

PRODUCT INFORMATION PACKET

Model No: TCM18P4A2113GAC011

Catalog No: TCM18P4A2113GAC011

TerraMAX® IE3, Mining Duty Motors, 18.5 kW, 3Ph, 8 Pole, 400/690V, B3, 50Hz, 225S Frame, TEFC



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Nameplate Specifications

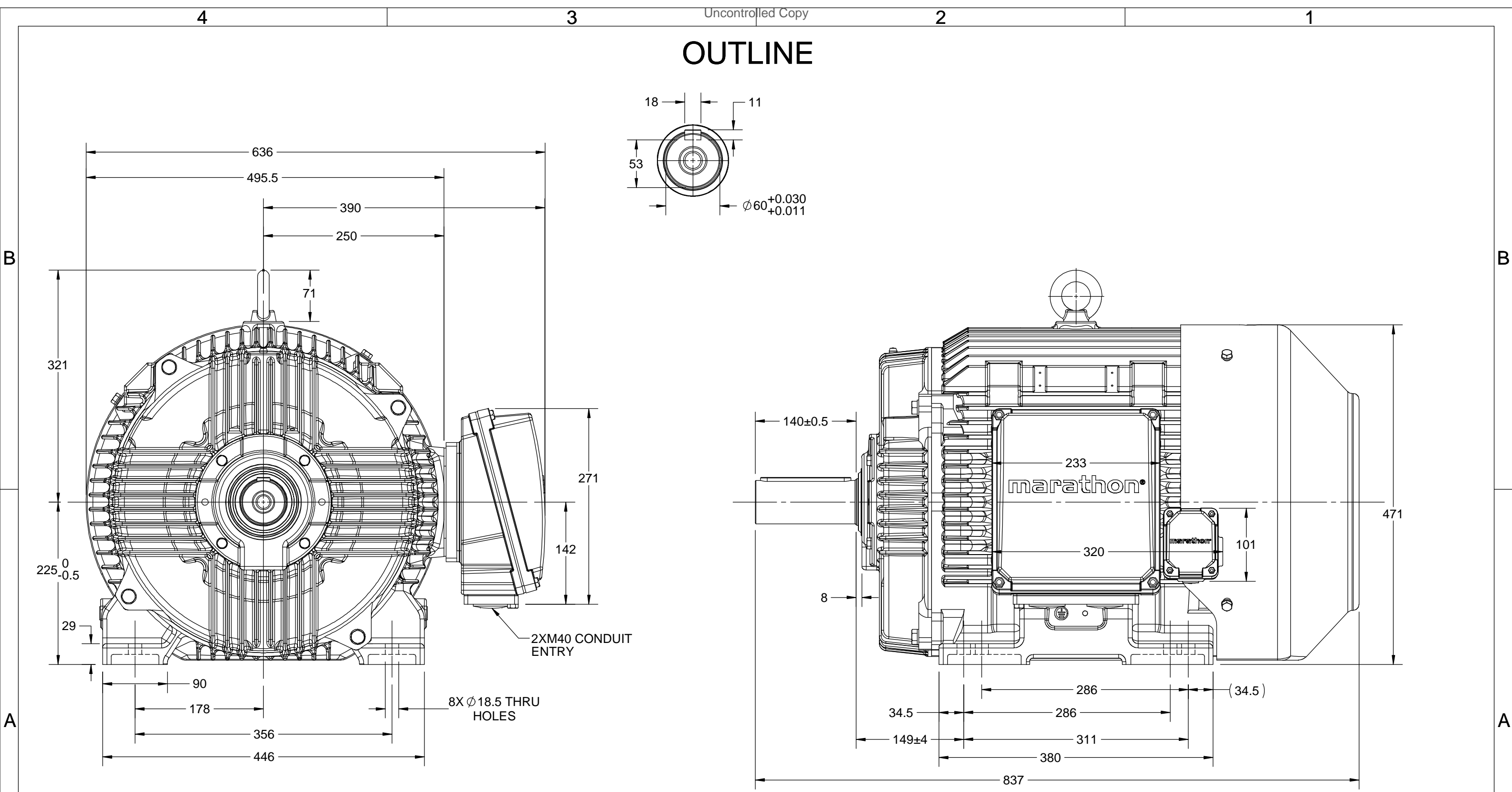
| | | | |
|------------------------|----------------------|----------------------------|------------------------------------|
| Output HP | 25 Hp | Output KW | 18.5 kW |
| Frequency | 50 Hz | Voltage | 400/690 V |
| Current | 38.5 A | Speed | 738 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 90.1 % | Power Factor | 0.77 |
| Duty | S1 | Insulation Class | H |
| Frame | 225S | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6313 | Opp Drive End Bearing Size | 6213 |
| UL | NO | CSA | NO |
| CE | YES | IP Code | 66 |
| Number of Speeds | 1 | Efficiency Class | IE3 |

Technical Specifications

| | | | |
|-----------------------|----------------------|-----------------------|-----------------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 8 | 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 | 837 mm | Frame Length | 400 mm |
| Shaft Diameter | 60 mm | Shaft Extension | 140 mm |
| Assembly/Box Mounting | RHS | | |
| Connection Drawing | 8442000086 | Outline Drawing | 0222500882 |

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OUTLINE



| | | |
|---|----------------------|--------------------|
| DRAWING REVISION B | REVISION BY BISWA | DATE 13/08/2018 |
| ECO ECO-0150057 | APPROVED BY SBD | DATE 13/08/2018 |
| ECO DESCRIPTION MODEL UPDATED WITH NEW STRUCTURE | | |
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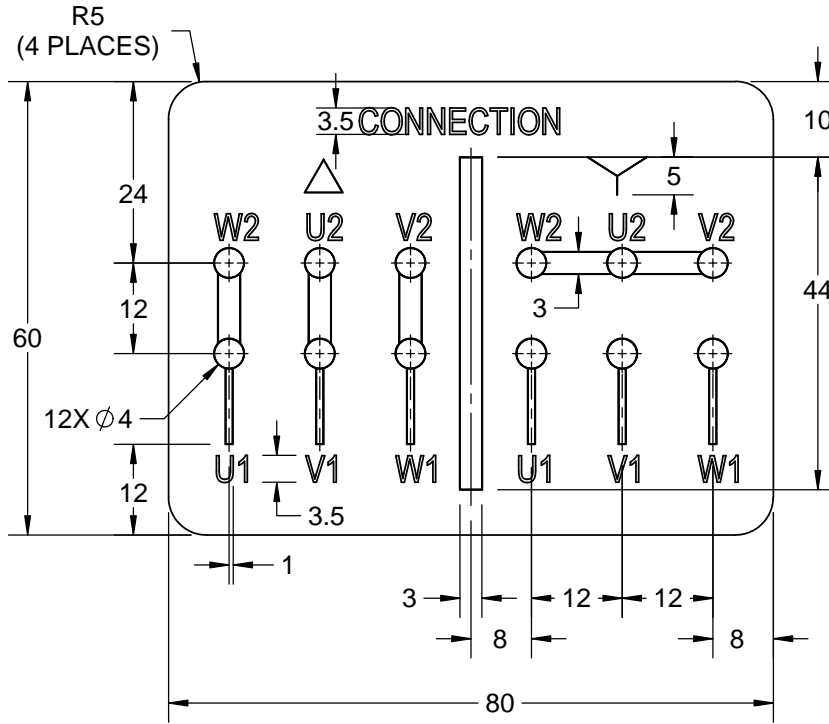
| |
|---------------------------|
| DRAWN BY LK |
| DATE 19/12/2017 |
| APPROVED BY SBD |
| DATE 19/12/2017 |
| REFERENCE |
| THIRD ANGLE PROJECTION |

| | |
|-------------------------------------|------------------------------|
| marathon™ Motors | |
| DESCRIPTION OUTLINE | |
| 225S FR-B3 MTG 4-8P MOTOR TYPE: TCM | |
| MATERIAL | PROCESS/FINISH |
| SIZE B | DRAWING NUMBER 0222500882 |
| SHEET 1 OF 1 | |

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| | | |
|---|---------------------------|---------------------------|
| DRAWING REVISION A | REVISION BY SN | DATE 13/01/2016 |
| ECO ECO-0116390 | APPROVED BY SBD | DATE 13/01/2016 |
| ECO DESCRIPTION NEW DRAWING RELEASE | | |

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



NOTES:

1. PRESSURE-SENSITIVE ADHESIVE TAPE COATED WITH ANTI-ADHESIVE.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.864.1008

| | | | | |
|------------------------|-------------------------------------|--|-----------------------------------|----------------|
| | DRAWN BY SN | | Regal Beloit America, Inc. | |
| | DATE 16/12/2016 | | | |
| | APPROVED BY SBD | | | |
| | DATE 16/12/2016 | | | |
| | REFERENCE | | | |
| THIRD ANGLE PROJECTION | | DESCRIPTION CONN DIAGRAM-NAMEPLATE | MATERIAL | PROCESS/FINISH |
| SIZE A | DRAWING NUMBER 8442000086 | | SHEET 1 OF 1 | |

Model No. TCM18P4A2113GAC011

| U (V) | Δ / Y Conn | f [Hz] | P | | 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] |
|----------|---------------|-----------|------|------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|--|--|--|
| | | | [kW] | [hp] | | | | | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | | | |
| 400 | Δ | 50 | 18.5 | 25 | 38.5 | 738 | 241.24 | IE3 | - | 90.1 | 90.1 | 90.5 | 0.77 | 0.72 | 0.59 | 5.2 | 1.7 | 2.3 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|-----------------------------|---|--|
| Motor type | TCM | Degree of protection | IP 66 |
| Enclosure | TEFC | Mounting type | IM B3 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 225S | Motor weight - approx. | 376 kg |
| Duty | S1 | Gross weight - approx. | 406 kg |
| Voltage variation * | ± 10% | Motor inertia | 0.8781 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 | 1.15 | No. of starts hot/cold/Equally spread | 2/3/4 |
| Insulation class | H | 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) | 25/50 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 2008 |
| 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 | 6313-C3 / 6213-C3 | Terminal box position | RHS |
| Lubrication method | Regreasable | Maximum cable size/conduit size | 1R x 3C x 95mm ² /2 x M50 x 1.5 |
| Type of grease | CHEVRON SRI-2 or Equivalent | Auxiliary terminal box | YES |

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 slight variations between calculated values in this datasheet and the motor nameplate figures.

| Efficiency Standards | Europe IEC:60034-30-1 | China - | India - | Aus/Nz AS/NZ 1359:5:2004 | Brazil - | Global IEC IEC:60034-30-1 |
|----------------------|--------------------------|------------|------------|-----------------------------|-------------|------------------------------|
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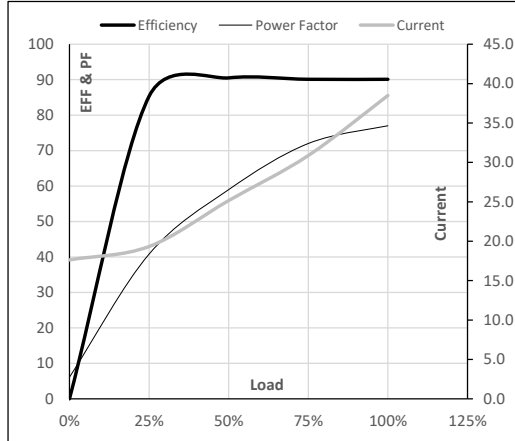
Model No. TCM18P4A2113GAC011

| 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 | 18.5 | 25.0 | 38.5 | 738 | 24.60 | 241.24 | IE3 | 40 | S1 | 1000 | 0.8781 | 376 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 17.6 | 19.3 | 25.2 | 30.9 | 38.5 | |
| Torque | Nm | 0.0 | 59.6 | 119.6 | 180.1 | 241.2 | |
| Speed | r/min | 750 | 747 | 744 | 742 | 738 | |
| Efficiency | % | 0.0 | 85.3 | 90.5 | 90.1 | 90.1 | |
| Power Factor | % | 6.1 | 40.8 | 59.0 | 72.0 | 77.0 | |

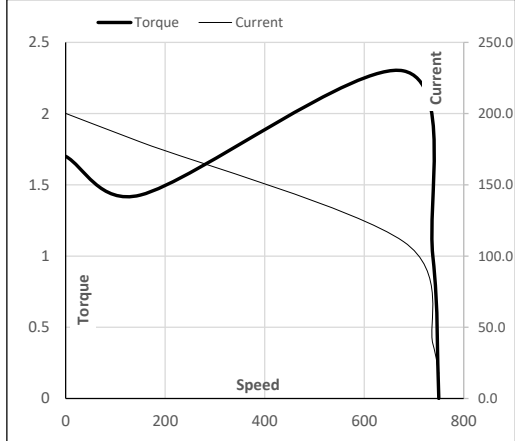
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|-------|-------|-------|-------|------|
| Speed | r/min | 0 | 150 | 679 | 738 | 750 |
| Current | A | 200.1 | 180.1 | 110.2 | 38.5 | 17.6 |
| Torque | pu | 1.7 | 1.4 | 2.3 | 1 | 0 |

Starting Characteristics Chart



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

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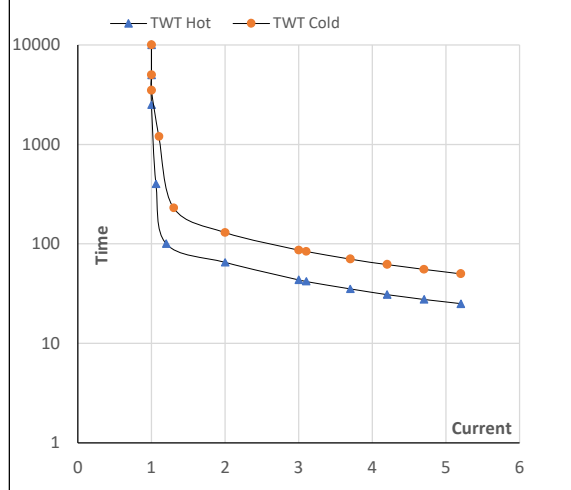
Model No. TCM18P4A2113GAC011

| | | | | | | | | | | | | | | | |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| 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 | 18.5 | 25 | 38.5 | 738 | 24.60 | 241.24 | IE3 | 40 | S1 | 1000 | 0.8781 | 376 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR |
|----------|---------|----------------|----------------|----------------|----------------|----------------|----|
| TWT Hot | s 10000 | 65 | 43 | 33 | 29 | 26 | 25 |
| TWT Cold | s 10000 | 130 | 87 | 67 | 58 | 53 | 50 |
| Current | pu | 1 | 2 | 3 | 4 | 4.5 | 5 |

Thermal Characteristics Chart



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

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