### Specifications

#### Output voltage/torque characteristics

**For 50 Hz area**

- Output voltage
- Torque

**For 60 Hz area**

- Output voltage
- Torque

### Dimensions

- **TSC-TM170**
- **TSC-TM150**

### Static Frequency Converter TMP-TS150/TMP-TS170

- **SFC**
- **TMP-TS150/170 Series**

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Information contained in this catalog is subject to change without prior notice for improvement.

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A Static Frequency Converter (SFC) converts with an inverter the DC current of converter output to the frequency synchronized with the rotation of the generator, which is in turn output to rotate a turbine generator in the same way as a synchronous motor and accelerate until the gas turbine can independently rotate.

The TMP-TS Series SFCs are designed and built to best suit the standard series of gas turbines offered by Mitsubishi Heavy Industries, Ltd. and turbine generators by Mitsubishi Electric Corporation and serve as their starters.

**System/cubicle configuration**

SFC roughly consists of four cubicles.

- **Converter**
  - Controls the DC current by phase control of the thyristor.
- **DC Reactor**
  - Smooths the DC current.
- **Inverter**
  - Converts the DC to AC in accordance with the rotational speed of the generator by phase control of the thyristor.
- **Control panel**
  - Controls and monitors the devices.

**Operation patterns**

SFC starts/stops by external requests.

1. **(1) GT/SFC SELECTED REQUEST**
   - Activates the cooling fan to stand by for a start.
2. **(2) SFC START REQUEST**
   - Starts in the constant current control pulse mode. Switches to the load commutation mode when the rotational speed and the generator voltage have increased.
3. **(3) SFC HIGH SPEED KEEP REQUEST**
   - Switches to the speed control and maintains a constant rotational speed of the generator (at firing speed).
4. **(4) SFC HIGH SPEED SPIN REQUEST OFF**
   - Gradually reduces the rotational speed of the generator.
5. **(5) SFC LOW SPEED KEEP REQUEST**
   - Maintains a constant rotational speed of the generator (at firing speed).
6. **(6) SFC ACCELERATION REQUEST**
   - Reactivates the gas turbine when firing has been completed. Increases the output current to the current setting.
7. **(7) SFC OFF REQUEST**
   - Gradually reduces the output current to zero. SFC stops when the output current has been reduced to zero.

**Features**

**Space-saving**

Space reduction to 42% of the conventional model achieved (with 5 MW model).

- **Improved inductance of DC Reactor**
- **Use of new low-loss element**
- **Optimized cooling structure**

**Man-machine interface**

Large LCD touch panel (10-inch) provided for excellent operability and maintainability.

**Position Sensorless**

The capability of detection and operation of the inverter output voltage/current has achieved Position Sensorless control equivalent to that with a Position Sensor. Eliminated need for a Position Sensor saves the trouble of mounting and maintenance of a Position Sensor, which was traditionally required for the device installation.

**Wide system variation**

- The TMP-TS170 Series allows redundancy of fans. Operation can continue even if one fan per cubicle fails.
- The TMP-TS170 Series allows routing of cables on the top or bottom side.

**Circuit configuration**