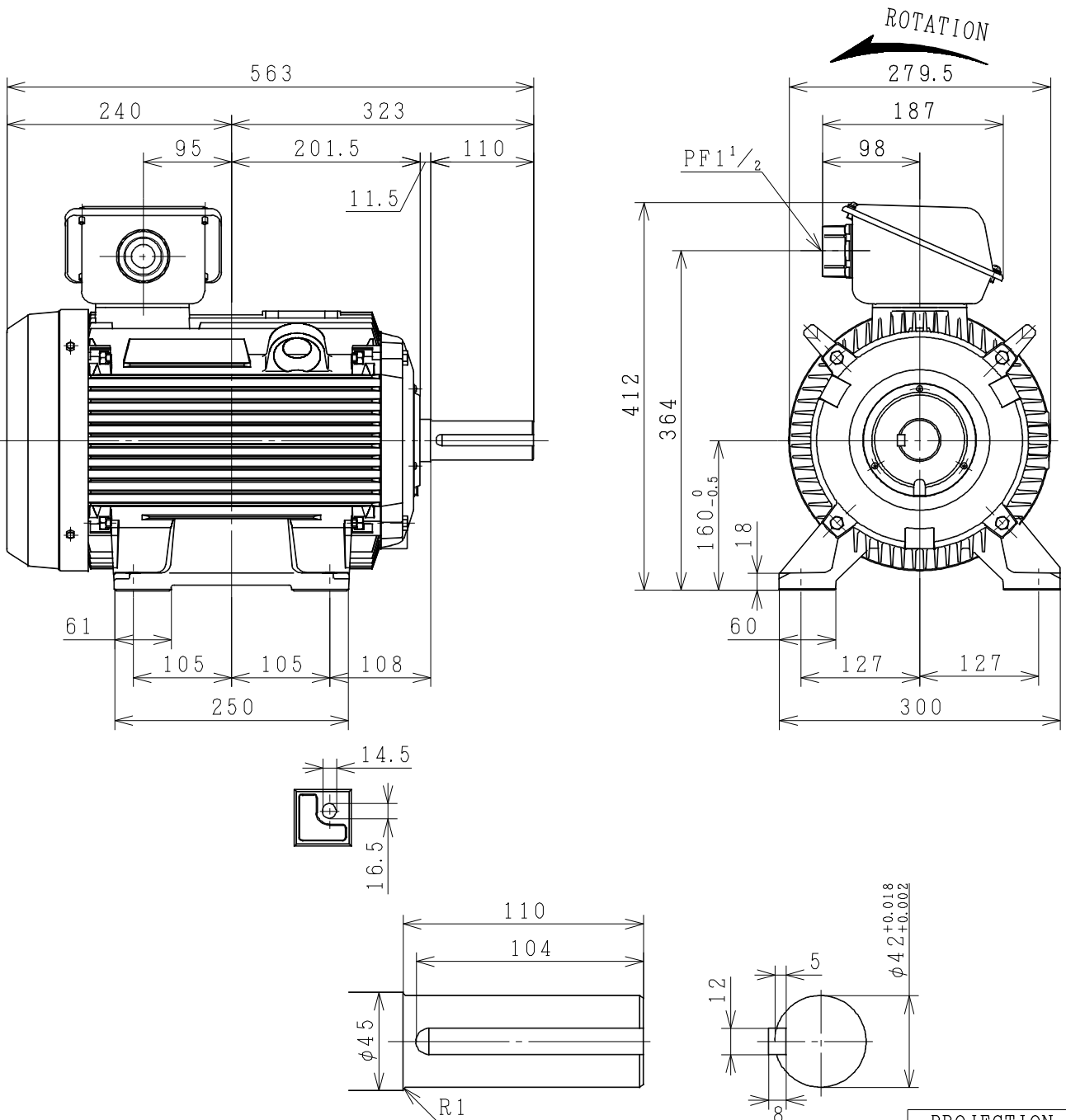


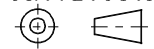
# THREE-PHASE INDUCTION MOTOR

| OUTPUT | TYPE | FORM | RATING | VOLTAGE (V) | FREQ. (Hz) | SYNC. SPEED (min <sup>-1</sup> ) | POLES | TH. CLASS | MASS (kg) |
|--------|------|------|--------|-------------|------------|----------------------------------|-------|-----------|-----------|
| 15HP   | TF0  | KK   | S1     | 380/415     | 50         | 3000                             | 2     | F         | 70        |
| 20HP   | TF0  | KK   | S1     | 380/415     | 50         | 3000                             | 2     | F         | 79        |
| 15HP   | TF0  | KK   | S1     | 380/415     | 50         | 1500                             | 4     | F         | 73        |
| 10HP   | TF0  | KK   | S1     | 380/415     | 50         | 1000                             | 6     | F         | 75        |



PROTECTION : IP55

PROJECTION

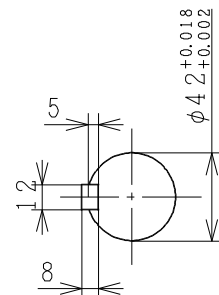
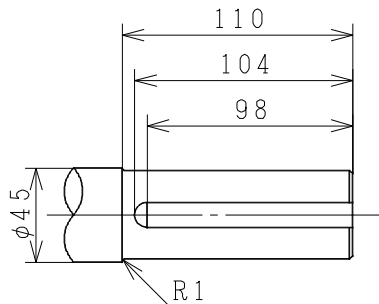
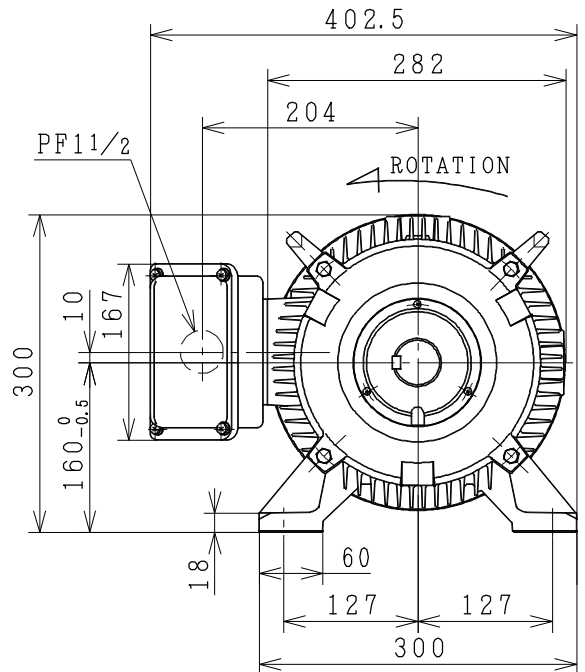
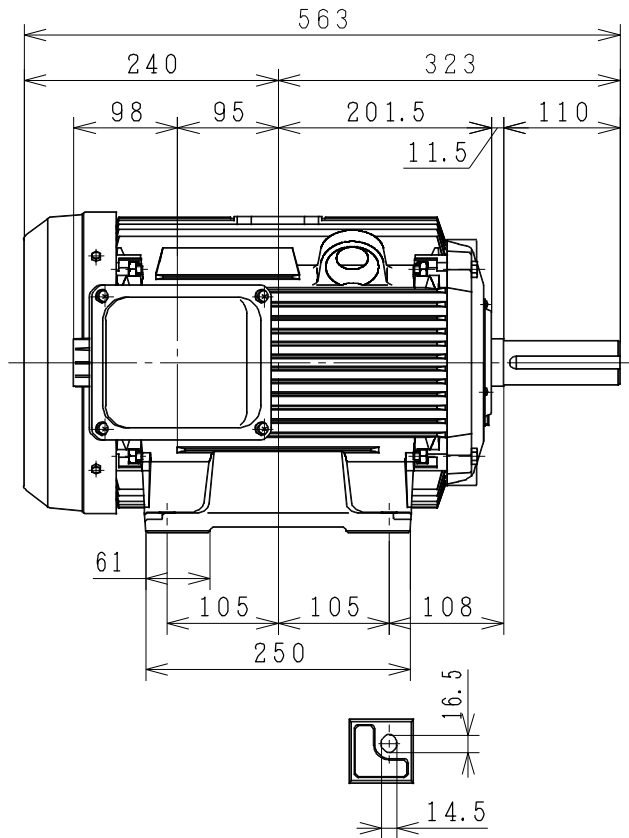


|            |  |           |                                  |      |
|------------|--|-----------|----------------------------------|------|
| CUSTOMER   | QTY.   | ORDER No. | WORK No.                         | REV. |
| DIMENSIONS | <b>HITACHI</b><br>Hitachi Industrial Technology (Thailand), Ltd. |           | HITT WORKS DWG. No.<br>4HTD03370 | SH.  |

FRAME SIZE TF0D-160M (TMHD)

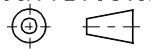
# THREE-PHASE INDUCTION MOTOR

| OUTPUT | TYPE | FORM | RATING | VOLTAGE (V) | FREQ. (Hz) | SYNC. SPEED (min <sup>-1</sup> ) | POLES | INS. CLASS | MASS (kg) |
|--------|------|------|--------|-------------|------------|----------------------------------|-------|------------|-----------|
| 15HP   | TFO  | KK   | S1     | 380/415     | 50         | 3000                             | 2     | F          | 70        |
| 20HP   | TFO  | KK   | S1     | 380/415     | 50         | 3000                             | 2     | F          | 79        |
| 15HP   | TFO  | KK   | S1     | 380/415     | 50         | 1500                             | 4     | F          | 73        |
| 10HP   | TFO  | KK   | S1     | 380/415     | 50         | 1000                             | 6     | F          | 75        |



PROTECTION: IP55

PROJECTION



|                    |          |              |  |           |                     |      |
|--------------------|----------|--------------|--|-----------|---------------------|------|
| CUSTOMER           |          |              | QTY.   | ORDER No. | WORK No.            | REV. |
| DWN. P. TIANCHAI   | 21-09-12 | } DIMENSIONS | <b>HITACHI</b><br>Hitachi Industrial Technology (Thailand), Ltd. |           | HITT WORKS DWG. No. | SH.  |
| CHKD. W. THAWAT    |          |              |  |           | 4HTD02385           |      |
| APPD. T. SHIMOZONO |          |              |  |           |                     |      |

FRAME SIZE TFOF (D) -160M (TMLR)

# HITACHI

## MANUFACTURER'S TEST REPORT OF INDUCTION MOTOR

|        |  |          |  |
|--------|--|----------|--|
| MESSRS |  | ORDER No |  |
|--------|--|----------|--|

### SPECIFICATION FOR MOTOR

|               |               |                      |         |                           |           |
|---------------|---------------|----------------------|---------|---------------------------|-----------|
| OUT PUT(HP)   | 15            | POLES                | 2       | TYPE-FORM                 | TFO-KK    |
| FREQUENCY(HZ) | 50/50         | VOLTAGE(V)           | 380/415 | CURRENT(A)                | 21/21     |
| PHASES        | 3             | RATING               | S1      | INSULATION                | F         |
| STANDARD      | JEC-2137-2000 | SECONDARY VOLTAGE(V) | —       | SECONDARY CURRENT(A)      | —         |
| COOLING       | IC411         | PROTECTION           | IP55    | SPEED(min <sup>-1</sup> ) | 2900/2910 |

| MFG No | FREQUENCY (HZ) | NO-LOAD TEST |            |          | LOCKED ROTOR TEST |            |          |
|--------|----------------|--------------|------------|----------|-------------------|------------|----------|
|        |                | VOLTAGE(V)   | CURRENT(A) | INPUT(W) | VOLTAGE(V)        | CURRENT(A) | INPUT(W) |
|        | 50             | 380          | 6.50       | 528.0    | 66.8              | 20.0       | 1030.0   |
|        | 50             | 415          | 9.56       | 666.0    | 66.8              | 20.0       | 1030.0   |
|        |                |              |            |          |                   |            |          |

(3) WINDINGS RESISTANCE (BETWEEN LINES) STATOR 115°C 0.81892(Ω)

#### (4) LOAD CHARACTERISTICS

| LOAD(%) | CURRENT(A)  | EFFICIENCY(%) | POWERFACTOR(%) | SLIP(%) |
|---------|-------------|---------------|----------------|---------|
| 25      | 8.27/10.68  | 82.6/79.2     | 61.2/45.1      | 0.4/0.4 |
| 50      | 11.74/13.20 | 88.7/86.9     | 80.3/66.6      | 0.9/0.8 |
| 75      | 16.01/16.59 | 90.0/89.1     | 87.0/77.5      | 1.4/1.2 |
| 100     | 20.78/20.55 | 89.9/89.5     | 89.5/83.0      | 1.9/1.6 |
| 125     | 26.03/22.47 | 89.0/89.2     | 90.2/85.7      | 2.5/2.1 |
|         |             |               |                |         |

(5) MAXIMUM OUT PUT(%) STARTING CURRENT(A) STARTING TORQUE(%)

244/286 148.5/165.0 260/322

#### (6) TEMPERATURE RISE TEST (R)-RESISTANCE METHOD

| STATOR WINDINGS(K) | FRAME(K)  | ROTOR WINDINGS(K) |
|--------------------|-----------|-------------------|
| 68.5/68.5 (R)      | 24.0/24.0 | -                 |

(7) INSULATION RESISTANCE BY 500V MEGGER

100MΩ

(8) WITHSTAND STATOR WINDINGS TO CORE

1900V 1MIN WITHSTOOD

VOLTAGE TEST ROTOR WINDINGS TO CORE

—V 1MIN WITHSTOOD

(9) CONSTRUCTION, DIMENSION, PAINTING, OTHER PARTS

SATISFACTORY

|   |            |               |
|---|------------|---------------|
| HITACHI INDUSTRIAL TECHNOLOGY (THAILAND) LTD. | CHECKED BY | C.ANAN        |
|   | DATE       | 06-JUNE.-2015 |

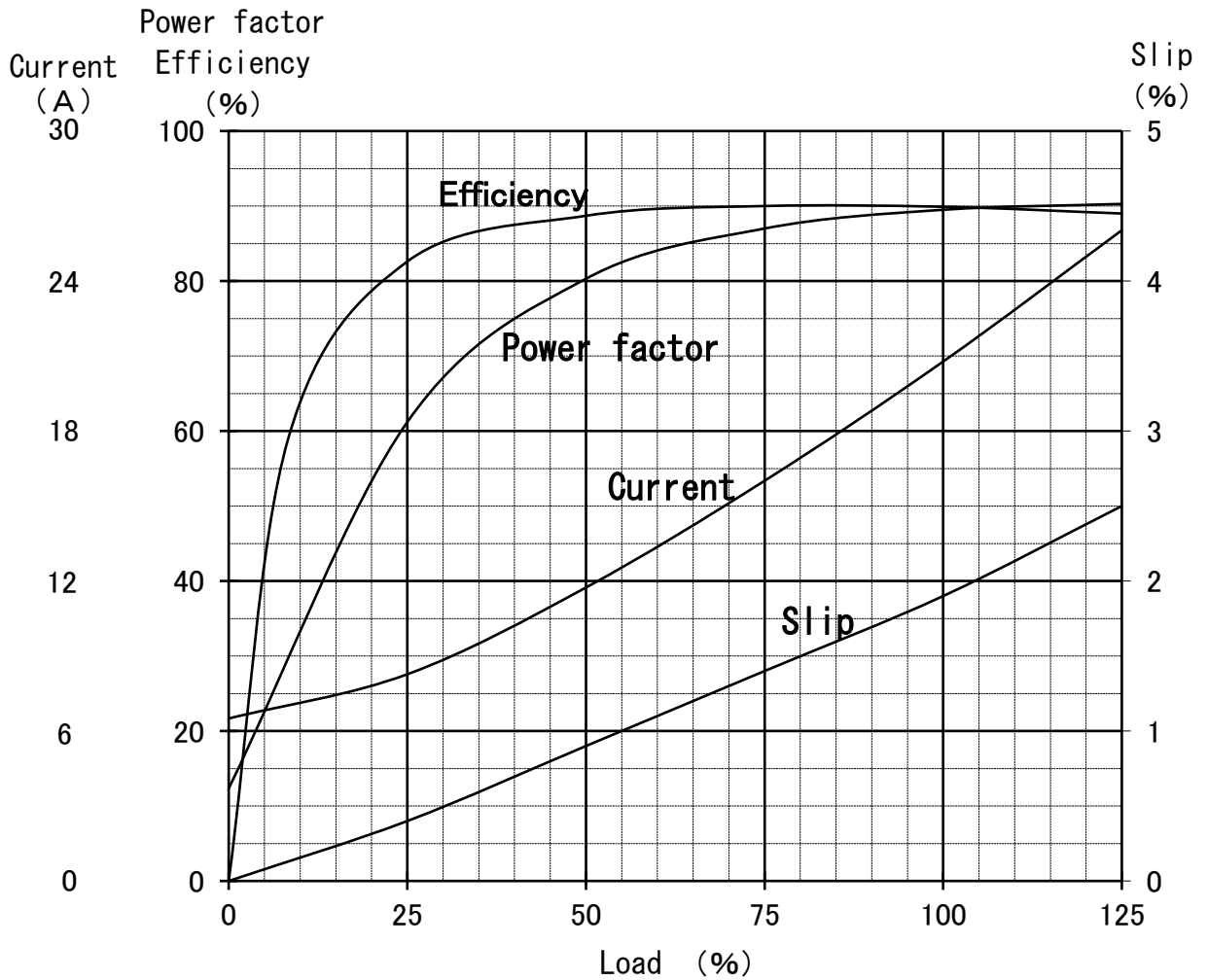
REP.No.RP10067

## Three Phase Induction Motor Characteristic Curve

Hitachi Industrial Technology(Thailand),Ltd

|                |                 |
|----------------|-----------------|
| Power (HP)     | 15              |
| Pole           | 2               |
| Type-Form      | TFO-KK, VTFO-KK |
| Voltage (V)    | 380             |
| Frequency (Hz) | 50              |
| Protection     | IP44, IP55      |

|                  |      |      |       |       |       |       |
|------------------|------|------|-------|-------|-------|-------|
| Load (%)         | 0    | 25   | 50    | 75    | 100   | 125   |
| Current (A)      | 6.50 | 8.27 | 11.74 | 16.01 | 20.78 | 26.03 |
| Efficiency (%)   | 0    | 82.6 | 88.7  | 90.0  | 89.9  | 89.0  |
| Power factor (%) | 12.3 | 61.2 | 80.3  | 87.0  | 89.5  | 90.3  |
| Slip (%)         | 0    | 0.4  | 0.9   | 1.4   | 1.9   | 2.5   |



15HP (V) TF0-KK 2P  
380/415V 50Hz  
IP44/IP55

