



**SAM LOCK OUT RELAY**  
**Type ELA**  
**(Heavy-duty latching relay , 5contacts )**  
Figure 1

**Features**

- DC voltage electric operated
- Stable latched positions heavy-duty contact
- Make or break as shown in figure 2, 3, 4
- NO or NC
- Position indication

## **Application**

The ELA relay is used in lock-out application (e.g. on transformers) and also in industry and general control where high breaking capacity bi-stable contacts are desired. The relay is also applied where multiple switching of current transformer secondary and trip circuits is required ( e.g. from primary backup breakers, or for zone selection in bus differential protection ). The coil cutoff contacts offer the user two advantages: no continuous power consumption. Thus limiting heat build up and no auxiliary supply load . Because of the coil cut off contacts, this relay is also applied where the upper limit of the supply voltage can exceed the continuous voltage rating.

## **Description**

The ELA is an 5 contact heavy duty, permanent magnet, latching relay, having stable positions. When coil is energized with the correct polarity, a repulsion occurs and the armature switches to the other side where it locks, magnetically. The relay can be specified for DC operation. The coils is wired through an additional relay contacts so that the coil is de energized after the relay switches. This contact is not recommended for any other use.

## **Models available**

ELA has three sub model that are in order to ELA063 , ELA069 and ELA123 which are use for three propose and have five heavy contacts that are accusable either nor NC

## **Function type ELA063**

### **high burden self reset**

High burden self- resetting relay  
This relay use a contactor the main contact stack to energies a separate rear mounted element.

After operation, it automatically self reset the relay by losing of power signal that is force to from protection relay , notice that using of this relay as interface not only help you for high heavy contacts but also it prevents of de bouncing of output relay contacts . See figure 2

## **Type ELA069**

### **High burden tripping relay with hand reset and electrical reset**

This relay in corporate a break contact in series with the operate coil located on the main contact stack it in arranged to break the coil circuit once the relay mechanism has completely operated. This reduces the relay burden to zero . mechanical latching of this type relay may be reset either by hand or electrically by means of the same design of mechanism . See figure 3

## **Type ELA123**

High burden tripping relay with 2 second delayed self reset organization of this relay is like ELA063, but the relay reset himself after 2 second.  
See figure 4

## IEC STANDARD COMPLINACE

### Immunity test

1. Radiated electromagnetic field immunity test  
Port : Enclosure  
IEC255-22-3  
Test level : class2 - 3V/M  
24-500 MHZ  
The relay place under above criteria and no fail in operation appear .
2. voltage interruption and alternating ripple  
IEC255-11  
Test level : 125 ms-41 Vac  
The power supply of relay interrupted as above and no fail in operation appear.
3. electrostatic discharge immunity test  
Enclosure  
IEC255-22-2  
Test level : class 4  
Contact discharge : 8 KV  
Air discharge : 15 KV  
Electrostatic charge discharge on enclosure under above criteria and no fail in operation appear.
4. fast transient ( Burst ) immunity test  
Port : power supply –signal line  
IEC255-22-4  
Test level : class 4-2KV-comuon male  
In this test 5Khz signal under above criteria applied on power supply and inputs and no fail in operation appear .

5. 1 MHz burst disturbance test  
Port : power supply-signal line  
IEC255-22-1  
Test level : class 3  
2.5 KV common mode – 1 KV differential mode

### Insulation test

1. insulation resistance  
port : input / output – Enclosure  
IEC 255-5 IEC255-6  
Test level 500 Vdc  
The impedance between relay contacts, inputs and enclosure measured above 1 GΩ
2. Dielectric test  
port : input / output – Enclosure  
IEC 255-5 IEC255-6  
Test level : series G  
1.5 KVrms  
The relay contacts and enclosure put under above criteria for 1 minute and no fail in operation appear.

### Atmospheric environment

#### Temperature IEC 255-6

Storage and transit -25°C to 70°C  
operating -25°C to +55°C

IEC 68-2-1 : 1 Cold  
IEC 68-2-2 : 1 Dry heat

#### Humidity

IEC 68-2-3 : 1  
56 days at 93% RH and + 40°C

**Enclosure protection**

IEC 529                    IP50

**Mechanical environment**

Vibration

IEC 255-21-1

0.5g between 10Hz and 150 Hz

Mechanical durability

Loaded contact

10,000 operation minimum

Unloaded contact

100,000 operation minimum

1

2

3

4

D

D

C

C

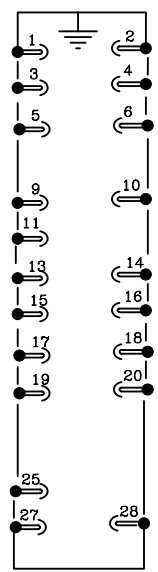
B

B

A

A

### Case earth

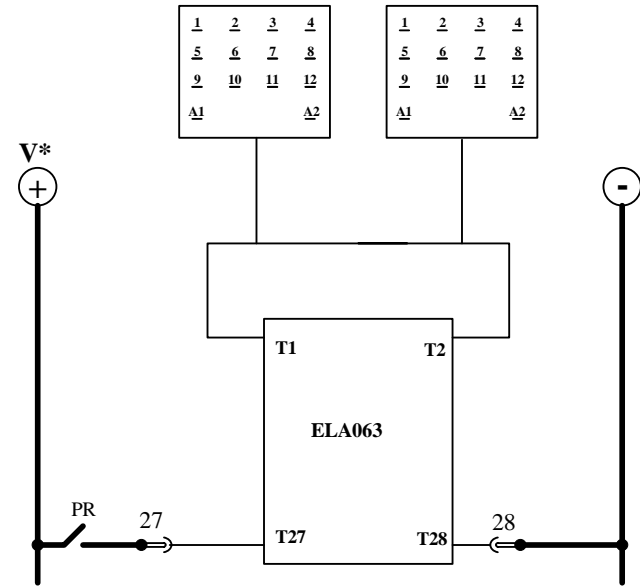


Module terminal blocks viewed from rear

output contacts to module terminals																			
3	1	3	2	4	5	4	6	11	9	11	10	17	15	17	16	18	19	18	20
M	B	M	B	M	B	M	B	M	B	M	B	M	B	M	B	M	B	M	B

Contact description  
 M:Make  
 B:Break

### Viewed from front



Title ELA063 fig2 five contacts		
Size A4	Number	Revision
Date: 27-Jun-2009	Sheet of	
File: E:\Product\LOCK OUT,TRIP\Lockout&Trip	Drawn By:	

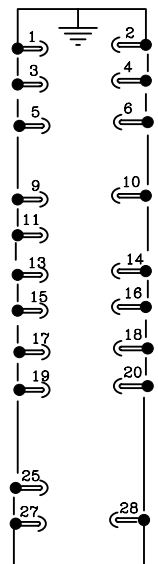
1

2

3

4

Case earth



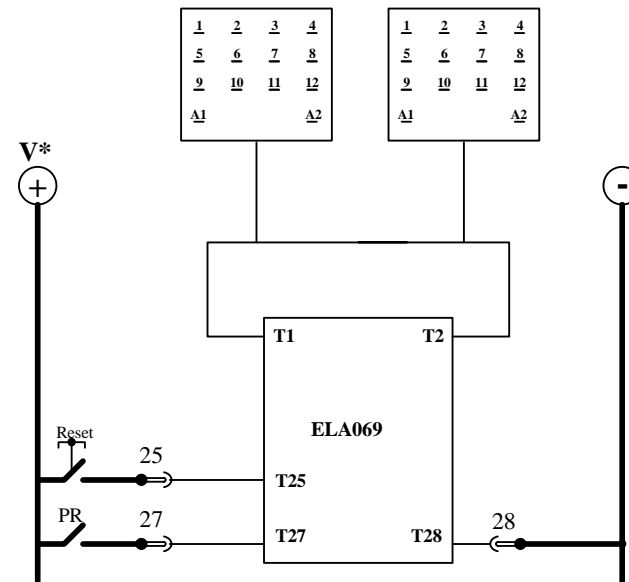
Module terminal blocks viewed from rear

output contacts to module terminals									
3	3	4	4	11	11	17	17	18	18
1	2	5	6	9	10	15	16	19	20
M	B	M	B	M	B	M	B	M	B

Contact description

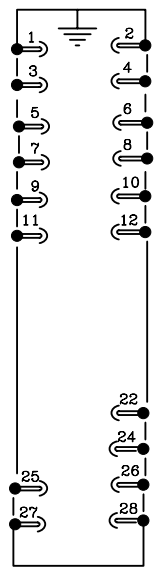
M:Make  
B:Break

Viewed from front



Title ELA069 fig3 five contacts		
Size A4	Number	Revision
Date: 27-Jun-2009	Sheet of	
File: E:\Product\LOCK OUT,TRIP\Lockout&Trip	Drawn By:	

Case earth

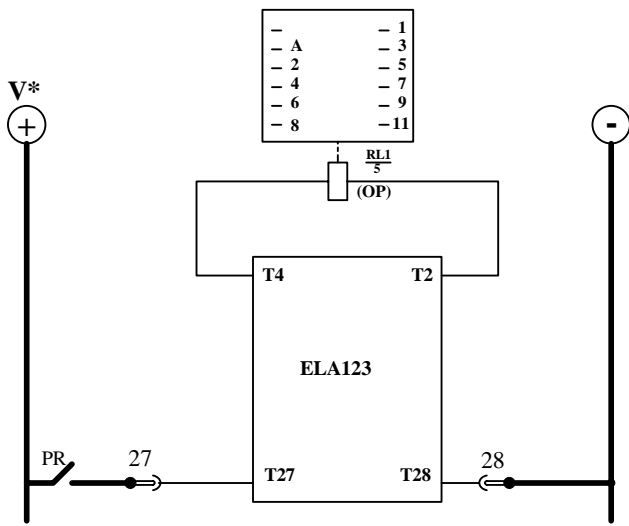


Module terminal blocks viewed from rear

Combination of output contacts	output contacts to module terminals				
	1 3	5 7	9 11	2 4	6 8
5M	M	M	M	M	M
4M 1B	B	M	M	M	M
3M 2B	B	M	M	B	M
2M 3B	B	B	M	B	M

Contact description  
M:Make  
B:Break

Viewed from front



-	- 1
- A	- 3
- 2	- 5
- 4	- 7
- 6	- 9
- 8	- 11

Title ELA123 fig4 five contacts		
Size A4	Number	Revision
Date: 27-Jun-2009	Sheet of	
File: E:\Product\LOCK OUT,TRIP\Lockout&Trip	Drawn By:	

## CASE DIMENSIONS

The relay is available in a 4U metal case for panel or flush mounting.

Weight :  
front panel 177 mm  
front panel 103 mm  
front panel + case 252 mm

External size : Height case 152 mm  
Width case 97 mm  
Depth case 226 mm

