

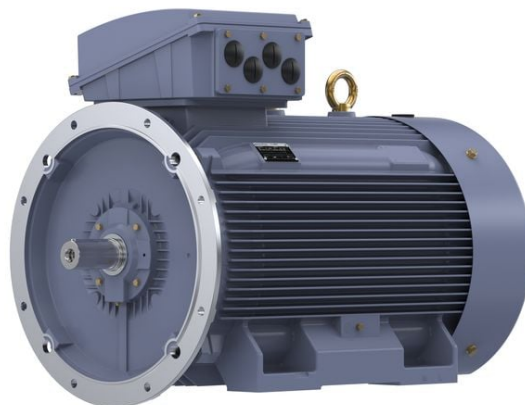
PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA1603A1131GAC010

Catalog No: TCA1603A1131GAC010

TerraMAX® Cast Iron Motor, 215 HP, 3 Ph, 50 Hz, 400 V, 1000 RPM, 355M Frame, TEFC



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Nameplate Specifications

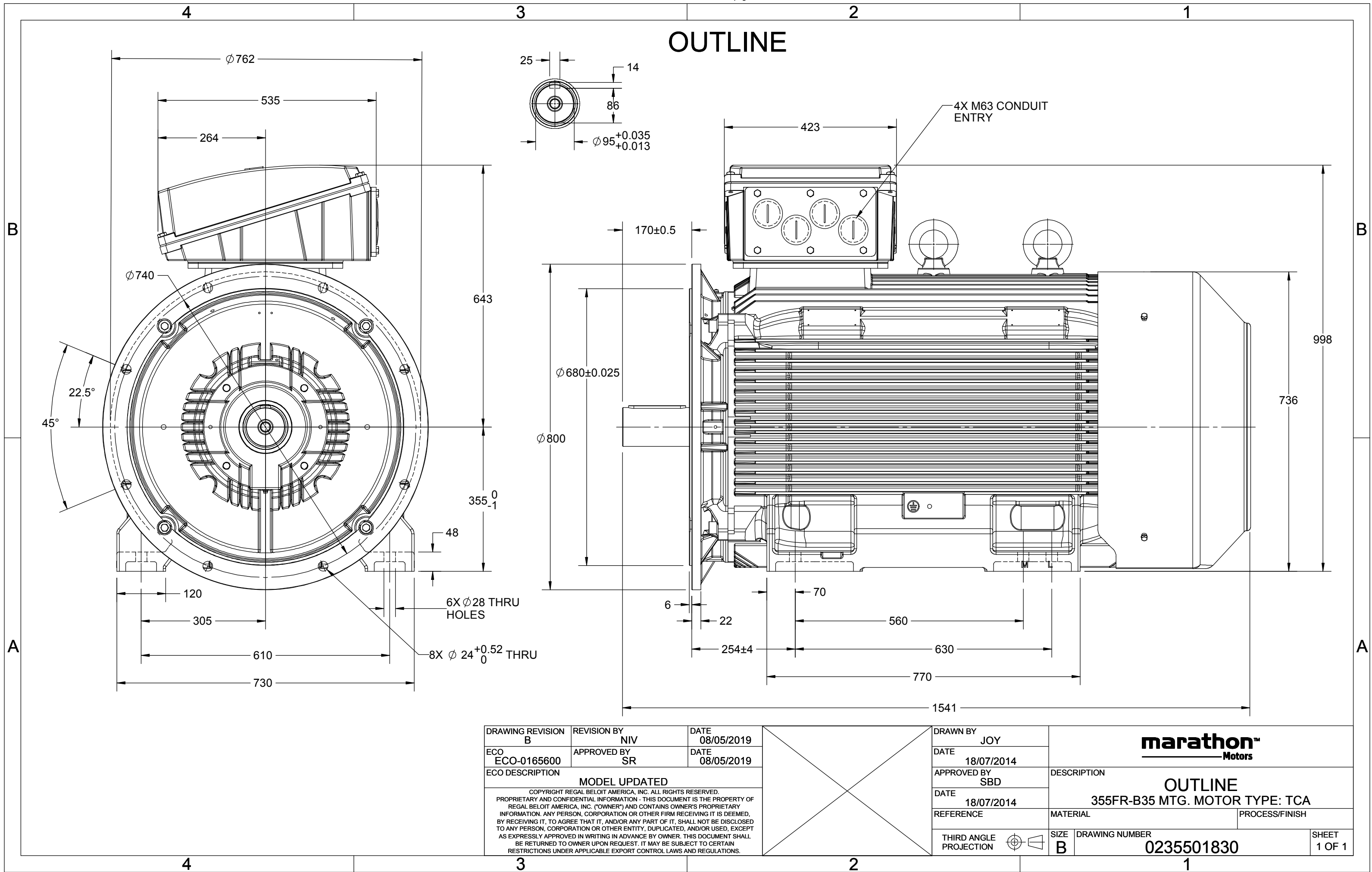
| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 215 Hp | Output KW | 160.0 kW |
| Frequency | 50 Hz | Voltage | 400 V |
| Current | 287.6 A | Speed | 991 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 95.6 % | Power Factor | 0.84 |
| Duty | S1 | Insulation Class | F |
| Frame | 355M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6322 | Opp Drive End Bearing Size | 6322 |
| UL | No | CSA | No |
| CE | Yes | IP Code | 55 |
| Efficiency Class | IE3 | | |

Technical Specifications

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 6 | Rotation | Bi-Directional |
| Mounting | B35 | Motor Orientation | Horizontal |
| Drive End Bearing | C3 | Opp Drive End Bearing | C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 1542 mm | Frame Length | 1010 mm |
| Shaft Diameter | 95 mm | Shaft Extension | 170 mm |
| Assembly/Box Mounting | Top | | |
| Outline Drawing | 0235501830 | Connection Drawing | 8442000085 |

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OUTLINE



| | | |
|--|--------------------|--------------------|
| DRAWING REVISION B | REVISION BY NIV | DATE 08/05/2019 |
| ECO ECO-0165600 | APPROVED BY SR | DATE 08/05/2019 |
| ECO DESCRIPTION MODEL UPDATED | | |
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| | | | |
|---------------------------|-----------------------------------|------------------------------|-----------------|
| DRAWN BY JOY | marathon™ Motors | | |
| DATE 18/07/2014 | | | |
| APPROVED BY SBD | DESCRIPTION OUTLINE | | |
| DATE 18/07/2014 | 355FR-B35 MTG. MOTOR TYPE: TCA | | |
| REFERENCE | MATERIAL | PROCESS/FINISH | |
| THIRD ANGLE PROJECTION | SIZE B | DRAWING NUMBER 0235501830 | SHEET 1 OF 1 |

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| | | |
|---|---------------------------|---------------------------|
| DRAWING REVISION A | REVISION BY SN | DATE 13/01/2017 |
| ECO ECO-0116390 | APPROVED BY SBD | DATE 13/01/2017 |
| ECO DESCRIPTION NEW DRAWING RELEASE | | |

| GEOMETRIC TOLERANCE | | |
|---------------------|---------|------|
| LINEAR DIM | >0~6 | ±0.1 |
| | >6~30 | ±0.2 |
| | >30~120 | ±0.3 |



NOTES:

1. PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.442.2017

| | | | | |
|--|---------------------------|--|-------------------------------------|------------------------|
| | DRAWN BY SN | Regal Beloit America, Inc. | | |
| | DATE 16/12/2016 | | | |
| | APPROVED BY SBD | DESCRIPTION CONN DIAGRAM-NAMEPLATE | | |
| | DATE 16/12/2016 | | | |
| | REFERENCE | MATERIAL | PROCESS/FINISH | |
| | THIRD ANGLE PROJECTION | SIZE A | DRAWING NUMBER 8442000085 | SHEET 1 OF 1 |

Model No. TCA1603A1131GAC010

| U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [Nm] | IE Class | % EFF at __ load | | | | PF at __ load | | | I_A/I_N [pu] | T_A/T_N [pu] | T_K/T_N [pu] |
|----------|----------------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|-------------------|-------------------|-------------------|
| | | | | | | | | | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | | | |
| 400 | Δ | 50 | 160 | 215 | 287.6 | 991 | 1545.3 | IE3 | - | 95.6 | 95.6 | 95.6 | 0.84 | 0.81 | 0.71 | 6.1 | 1.9 | 2.5 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|-----------------------------|---|---|
| Motor type | TCA | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B35 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 355M | Motor weight - approx. | 1652 kg |
| Duty | S1 | Gross weight - approx. | 1697 kg |
| Voltage variation * | ± 10% | Motor inertia | 8.5699 kgm ² |
| Frequency variation * | ± 5% | Load inertia | Customer to Provide |
| Combined variation * | 10% | Vibration level | 2.8 mm/s |
| Design | N | Noise level (1meter distance from motor) | 70 dB(A) |
| Service factor | 1.0 | No. of starts hot/cold/Equally spread | 2/3/4 |
| Insulation class | F | Starting method | DOL |
| Ambient temperature | -20 to +40 °C | Type of coupling | Direct |
| Temperature rise (by resistance) | 80 [Class B] K | LR withstand time (hot/cold) | 15/30 s |
| Altitude above sea level | 1000 meter | Direction of rotation | Bi-directional |
| Hazardous area classification | NA | Standard rotation | Clockwise form DE |
| Zone classification | NA | Paint shade | RAL 5014 |
| Gas group | NA | Accessories | |
| Temperature class | NA | Accessory - 1 | PTC 150°C |
| Rotor type | Aluminum Die cast | Accessory - 2 | - |
| Bearing type | Anti-friction ball | Accessory - 3 | - |
| DE / NDE bearing | 6322 C3 / 6322 C3 | Terminal box position | TOP |
| Lubrication method | Regreasable | Maximum cable size/conduit size | 1R x 3C x 300mm ² /4 x M63 x 1.5 |
| Type of grease | CHEVRON SRI-2 or Equivalent | Auxiliary terminal box | NA |

 I_A/I_N - Locked Rotor Current / Rated Current

 T_K/T_N - Breakdown Torque / Rated Torque

 T_A/T_N - Locked Rotor Torque / Rated Torque

NOTE

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

* Voltage, Frequency and combine variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

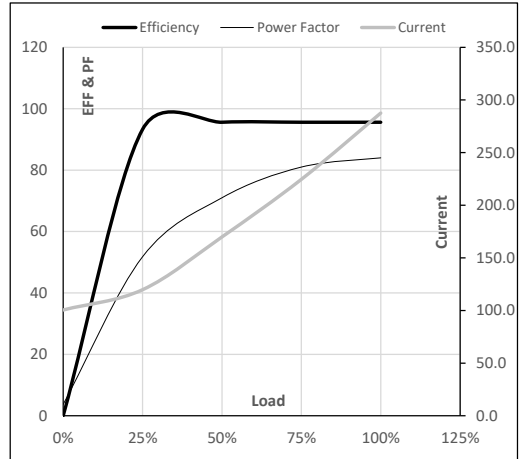
| Efficiency | Europe | China | India | Aus/Nz | Brazil | Global IEC |
|------------|--------|-----------------------|-------|--------|--------|---------------|
| Standards | - | GB 18613-2012 Grade 2 | - | - | - | IEC: 60034-30 |

Model No. TCA1603A1131GAC010

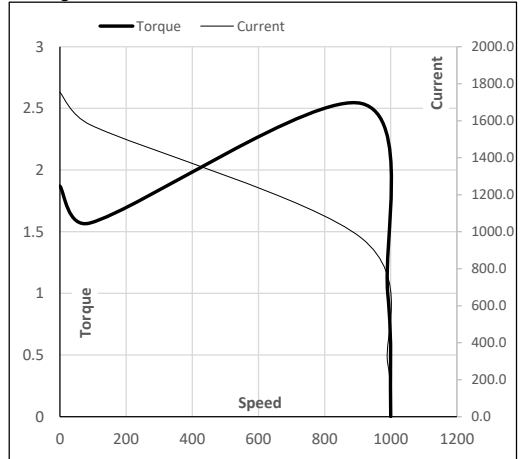
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 400 | Δ | 50 | 160 | 215 | 287.6 | 991 | 157.57 | 1545.26 | IE3 | 40 | S1 | 1000 | 8.5699 | 1652 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|-------|-------|-------|--------|--------|-------|
| Current | A | 100.5 | 119.7 | 169.9 | 224.6 | 287.6 | |
| Torque | Nm | 0.0 | 383.7 | 769.0 | 1156.1 | 1545.3 | |
| Speed | r/min | 1000 | 998 | 996 | 993 | 991 | |
| Efficiency | % | 0.0 | 93.3 | 95.6 | 95.6 | 95.6 | |
| Power Factor | % | 3.7 | 51.8 | 71.0 | 81.0 | 84.0 | |

Performance vs Load Chart

Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|--------|--------|-------|-------|-------|
| Speed | r/min | 0 | 91 | 912 | 991 | 1000 |
| Current | A | 1754.3 | 1578.8 | 965.4 | 287.6 | 100.5 |
| Torque | pu | 1.9 | 1.6 | 2.5 | 1 | 0 |

Starting Characteristics Chart

NOTE Refer data sheet for applicable standard and tolerances on performance parameters

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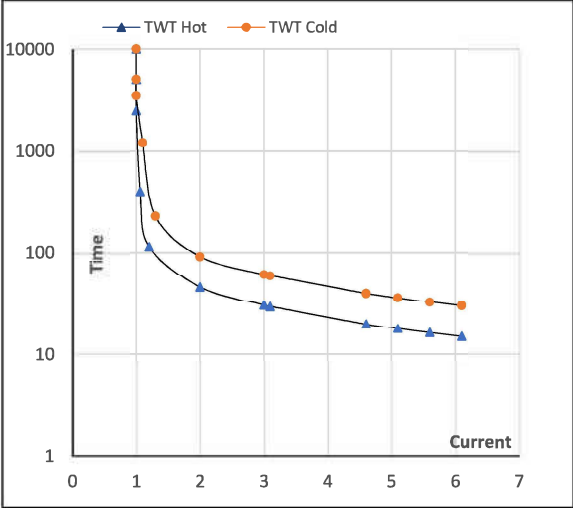
Model No. TCA1603A1131GAC010

| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [rpm] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg·m ²] | Weight [kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 400 | Δ | 50 | 160 | 215.0 | 287.6 | 991 | 157.57 | 1545.26 | IE3 | 40 | S1 | 1000 | 8.5699 | 1652 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR | |
|----------|---------|----------------|----------------|----------------|----------------|----------------|-----|-----|
| TWT Hot | s 10000 | 46 | 31 | 23 | 18 | 17 | 15 | |
| TWT Cold | s 10000 | 92 | 61 | 43 | 37 | 34 | 30 | |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 6.1 |

Thermal Characteristics Chart



NOTE Refer data sheet for applicable standard and tolerances on performance parameters

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