Elegant e^3 Efficient
Easy to Use

Test Block

ERMLG

Applications

ERMLG Test block provides facilities for monitoring & secondary injection testing of any power system protection scheme, when used with the multi fingered test plug type ERMLB01.

Description

ERMLG Test block removes the need to disturb protective system wiring for testing.

The ERMLG Test Block is housed within an Epsilon enclosure.

The ERMLG Test Block has 14 pairs of spring loaded contacts which are linked to a terminal block positioned at the rear of the enclosure.

Each pair of contacts are normally closed completing the circuit through the test block when the associated protection equipment is in use.

For testing purposes the test block can be assessed by removing the front cover. The ERMLG 01 has a metallic probe attached to the front cover assembly which when withdrawn open circuits the 2 contacts at position 13 and 14.

The main dc auxiliary supply to the protection scheme or relay can be wired to this circuit to prevent inadvertent tripping of the protection circuit after removal of the cover and during the test procedure.

The short test finger in position 13-14 on the ERMLB 01 will open contacts 13-14 in the test block after the other fingers have made contact in all other positions.

When the cover is removed a blue fascia is revealed which is attached to the test block. This gives a visual indication and warning that the protection scheme or relay is not in service.

The insertion of the ERMLB 01 test plug into the ERMLG assembly (as shown in figs. 1 and 2) open circuits the contact pairs. The ERMLB 01 has 28 test points each position being identified by a number which corresponds with the terminations on the ERMLG.

It is recommended that the protection scheme or relay is wired to the even numbers of the test modules. To ensure the scheme wiring is routed logically it is recommended that the ERMLG is always positioned on the right-hand side of the relay, when viewed from the front. The connections to other equipment such as CTs, VTs, and dc supplies should be made to the odd numbered terminals indicated on the ERMLG. This will ensure that on connection of the ERMLB, the sockets on the even numbered side of the test plug are the isolated relay circuits and the sockets on the odd numbered side are connected to the potentially live supplies and shown in Figure 3.

Figure 1: Test Block ERMLG

Note:

It is important that the sockets in the plug (ERMLB 01)which correspond to the current transformers secondary windings are linked prior to the plug being inserted into the test block.

This will ensure that the current transformers secondary windings are short circuited prior to disconnection from the protection scheme or relay (as shown in Figure 3).

Terminals 13 & 14 on ERMLG 01 must not be used for CT connections since this will present a safety hazard. The reason for this that the associated ERMLB 01 test plug contact finger is shorter than the others.

If the dc auxiliary supply is to be used during testing it can be linked using the sockets in the test plug.

Operation of the contacts can be monitored by connecting the test equipment to the protection scheme or relay with the even numbered sockets of the test plug.

If a number of ERMLG test blocks are connected to relay it is recommended that the dc supply be routed through each ofthem to safeguard against inadvertent operation. identified by a number which corresponds with the terminations on the ERMLG.

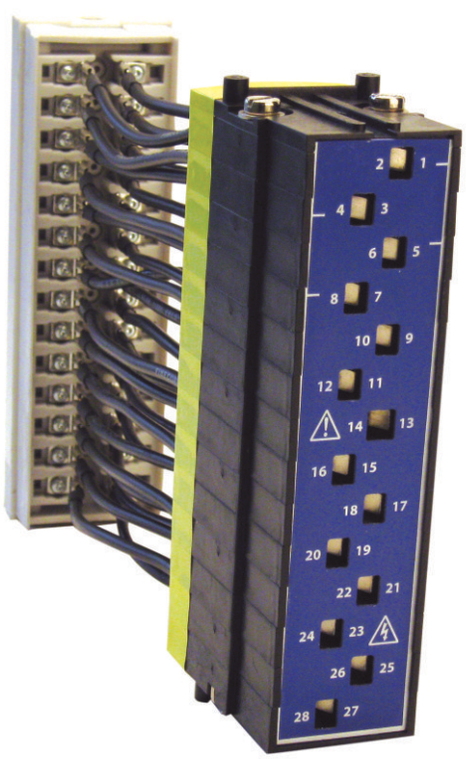

Figure 2: Test Block ERMLG

Mechanical Specification

The ERMLG is a size E2 unit in the Epsilon range of enclosures.The overall dimensions and panel fixing details are shown in Figure 4.

The rear terminal block has 28 terminals each with an M4 screw outlet for the attachment of external wiring, fitted with 'L' shaped pre-insulated ring tongue terminations.

ERMLB 01 Multi-fingered test plugs

The ERMLB 01 is inserted into the ERMLG test block and is securely retained by means of two knurled screws. The ERMLB01 test plug incorporate 28 test sockets, each socket accepting a 4mm diameter plug.

The following are supplied with each ERMLB01 test plug:

1.4 short plug links. Each comprised of 50mm of interconnecting cable with a 4mm plug each end.

2.4 long plug links. Each comprised of 150mm of interconnecting cable with a 4mm plug each end.

3.6 spare 4mm plugs. These accept up to 2.5sq. mm flexible insulated cable for test lead purposes.

Precautions

BEFORE inserting a Test Plug into a Test Socket carrying current transformers secondary circuits. ENSURE that the Test Plugs corresponding to the current transformers circuits are short-circuited.

This is to ensure the current transformer secondary circuit are not inadvertently open-circuited during insertion of the last plug.

BEFORE inserting a Test Plug to measure current ENSURE that the ammeter is on the correct range and that it is connected to test leads.

Connections

The connections will depend upon the scheme and details must be obtained from the appropriate diagrams. If it is necessary to use the d.c. auxiliary supply during testing, then a test link may be fitted across the sockets in the Test Plug.

Technical Data

High Voltage withstand

Insulation IEC 255-5

ERMLG 5kV rms for 1 minute between all case terminals connected together and the case earth terminals.

5kV rms for 1 minute between any contact pair and either adjacent alternate contact pair, provided the intermediate contact pair is not used.

2kV rms for 1 minute between any contact pair and either adjacent contact pair.

1kV rms for 1 minute between terminals 13 and 14 when the cover is removed (e.g. opening the auxiliary supply or trip circuit).

ERMLB 01 As ERMLG 01 plus 2kV rms for 1 minute between incoming and outgoing contacts when inserted.

Current withstand

ERMLG 01 All contact circuit rated at 20A continuously or 400A for 1s, ac or dc

ERMLB 01 10A continuously or 165A for 1s

Atmospheric environment

Temperature
IEC 255-6: Storage and transit - 25°C to +70°C
Operating - 25°C to +55°C

IEC 68-2-1: Cold

IEC68-2-2: Dry Heat

Humidity

IEC 68-2-3: 93% RH and + 40°C

Enclosure Protection
IEC 529: IP50 (dust protected)

Mechanical environment

Vibration
IEC 255-21-1: Class2

Qualification

ISO9001-2008

TYPICAL APPLICATION OF THE ERMLG01 TEST SOCKET AND ERMLB01 TEST PLUG

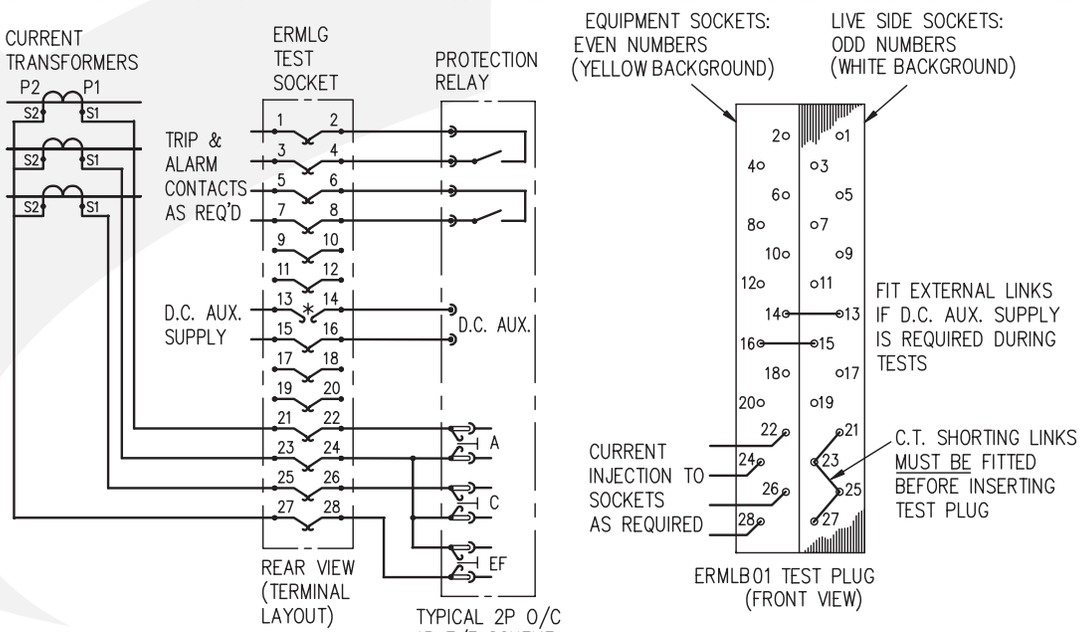

Figure 3

OUTLINE AND DRILLING FOR ERMLG TEST SOCKET IN EPSILON E2 CASE

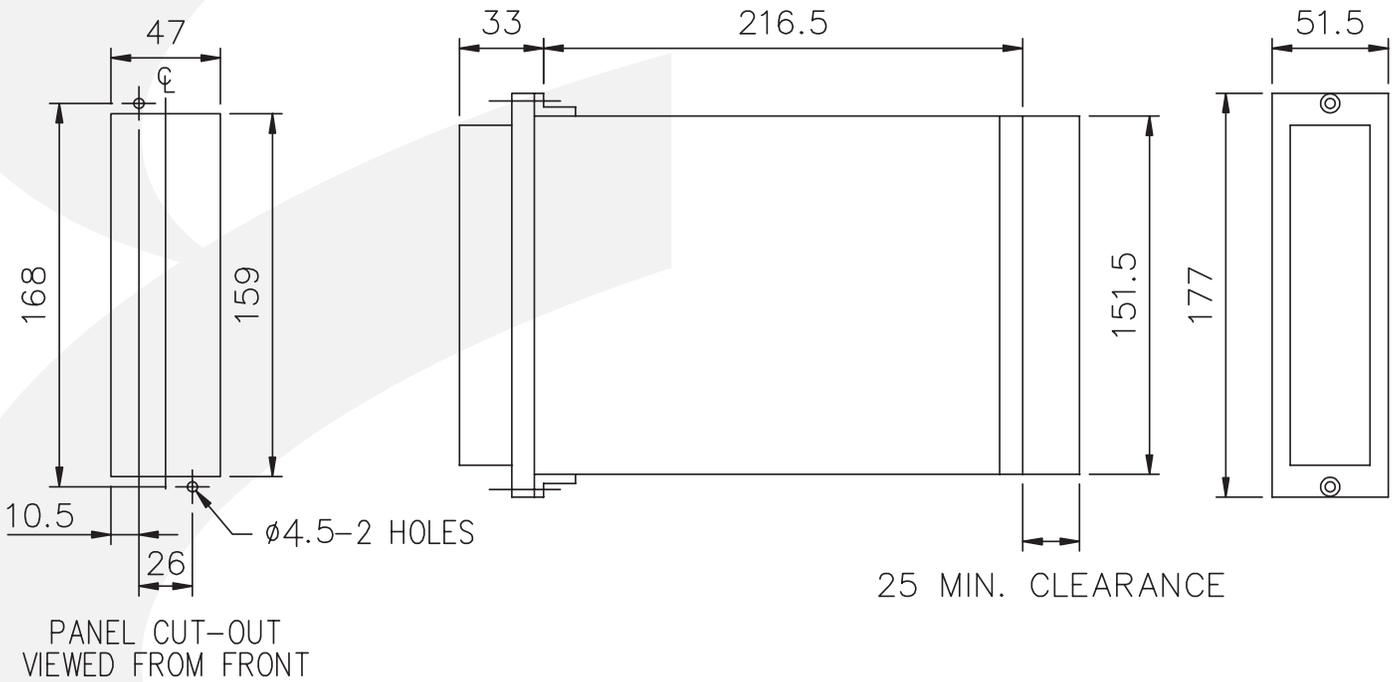

Figure 4

The policy of EASUN REYROLLE is one of continuous improvement and development. The company therefore reserves the right to supply equipment which may differ slightly from that described and illustrated in the publication.

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