code

#	Description	
1-7	Product type	
	Electromechanical	1MYN563
8-10	Relay type	
	CV2DJ	630
11	Vacant digit	
	Vacant	-
12	Auxiliary supply	
	24V DC	A
	30V DC	B
	48V DC	C
	110V DC	D
	220V DC	E
	250V DC	F
13-14	Contact configuration	
	2 NO + 0 NC	BD
	1 NO + 1 NC	BE

c. Ordering code of CV2A2J

1MYN563 651 - R BC

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Example code

#	Description	
1-7	Product type	
	Electromechanical	1MYN563
8-10	Relay type	
	CV2A2J	651
11	Vacant digit	
	Vacant	-
12	Auxiliary supply	
	110V AC	M
	240V AC	R
13-14	Contact configuration	
	4 NO + 0 NC	BB
	3 NO + 1 NC	BF
	2 NO + 2 NC	BC

d. Ordering code of CV2AJ

1MYN563 647 - R BE

—
Example code

#	Description	
1-7	Product type	
	Electromechanical	1MYN563
8-10	Relay type	
	CV2AJ	647
11	Vacant digit	
	Vacant	-
12	Auxiliary supply	
	110V AC	M
	240V AC	R
	Contact configuration	
13-14	2 NO + 0 NC	BD
	1 NO + 1 NC	BE

e. Ordering code of CV2D3Z

1MYN563 663 - D BR

—
Example code

#	Description	
1-7	Product type	
	Electromechanical	1MYN563
8-10	Relay type	
	CV2D3Z	663
11	Vacant digit	
	Vacant	-
12	Auxiliary supply	
	24V DC	A
	30V DC	B
	48V DC	C
	110V DC	D
	220V DC	E
	250V DC	F
13-14	Contact configuration	
	12 NO + 0 NC	BN
	9 NO + 3 NC	BP
	6 NO + 6 NC	BR

f. Ordering code of CV2A3Z

1MYN563 664 - M BR

—
Example code

#	Description	
1-7	Product type	
	Electromechanical	1MYN563
8-10	Relay type	
	CV2A3Z	664
11	Vacant digit	
	Vacant	-
12	Auxiliary supply	
	110V AC	M
	240V AC	R
13-14	Contact configuration	
	12 NO + 0 NC	BN
	9 NO + 3 NC	BP
	6 NO + 6 NC	BR

g. Ordering code of CV2D6Z

1MYN563 665 - D BR

—
Example code

#	Description	
1-7	Product type	
	Electromechanical	1MYN563
8-10	Relay type	
	CV2D6Z	665
11	Vacant digit	
	Vacant	-
12	Auxiliary supply	
	24V DC	A
	30V DC	B
	48V DC	C
	110V DC	D
	220V DC	E
13-14	Contact configuration	
	12 NO + 0 NC	BN
	6 NO + 6 NC	BR

h. Ordering code of CV2A6Z

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Example code															
#	Description														
1-7	Product type														
	Electromechanical														1MYN563
8-10	Relay type														
	CV2A6Z														666
11	Vacant digit														
	Vacant														-
12	Auxiliary supply														
	110V AC														M
	240V AC														R
13-14	Contact configuration														
	12 NO + 0 NC														BN
	6 NO + 6 NC														BR

Figure 6. Ordering key for relay

Connection and terminal diagram

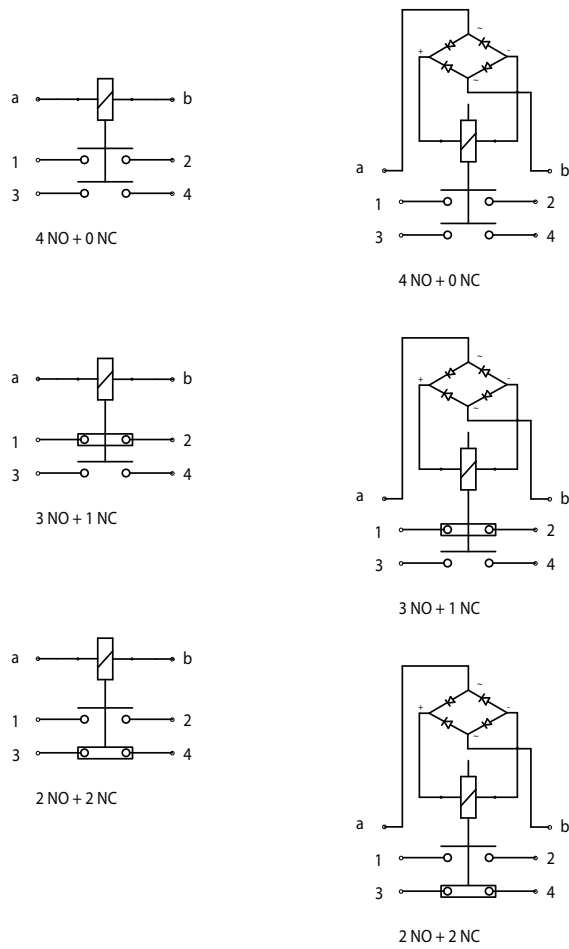


Figure 7. Terminal diagram of CV2DJ and CV2AJ relay

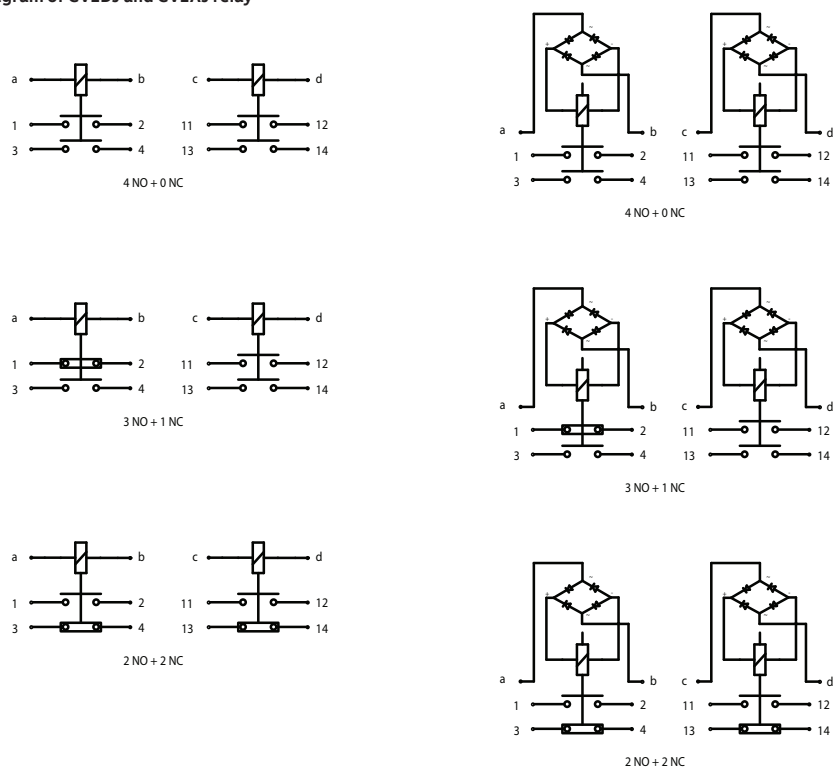


Figure 7. Terminal diagram of CV2D2J and CV2A2J relay

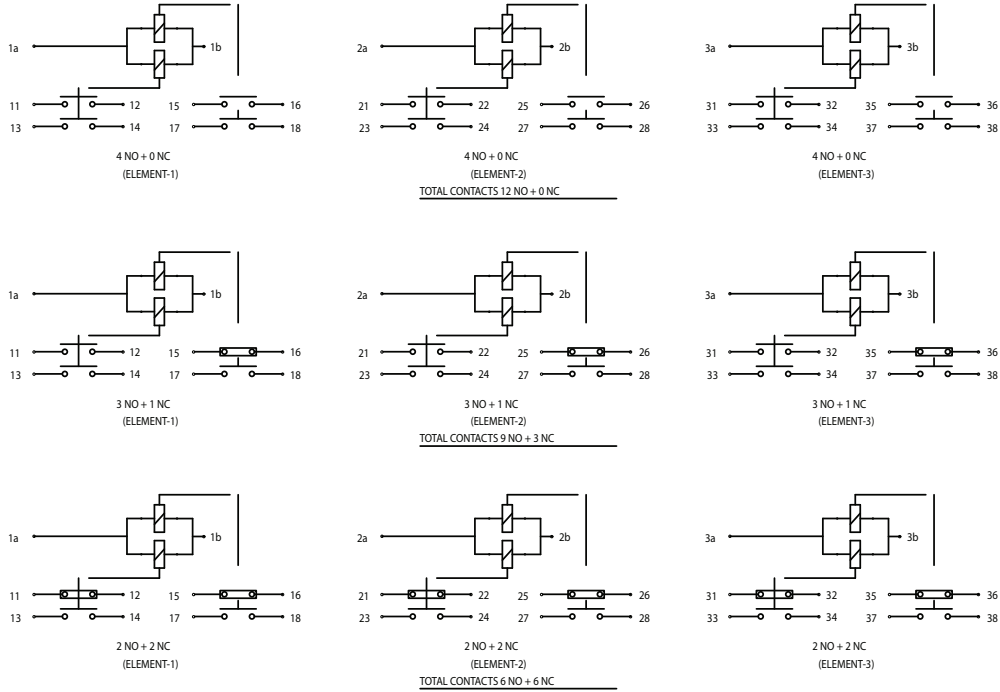
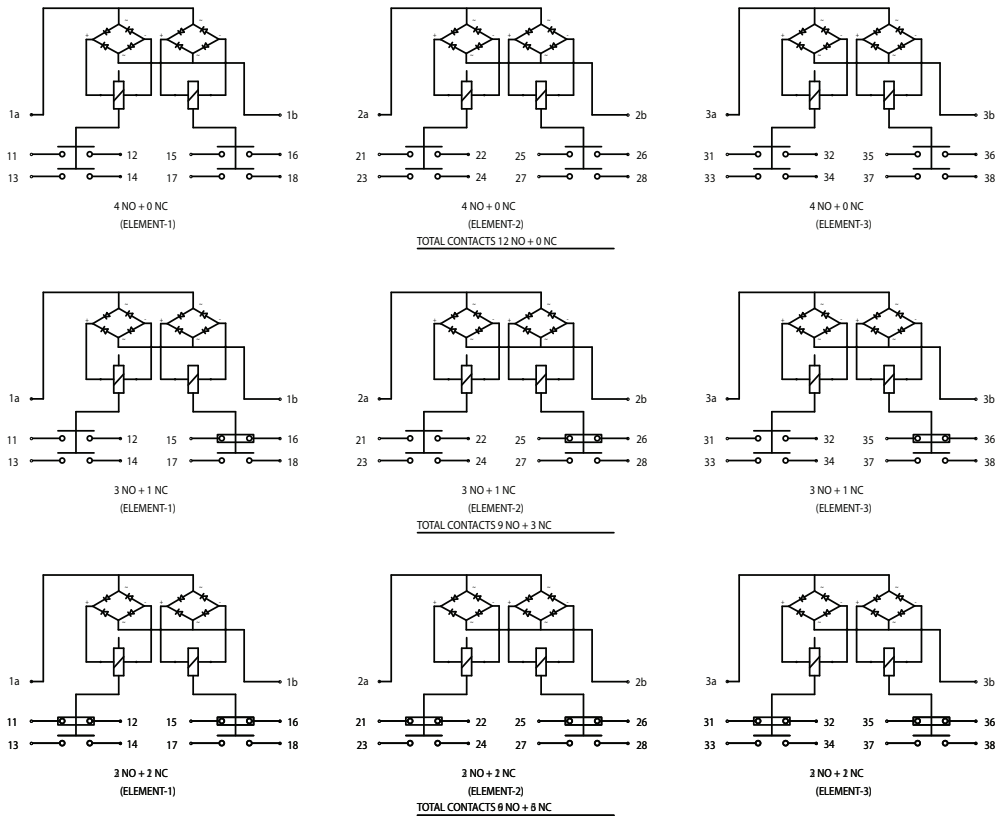


Figure 7. Terminal diagram of CV2D3Z relay



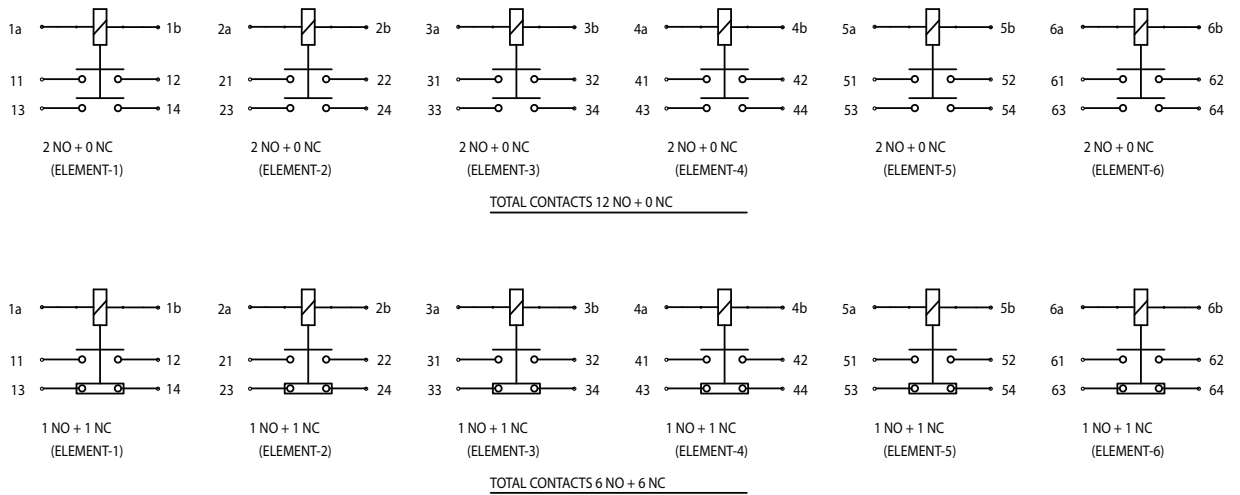


Figure 7. Terminal diagram of CV2D3Z relay

References

The www.abb.com/mediumvoltage portal offers you information about the medium voltage products and solutions.

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