

PRODUCT INFORMATION PACKET



Model No: TCN0224A1133GAC010

Catalog No: TCN0224A1133GAC010

TerraMAX® Cast Iron Motor, 30 HP, 3 Ph, 50 Hz, 400 V, 750 RPM, 225M Frame, TEFC





Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Phase | 3 | Output HP | 30 Hp |
| Output KW | 22.0 kW | Voltage | 400 V |
| Speed | 738 r/min | Service Factor | 1 |
| Frame | 225M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Efficiency | 90.6 % |
| Ambient Temperature | 40 °C | Frequency | 50 Hz |
| Current | 44.9 A | Power Factor | 0.78 |
| Duty | S1 | Insulation Class | F |
| Drive End Bearing Size | 6313 | Opp Drive End Bearing Size | 6213 |
| 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 | 8 | 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 | 862 mm | Frame Length | 425 mm |
| Shaft Diameter | 60 mm | Shaft Extension | 140 mm |
| Assembly/Box Mounting | R Side | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0222500784 |

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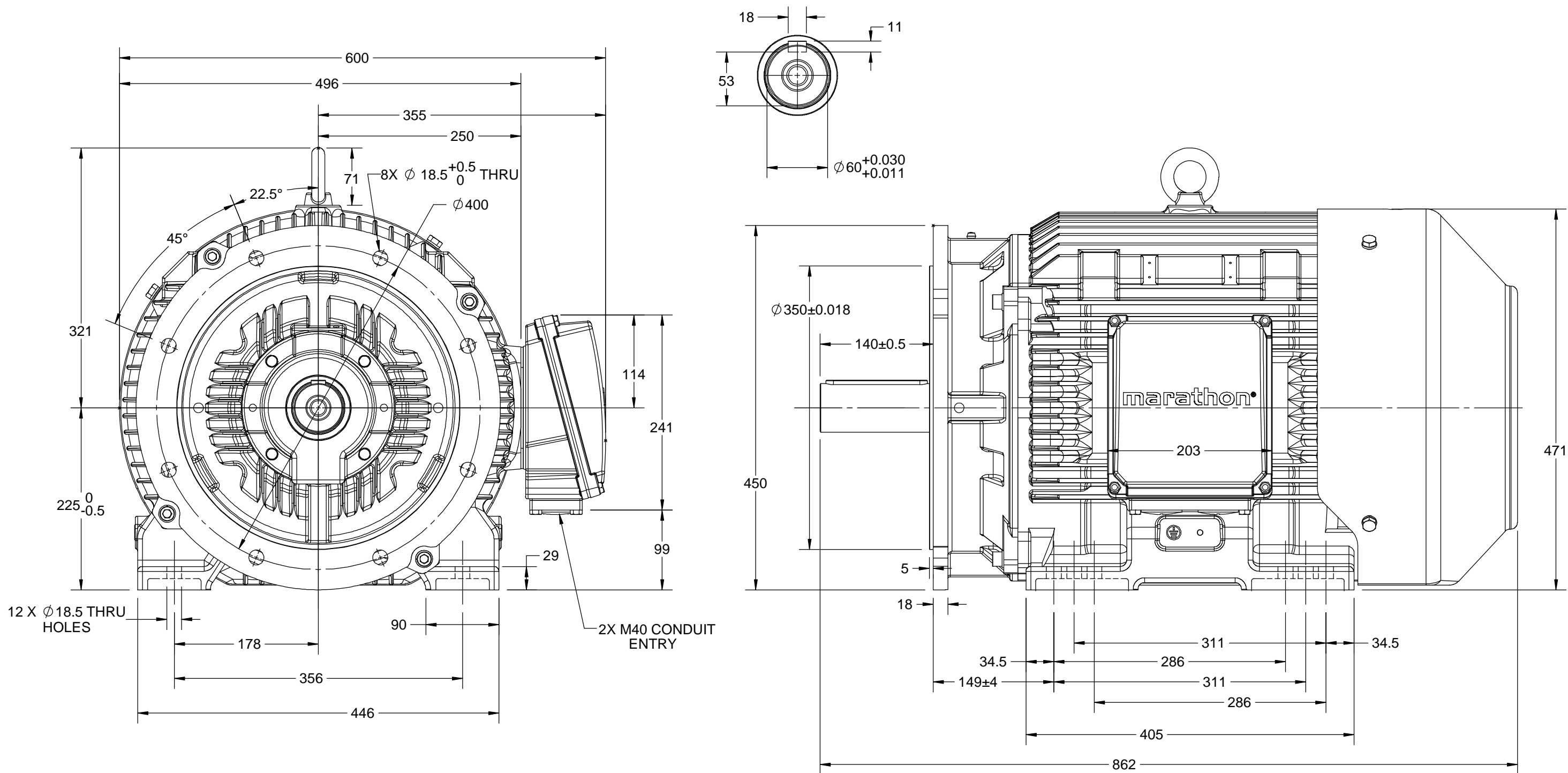
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B


B

A

A



| | | |
|--|--------------------|--------------------|
| DRAWING REVISION B | REVISION BY VS | DATE 09/08/2018 |
| ECO ECO-0148344 | APPROVED BY SBD | DATE 09/08/2018 |
| ECO DESCRIPTION MODEL UPDATED | | |
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| | | |
|---------------------------|--|------------------------------|
| DRAWN BY UDAY |  Regal Beloit America, Inc. | |
| DATE 16/08/2016 | | |
| APPROVED BY SBD | DESCRIPTION OUTLINE | |
| DATE 16/08/2016 | 225M FR 4~8P-B35 MTG TYPE: TCA/QCA-RHS TB | |
| REFERENCE | MATERIAL | PROCESS/FINISH |
| THIRD ANGLE PROJECTION | SIZE B | DRAWING NUMBER 0222500784 |
| | | 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

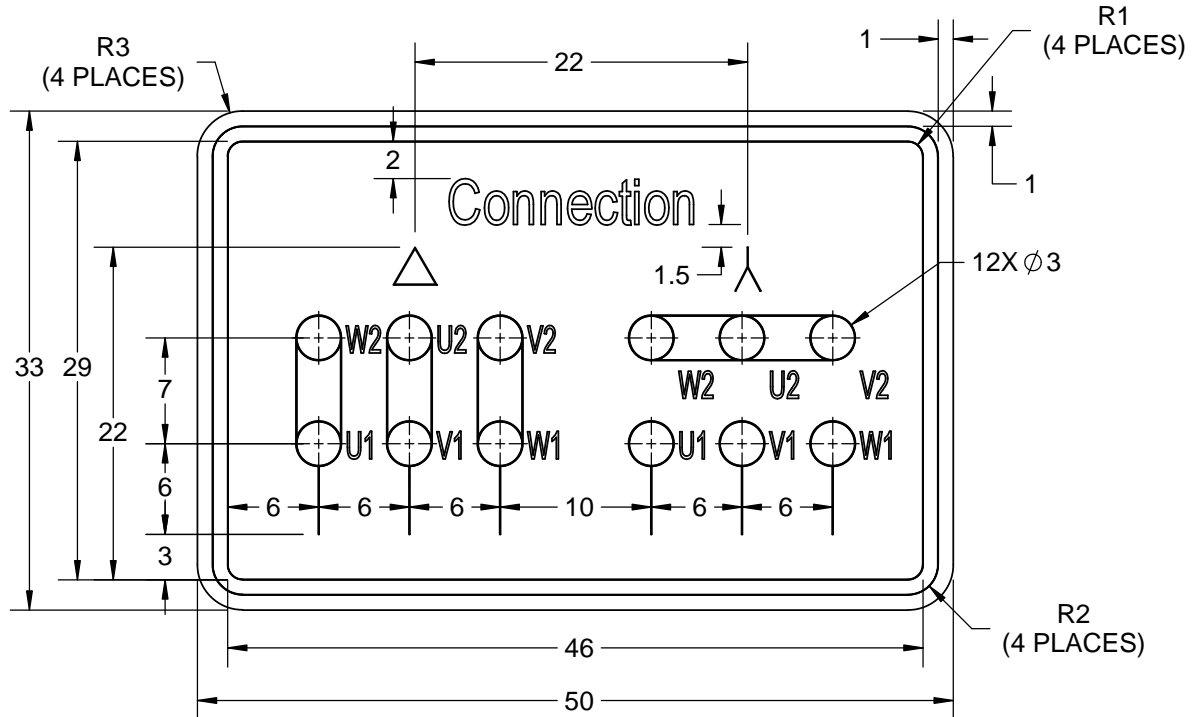
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ECO DESCRIPTION

NEW DRAWING RELEASE

GEOMETRIC TOLERANCE

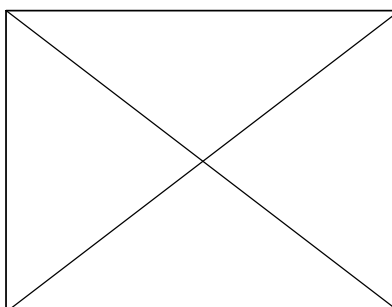
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|------------|---------|------|
| LINEAR DIM | >0~6 | ±0.1 |
| | >6~30 | ±0.2 |
| | >30~120 | ±0.3 |



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
DATE
16/12/2016
APPROVED BY
SBD
DATE
16/12/2016
REFERENCE
THIRD ANGLE PROJECTION

REGALTM Regal Beloit America, Inc.
DESCRIPTION
CONN DIAGRAM-NAMEPLATE
MATERIAL
PROCESS/FINISH
SIZE
A
DRAWING NUMBER
8442000085
SHEET
1 OF 1

Model No. TCN0224A1133GAC010

| 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] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|--|--|--|
| 400 | Δ | 50 | 22 | 30 | 44.9 | 738 | 289.51 | IE3 | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | 5.2 | 1.7 | 2.3 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|-----------------------------|---|--|
| Motor type | TCN | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B35 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 225M | Motor weight - approx. | 388 kg |
| Duty | S1 | Gross weight - approx. | 418 kg |
| Voltage variation * | ± 10% | Motor inertia | 1.0453 kgm ² |
| Frequency variation * | ± 5% | Load inertia | Customer to Provide |
| Combined variation * | 10% | Vibration level | 2.2 mm/s |
| Design | N | Noise level (1meter distance from motor) | 61 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 | 6313 C3 / 6213 C3 | Terminal box position | RHS |
| Lubrication method | Regreasable | Maximum cable size/conduit size | 1R x 3C x 50mm ² /2 x M40 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.

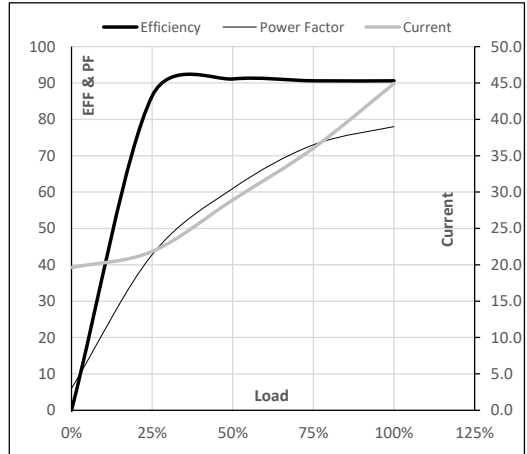
| Efficiency Standards | Europe IEC:60034-30-1 | China - | India - | Aus/Nz GEMS 2019 | Brazil - | Global IEC IEC:60034-30-1 |
|----------------------|--------------------------|------------|------------|---------------------|-------------|------------------------------|
|----------------------|--------------------------|------------|------------|---------------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

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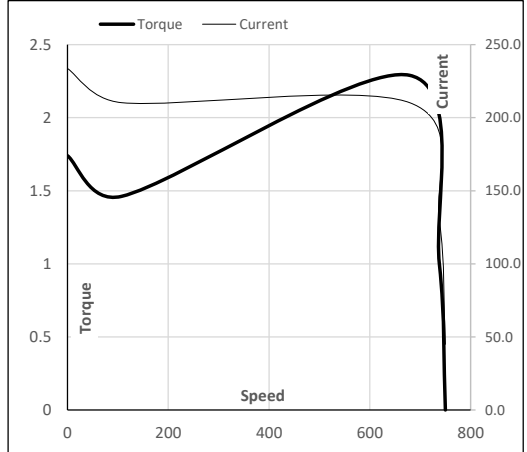
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 400 | Δ | 50 | 22 | 30 | 44.9 | 738 | 29.52 | 289.51 | IE3 | 40 | S1 | 1000 | 1.0453 | 388 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 19.6 | 21.8 | 28.9 | 36.0 | 44.9 | |
| Torque | Nm | 0.0 | 71.5 | 143.6 | 216.2 | 289.5 | |
| Speed | r/min | 750 | 747 | 744 | 741 | 738 | |
| Efficiency | % | 0.0 | 86.4 | 91.1 | 90.6 | 90.6 | |
| Power Factor | % | 6.0 | 42.8 | 61.0 | 73.0 | 78.0 | |

Performance vs Load Chart

Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|-------|-------|-------|-------|------|
| Speed | r/min | 0 | 107 | 679 | 738 | 750 |
| Current | A | 233.7 | 210.3 | 129.3 | 44.9 | 19.6 |
| Torque | pu | 1.7 | 1.5 | 2.3 | 1 | 0 |

Starting Characteristics Chart

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

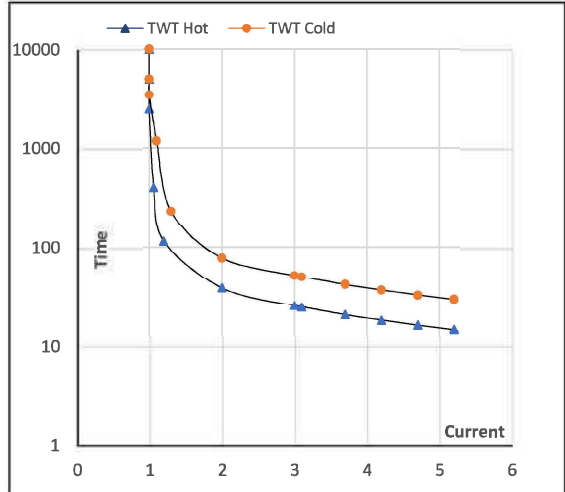
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Model No. TCN0224A1133GAC010

| 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 | 22 | 30.0 | 44.9 | 738 | 29.52 | 289.51 | IE3 | 40 | S1 | 1000 | 1.0453 | 388 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR | |
|----------|---------|----------------|----------------|----------------|----------------|----------------|----|-----|
| TWT Hot | s 10000 | 39 | 26 | 20 | 18 | 16 | 15 | |
| TWT Cold | s 10000 | 78 | 52 | 39 | 36 | 32 | 30 | |
| Current | pu | 1 | 2 | 3 | 4 | 4.5 | 5 | 5.2 |

Thermal Characteristics Chart

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

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