

## OVERCURRENT RELAY, MODEL AI 51 (P) F—Long Operation Time Induction Disc Type, Equipped with Instantaneous Element

This relay is used for protection of an induction motor connected to a load which requires a long starting period. This has been developed as one of the Fuji Electric's induction disc type relay series.

Upon starting of an induction motor, a current five to ten times the total load current flows, possibly resulting in faulty operation. This relay has a long period limiting operation, particularly serving to avoid such erroneous operation.

### Construction and Operation

The relay functions for time-limit breaking-off against ordinary overload, or high speed breaking-off against short-circuits, which may seriously affect the feeder or the machine.

With the combined time limiting and instantaneous elements assembled into one frame, and also with the relay compartment of a simple draw out construction, the entire element may be drawn out or testing may be performed by means of a test plug with the relay element remaining connected.

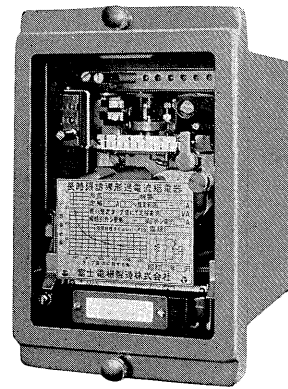
#### 1) Time limiting element

The time limiting element is an induction disc type overcurrent relay, and is provided with particularly inverse time characteristics of a long time limit in order to avoid an erroneous operation due to rush current. Construction with two strong brake magnets and a disc whose rotating angle is 600° permits a long time limit operation of a period of 40 seconds at an input 500% of the set value.

The operating time may be set by means of the time lever, while the operating current value can be set by means of taps in seven stages.

#### 2) Instantaneous element

The instantaneous element of the overcurrent relay is of the plunger type, and functions at high speed when the current exceeds the set value. The operating current value may be set in three stages by means of taps.



### Features

#### 1) Stable characteristics

Full provisions have been made for protection of the equipment from the effects of ambient conditions of temperature and frequency.

#### 2) Torque compensation

A patented torque compensation device is used, thus permitting excellent floating characteristics, even when the disc rotating angle is 600°.

#### 3) Small va consumption

The va consumption for operation at each set tap is less than 5 va, approximately half that of an ordinary relay.

#### 4) Small and light

The floor space is merely 2/3 to 1/2 that of ordinary relay of this type, with the weight as light as 2.5 to 3 kg.

### Specifications

#### 1) Rated frequency: 50 or 60 cps

#### 2) Setting range:

Time limiting element

2.5 to 5 amp

Rated current 5 amp

or 1.5 to 3 amp

Rated current 3 amp

Instantaneous element

One of 15 to 30 amp, 20 to 45 amp,  
and 45 to 80 amp

#### 3) Va consumption: Less than 5 va at minimum set value

#### 4) Contact capacity: Closed 10 amp