

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCN1102A1113GAC010

Catalog No: TCN1102A1113GAC010

TerraMAX® Cast Iron Motor, 150 HP, 3 Ph, 50 Hz, 400 V, 1500 RPM, 315S Frame, TEFC



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RegalRexnord

Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 150 Hp | Output KW | 110.0 kW |
| Frequency | 50 Hz | Voltage | 400 V |
| Current | 189.1 A | Speed | 1487 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 95.4 % | Power Factor | 0.88 |
| Duty | S1 | Insulation Class | F |
| Frame | 315S | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6319 | Opp Drive End Bearing Size | 6319 |
| UL | No | CSA | No |
| CE | Yes | IP Code | 55 |
| Number of Speeds | 1 | Efficiency Class | IE3 |

Technical Specifications

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 4 | Rotation | Bi-Directional |
| Mounting | B3 | Motor Orientation | Horizontal |
| Drive End Bearing | C3 | Opp Drive End Bearing | C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 1206 mm | Frame Length | 729 mm |
| Shaft Diameter | 80 mm | Shaft Extension | 170 mm |
| Assembly/Box Mounting | R Side | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0231501362 |

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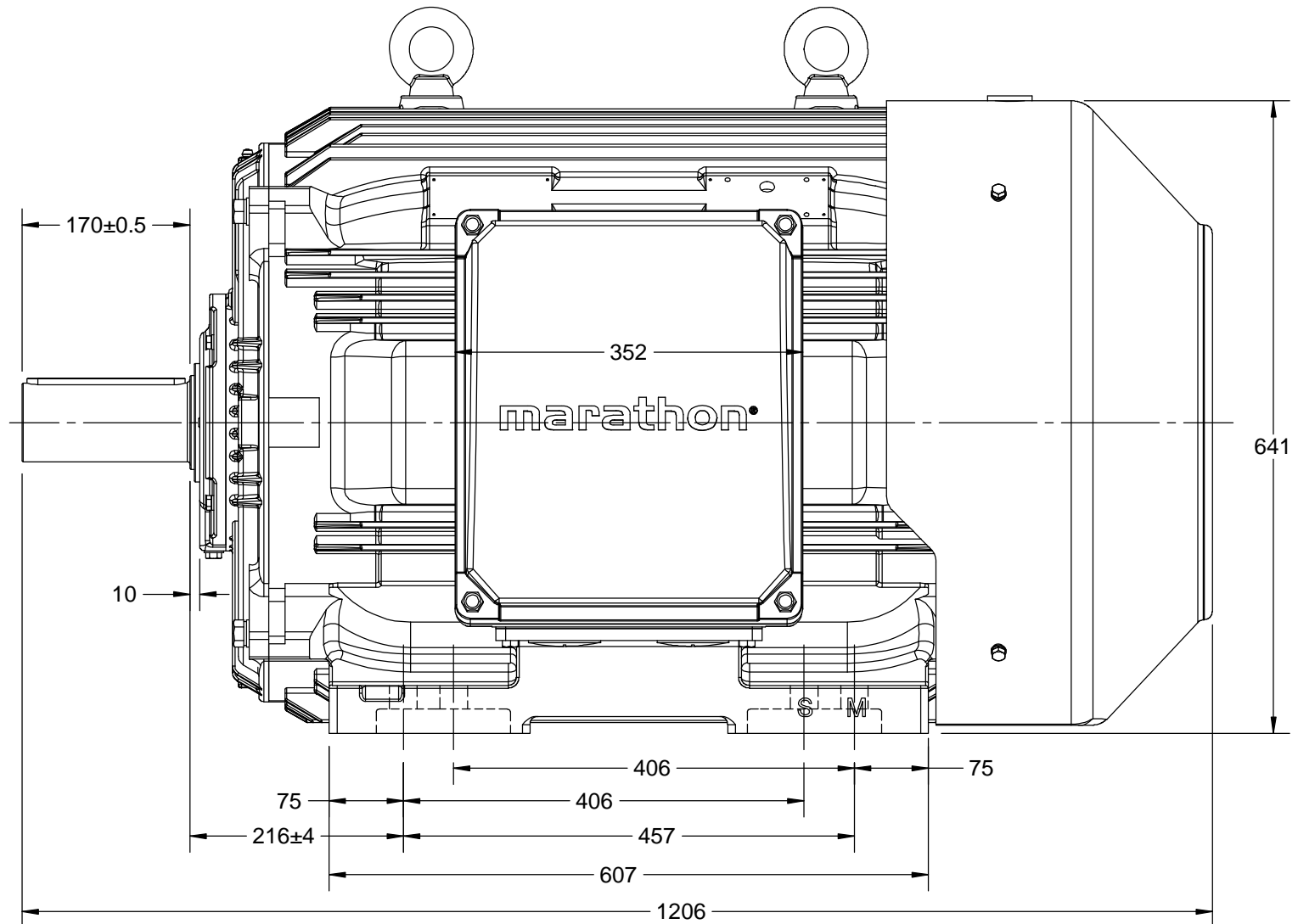
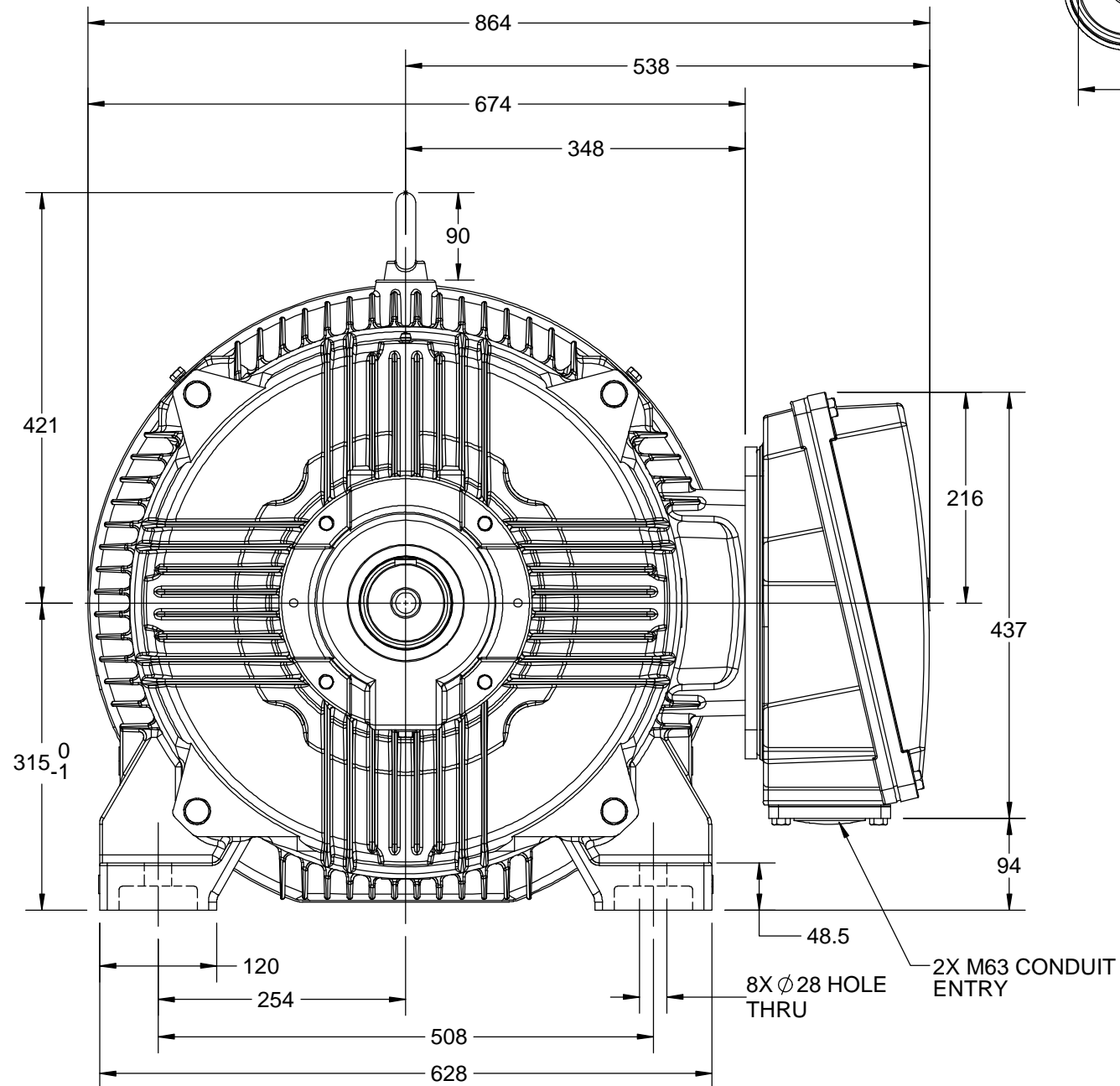
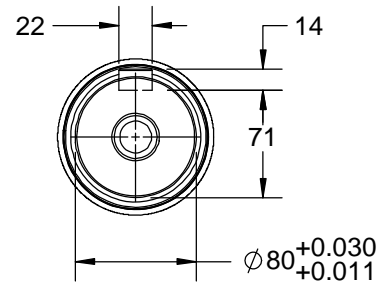
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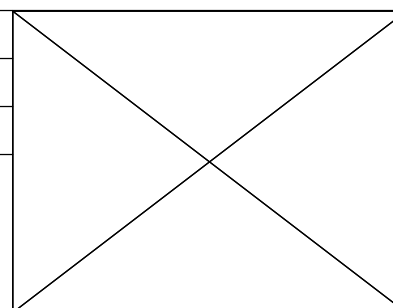
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A

A



| | | |
|--|--------------------|--------------------|
| DRAWING REVISION C | REVISION BY LK | DATE 05/08/2020 |
| ECO ECO-0190270 | APPROVED BY JAY | DATE 05/08/2020 |
| ECO DESCRIPTION MODEL UPDATED | | |
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| | | | |
|---------------------------|----------------------------|------------------------------|-----------------|
| DRAWN BY SKM | marathon™ Motors | | |
| DATE 08/11/2017 | | | |
| APPROVED BY JAY | DESCRIPTION OUTLINE | | |
| DATE 08/11/2017 | 315S/M 4~8P-B3-RHS TB | | |
| REFERENCE | MATERIAL | PROCESS/FINISH | |
| THIRD ANGLE PROJECTION | SIZE B | DRAWING NUMBER 0231501362 | 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 | |

Model No. TCN1102A1113GAC010

| 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 | 110 | 150 | 189.1 | 1487 | 718.2 | IE3 | - | 95.4 | 95.4 | 95 | 0.88 | 0.85 | 0.78 | 6.5 | 1.9 | 2.9 |
| | | | | | | | | | | | | | | | | | | |

| | | | | | |
|----------------------------------|-----------------------------|-------|---|---|------------------|
| Motor type | TCN | | Degree of protection | IP 55 | |
| Enclosure | TEFC | | Mounting type | IM B3 | |
| Frame Material | Cast Iron | | Cooling method | IC 411 | |
| Frame size | 315S | | Motor weight - approx. | 961 | kg |
| Duty | S1 | | Gross weight - approx. | 1007 | kg |
| Voltage variation * | ± 10% | | Motor inertia | 3.4482 | 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) | 69 | 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 | Ex nA | | Standard rotation | Clockwise form DE | |
| Zone classification | Zone 2 | | Paint shade | RAL 5014 | |
| Gas group | IIC | | Accessories | | |
| Temperature class | T3 | | Accessory - 1 | PTC 150°C | |
| Rotor type | Aluminum Die cast | | Accessory - 2 | - | |
| Bearing type | Anti-friction ball | | Accessory - 3 | - | |
| DE / NDE bearing | 6319 C3 / 6319 C3 | | Terminal box position | RHS | |
| Lubrication method | Regreasable | | Maximum cable size/conduit size | 1R x 3C x 240mm ² /2 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

ATEX/IEC Ex certified as per IEC/EN 60079-0; IEC/EN 60079-15

All performance values at rated voltage and frequency.

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

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

Technical data are subject to change. There may be slight variations between calculated values in this datasheet and the motor nameplate figures.

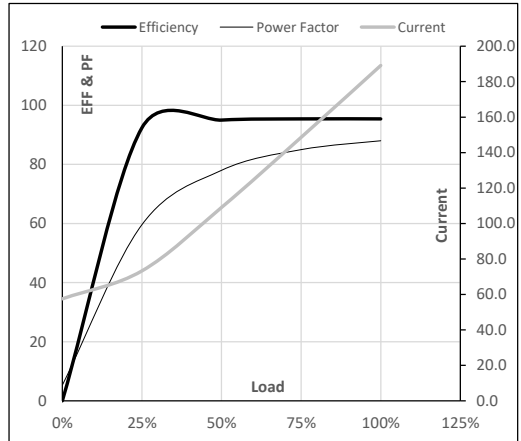
| Efficiency | Europe | China | India | Aus/Nz | Brazil | Global IEC |
|------------|----------------|-------|-------|-----------|--------|----------------|
| Standards | IEC 60034-30-1 | - | - | GEMS 2019 | - | IEC:60034-30-1 |

Model No. TCN1102A1113GAC010

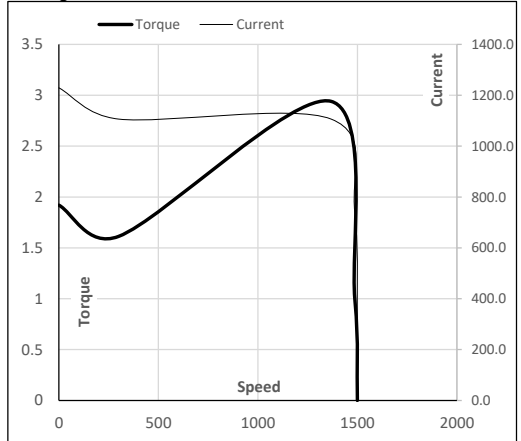
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 400 | Δ | 50 | 110 | 150 | 189.1 | 1487 | 73.24 | 718.20 | IE3 | 40 | S1 | 1000 | 3.4482 | 961 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 57.5 | 73.3 | 109.1 | 148.6 | 189.1 | |
| Torque | Nm | 0.0 | 178.4 | 357.5 | 537.4 | 718.2 | |
| Speed | r/min | 1500 | 1497 | 1494 | 1491 | 1487 | |
| Efficiency | % | 0.0 | 92.4 | 95.0 | 95.4 | 95.4 | |
| Power Factor | % | 5.3 | 59.6 | 78.0 | 85.0 | 88.0 | |

Performance vs Load Chart

Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|--------|--------|-------|-------|------|
| Speed | r/min | 0 | 300 | 1368 | 1487 | 1500 |
| Current | A | 1229.3 | 1106.4 | 739.7 | 189.1 | 57.5 |
| Torque | pu | 1.9 | 1.6 | 2.9 | 1 | 0 |

Starting Characteristics Chart

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

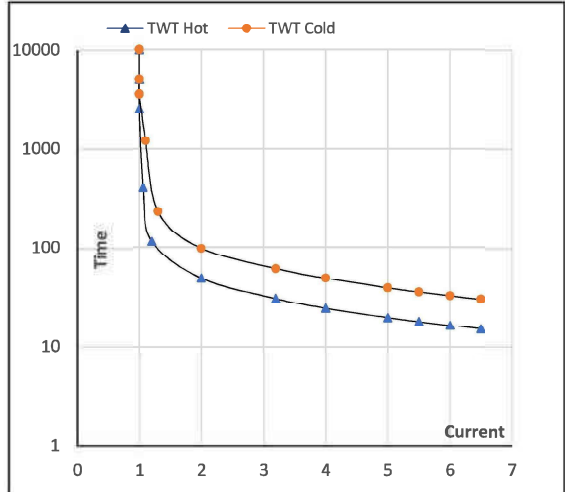
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Model No. TCN1102A1113GAC010

| 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 | 110 | 150.0 | 189.1 | 1487 | 73.24 | 718.20 | IE3 | 40 | S1 | 1000 | 3.4482 | 961 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR |
|----------|---------|----------------|----------------|----------------|----------------|----------------|-----|
| TWT Hot | s 10000 | 49 | 33 | 25 | 20 | 18 | 15 |
| TWT Cold | s 10000 | 98 | 70 | 49 | 39 | 36 | 30 |
| Current | pu 1 | 2 | 3 | 4 | 5 | 5.5 | 6.5 |

Thermal Characteristics Chart

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

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