

Saudi Electricity Company



الشركة السعودية للكهرباء

SEC DISTRIBUTION MATERIALS SPECIFICATION

37-SDMS-02

DATE: 23-01-2006G

**37-SDMS-02**

**SPECIFICATIONS**

**FOR**

**MOLDED CASE CIRCUIT BREAKER  
FOR LOW VOLTAGE DISTRIBUTION PANELS  
400 AMPS**

**This specification is property of SEC and  
subject to change or modification without any notice**



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**1.0 SCOPE:**

This material standard specification is an additional technical requirements for a 400Amps circuit breakers specified in a SEC Specification No: 37-SDMS-01 (latest revision) for "Low Voltage Molded Case Circuit Breakers", to achieve the minimum technical requirements for design, engineering, manufacture, inspection, testing and performance of outgoing Circuit Breaker, intended to be used for protection of the outgoing feeders of the low voltage distribution panel of the substations used in the distribution system of Saudi Electricity Company (SEC) in Saudi Arabia

**2.0 CROSS REFERENCES:**

This material standard specification shall be read in conjunction with SEC Specification No: 01-SDMS-01 (latest revision) for "General Requirements for all Equipments/ Materials", 37-SDMS-01 (latest revision) for "Low Voltage Molded Case Circuit Breakers" and 31-SDMS-01 (latest revision) for "low voltage distribution panel", which shall be considered as an integral part of this SDMS.

This SDMS shall also be read in conjunction with SEC Purchase Order requirements.

**3.0 APPLICABLE CODES & STANDARDS:**

As per SEC Specification No: 37-SDMS-01 (latest revision) for "Low Voltage Molded Case Circuit Breakers".

**4.0 DESIGN & CONSTRUCTION REQUIREMENTS:**

4.1 Breakers described in this specification are suitable for operation in 400 or 230V, 60 Hz, 4 wires distribution system with solidly earthed neutral.

4.1 Breakers shall be in accordance with SEC Specification No: 37-SDMS-01 (latest revision) for "Low Voltage Molded Case Circuit Breakers" with the following additional requirements:

4.1.1 Break trip free-mechanism as per 37-SDMS-01 (latest revision).

4.1.2 Breaker can be equipped by an electronic solid state trip-control unit for overload and short circuit protection.

4.1.3 Breakers should be with current limiting functions.



- 4.1.4 The breaker shall be able to sustain short-time overloads without tripping, so that magnetic in-rush current experienced by the starting of inductive loads such as air-conditioner compressor will not affect operation.
- 4.1.5 The breaker shall have instantaneous short circuit tripping characteristics such that the fault will trip the breaker in a fraction of a second.
- 4.1.6 Outgoing terminals shall be suitable for front direct connection of 300mm<sup>2</sup> Al. cables as per SEC spec. 11-SDMS-01 by means of bimetallic lugs with M10 bolt and palm width of 30mm.as per fig # 5 of spec 12-SDMS-02
- 4.1.7 Incoming terminals shall be designed to accept a size of busbar suitable for the breaker rated current.
- 4.1.8 All outgoing terminals shall be equipped with terminal separators, covers, and without terminal spreaders or extended terminals.
- 4.1.9 All breakers shall be without lock or locking device.
- 4.1.10 These MCCB's shall be easily interchangeable with at least 3 SEC approved manufacturers, if possible.

#### **5.0 CONTINUOUS CURRENT RATINGS:**

- 5.1 The circuit breakers shall be in one fixed capacity of 400 amps, adjustable type is not acceptable.
- 5.2 The breakers shall be designed to work at full rating in an ambient temperature of 55°C.

#### **6.0 INTERRUPTING RATING:**

The Circuit Breaker must have minimum ultimate interrupting rating of 50 KA symmetrical at 220 Volts.

#### **7.0 ADDITIONAL REQUIREMENTS:**

Name plate, Testing, Inspection, Packing & Shipping, Guarantee and Submittals shall be according to SEC Specification No: 37-SDMS-01 (latest revision) for "Low Voltage Molded Case Circuit Breakers".

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