



**AUSTRALIAN RAIL TRACK CORPORATION LTD**

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**Discipline**

**Engineering Standard - NSW**

**Category**

**Signalling**

**Title**

**Emergency Changeover Contactor Panel**

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**Document Control**

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## **About This Standard**

This Specification describes the general requirements for Emergency Change-Over Contactor Panels to be manufactured and supplied to Australian Rail Track Corporation or contractors to Australian Rail Track Corporation for signalling power supplies.

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## Document History

**Primary Source** – RIC Standard SC 09 10 02 00 SP Version 2.0

### List of Amendments –

<b>ISSUE</b>	<b>DATE</b>	<b>CLAUSE</b>	<b>DESCRIPTION</b>
1.1	01/09/2004		Reformatting to ARTC Standard
1.2	14/03/2005	Disclaimer	Minor editorial change
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## 1. Introduction

This Specification describes the general requirements for Emergency Change-Over Contactor Panels to be manufactured and supplied to Australian Rail Track Corporation or contractors to Australian Rail Track Corporation for signalling power supplies.

Emergency Change-Over contactor panel which will be termed as "ECO panel" is used to switch 120V AC 50Hz supply from NORMAL SUPPLY to an EMERGENCY SUPPLY, in case of an interruption (or under a faulty condition) of the normal supply.

When the NORMAL SUPPLY is available the contactor will switch back to NORMAL SUPPLY.

In some instances (when normal supply is fed from a single phase off the 3 phase council supplies) a Voltage Sensing Relay shall be incorporated in the ECO panel to avoid the contactor switching back to "Normal Supply" when a fault exists on the normal supply feeder.

## 2. Applicable Documents

### 2.1. ARTC Specifications

This Specification refers to the following ARTC Specifications and Standards:

Specification. SPS 04 - General requirements Labelling of Equipment

Specification. SC 05 15 00 00 SP - Non-Vital Relays

### 2.2. Australian Standards

AS 3000- Electrical Installations-Building, Structures & Premises

## 3. Construction

Emergency Change-Over Contactor Panel shall be fabricated in accordance with Signals Standards drawing M08-489/1 and the specific requirements listed below.

Signals Standards drawing M08-489/2 shall refer to Emergency Change-Over contactor Panel (with Voltage Sensing).

## 4. Specific Requirements

### 4.1. Contactors

Selection of the contactor shall be dependant on the current ratings as specified in the Table.

Rated Current	Contactor Type	Preferred contactor for ECO Panel (“Telemechanique Type”)
50A	Block	LC1 D65008 F5
100 A	Bar	CV 1 GB
150A	Bar	CV1 GB
200A	Bar	CV1 GB
		CV1 GB

The contactors are to be fitted with (2) normally open and (2) normally closed main poles. An auxiliary contact is to be incorporated for the operation of indicators.

The contactor shall be a single block or bar type and the contactor shall be break before make type.

### 4.2. Relays & Bases

#### 4.2.1 Indicating Relays

All relays used in indicating circuits shall be type "Fuji" HH23PW-T or "Omron" MK3P-I and shall be in accordance with Signals Standards Specification SC 051500 00 SP.

All bases shall be "OMRON"- PF 083A or an approved equivalent type.

#### 4.2.2 Voltage Sensing Relay (VSR)

When specified; a voltage sensing relay shall be provided, to force the contactor to EMERGENCY SUPPLY when there is a fault on the NORMAL feeder, and to prevent the contactor from switching back until normal supply voltage is restored.

Voltage Sensing Relay shall be "Email"- 2V330 or equivalent The base for VSR shall be "Omron"- PF-083A or equivalent. The Pick-up value shall be adjusted to 115V

The Release shall be adjusted to 85% of pick-up voltage.

### 4.3. Enclosure for the Panel

The Panel shall be enclosed in a sheet metal case of Environmental Protection Class IP 55 with hinged front panel.

#### 4.4. Wiring

Wiring for indicating circuits shall be done with minimum of 0.88 Sq mm (7/0.4mm) wires. All wiring shall use multi-stranded conductors and be formed and secured in a neat wire loom.

Insulation of Wires shall be rated at 90 C. Adhesive cable ties are not acceptable.

Suitable cable glands for cables up to 37/2.03 (120 Sq mm, overall dia. 21mm max.) shall be provided. All equipment shall be of front connected type.

Wire size for power conductors shall be in accordance with AS 3000.

#### 4.5. Terminals

All conductors shall be terminated with crimp lugs either pre-insulated double-grip type for small conductors or in the case of larger conductors, non-insulated lugs with a heat shrink sleeve applied after crimping. The heat shrink sleeve shall cover the body of the crimp lug and extend at least 15mm over the conductor insulation.

All main power feed through terminals shall be "Klippon"-SAKG type or equivalent.

#### 4.6. Spares To Be Provided

The spares to be provided are:

- A spare coil with each ECO contactor panel.
- indicating lamps - 5 No.

#### 4.7. Labelling

Labelling for all relays, terminals and indicating lamps shall be on Traffalyte and permanently affixed (refer to Signals Standard Specification 1031-Labelling of Signalling Equipment)

The following Labels shall be provided on the front panel of the unit:

- Emergency Change-Over Contactor Panel- xxx A
- Manufacturer's name or Identity
- Date of Manufacture.

Circuit diagram of the unit shall be provided with each unit.