



**HOKKIM**  
Giving You Control

# Control & Protection Relays

**Model : TFQ-1**

**Description : Gen-set Speed Sensing Relay**

**Utilization:**

The TFQ-1 provides 2 user adjustable trip levels with LED relay state indication. Trip functions provided are:

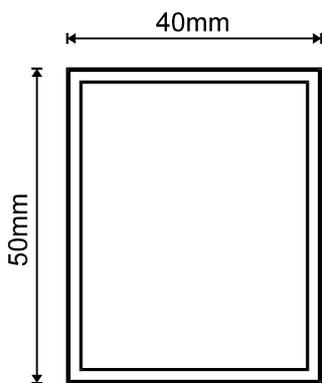
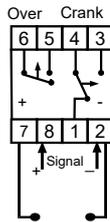
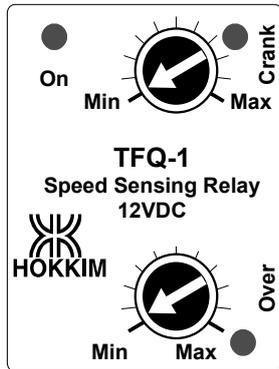
- 1 – 3 – 4 : Dis-engages crank starter.
- 5 – 6 : Alarms or trips on over speed.

The W-Phase of the charger alternator of the gen-set, situated at the engine, produces a high frequency pulse train directly proportional the speed of rotation. The frequency of these pulses is converted to an analogue voltage to provide the signal to the trip circuitry. When ordering, the range of speed settings in cycles per second (Hz) for crank cut-off and over-speed must be specified.

As the engine starts and the frequency rises, contacts 1-3 close and 1-4 open to cut-off the crank starter. On over-speed, contacts 5-6 close to sound alarm or trip engine.

**Technical Data**

- Supply Voltage : 24VDC 12VDC
- Approx. Crank Range: 15Hz to 400Hz
- Approx. Over Range : 100Hz to 800Hz
- Consumption : 1VA
- Indication : Power - Green LED  
Crank Cut – Amber LED  
Over Speed – Red LED
- Output Contacts : 5A 240V 50Hz AC1
  - Normal 5-6 Open
  - 1-3 Open
  - 1-4 Close
  - Over-Speed 5-6 Close
  - Crank Cut
    - 1-3 Close
    - 1-4 Open

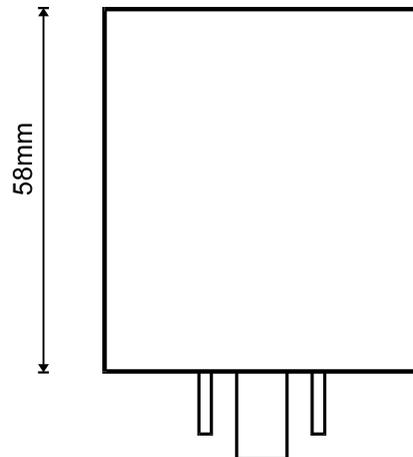


Dimensions

Top View



Front View



Side View