

Master Trip Range

PLR - High Speed Trip Lockout Relay



1. Introduction and application

The Lockout relay PLR series are voltage operated single element electro-mechanical, hinged armature type relay mainly used in protection, control and alarm circuits.

PLR relays are available in two basic model PLR-H and PLR-S. Lockout relays PLR-H is provided with hand reset contacts. PLR-S is self reset type.

The PLR series of relays are used in various application such as :

Switching functions in protection and control circuits.

High speed tripping functions requiring a number of simultaneous switching operation.

Control with interlocks and inter-tripping

2. Features and characteristics

The lockout relay PLR series are equipped with following features :

Electro-mechanical design.

Suitable for tripping, signalling in protection and control systems.

Consistent and Repeat accuracy.

High resistance to shock and vibration.

Flexible user friendly Standardized contacts arrangement.

Hand reset contacts.

Hand reset flag indication.

Compact panel mounting case.

High speed with positive operation.

3. Design

The design of lockout relays is electro-mechanical, hinged armature type.

It has been ensured to have consistent electrical & magnetic qualities while designing the Armature, Yoke and the core materials.

The coil is wound with wires with high thermal rating to withstand the problems of over heating due to continuous rating. It is also ensured that the coil though rated for the very short time will tolerate the higher burden to ensure the faster operation. The series break contact will ensure the supply is cut off at a very short time of 10 ms breaking the inductive current.

Similarly, the contacts have been designed with silver/cadmium oxide alloy to have superior contact rating with minimum wear and tear. It is also ensured in the design and construction the contact pressure is maximum to ensure superior contact rating. The contact spring is designed with superior phosphor-bronze spring quality material to have the positive flexible movements. Each element, be it with self or hand reset contacts, customer flexibility is given paramount importance. Always each relay element is provided with 3 Make and 2 Break contacts.

The coil of the high speed tripping relay is always a dedicated one for one specific voltage. This is due to the reason that the burden is higher and the coil is the short time rated one. Also no external resistor is allowed in the tripping relay circuit. In case of requirement, one break contact can be connected in series with the relay elements as a cut-off contact. This reduces the burden and saves the power from the battery. This facility is available with hand reset contacts only. The flag is always hand reset. The relay with self reset contacts may be provided without flag also

3.1 Connections

The connection diagram is given in fig 3.1 a & 3.2 b on page 2 for hand & self reset type respectively.

3.2 Output relays

The PLR series of relays has five numbers output contacts. The contacts of the relays are allocated in the following termination arrangement :

Contact	Terminal
Output contact Pair 1	: 1, 2
Output contact Pair 2	: 3, 4
Output contact Pair 3	: 5, 6
Output contact Pair 4	: 7, 8
Output contact Pair 5	: 9, 10
Coil Contacts	: 11, 12

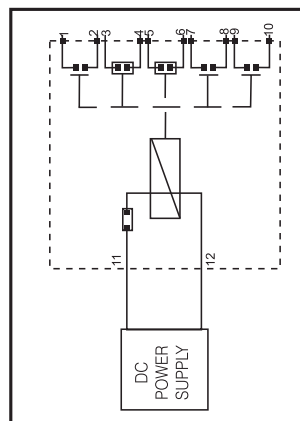


Fig. 3.1a : Connection diagram PLR - H

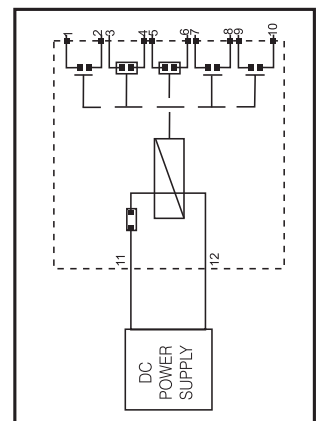


Fig. 3.1b : Connection diagram PLR - S



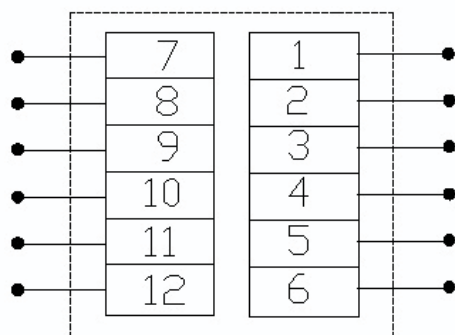


Fig. 3.2 : Terminal arrangement - viewed from rear.

4. Technical data

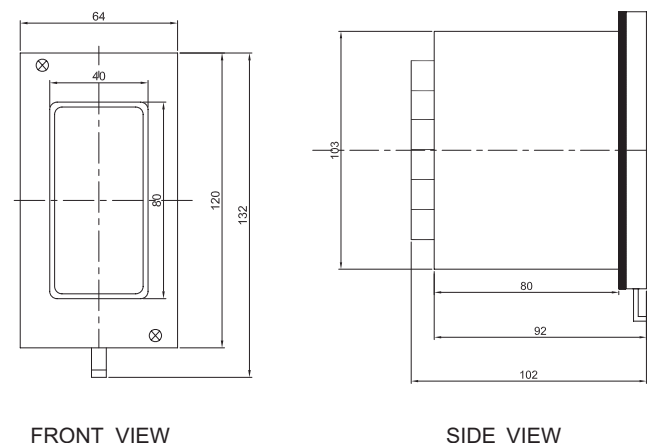
4.1 General data

Type	: PLR
Design	: Flush mounting metal case
Duty	: Continuous operation
Maintenance	: None

4.2 Measuring input circuits

Rated voltage	: 24V, 48V, 110V, 220V DC
Operating range	: DC - 70% to 120% of rated voltage.
Burden	: 40 Watts D.C. at rated voltage

5.0 Dimensional diagram



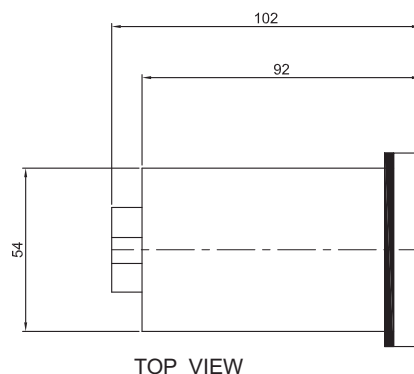
4.3 Common data

Operating time	: 10 ms at rated Voltage
Flag	: Hand reset mechanical flag.
Insulation	: 2KV RMS, 50 Hz for 1 minute / 2.5 KV for 1 second between all terminal and case as per I.S. 3231 and 1 KV RMS, 50 Hz for 1 min. across open contacts.
Contact configuration	: 3 make + 2 break potential free contacts per element self reset or hand reset.

Operating Temperature : -10 deg to +55 deg Celsius

Contact Rating

	A.C.	D.C.
Make and Carry continuously	1250 VA a.c. within limits of 660V & 5 amps.	1250 W d.c. within limits of 660V & 5 amps.
Make and Carry for 3 sec	7500 VA a.c. within limits of 660V & 30 amps.	7500 W d.c. within limits of 660V & 30 amps.
Break	1250 VA a.c. within limits of 250V & 5 amps.	100 W (resistive) or 50W inductive (L/ratio=0.04) within limits of 250V & 5 amps.



TOP VIEW

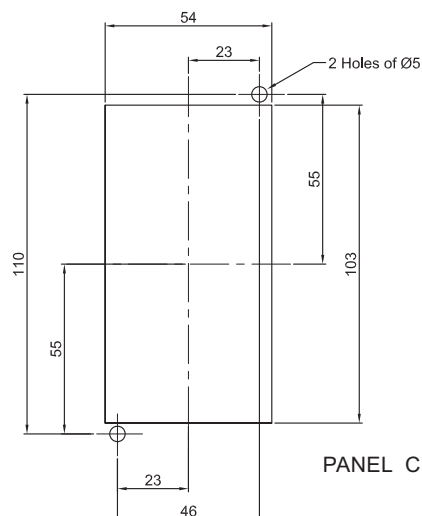
6.0 Order Form

		PLR		
Self Reset contact		S		
Hand Reset contact		H		
Rating DC	24 V		1	
	48 V		2	
	110 V		3	
	220V		4	



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PANEL CUTOUT